19th European Symposium on

LSP

Languages for Special Purposes

Languages for Special Purposes in a Multilingual, Transcultural World

Proceedings

Languages for Special Purposes in a Multilingual, Transcultural World

Proceedings of the 19th European Symposium on Languages for Special Purposes

LSP 2013

8–10 July, 2013

Vienna, Austria

http://lsp2013.univie.ac.at

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Foreword

The 19th European Symposium on Languages for Special Purposes (LSP 2013) took place on 8-10 July 2013 at the Centre for Translation Studies in Vienna, Austria. This three-day international event was hosted by the University of Vienna and was held under the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO). LSP 2013 continued the long tradition of bringing together LSP researchers and practitioners of various backgrounds, languages, and research traditions. We were honoured to host the Symposium for the second time; the first was held in Vienna in 1995.

The theme of LSP 2013 was Languages for Special purposes in a Multilingual, Transcultural World. The timeliness and topicality of this focus was illustrated by over 200 delegates from more than 40 countries in attendance. The Symposium started with the opening addresses by Dr Eva Nowotny, President of the Austrian Commission for UNESCO, and Professor Larisa Schippel, Director of the Centre for Translation Studies of the University of Vienna. The Symposium itself offered three invited keynote speeches, two invited colloquia and nine parallel tracks on the following topics: multilingualism and language policies, theoretical and methodological issues of LSP research, LSP teaching and training, domain-specific languages, professional communication, terminologies in theory and practice, corpus-studies for LSP, and specialized translation. We decided to incorporate a new feature to this Symposium. For the first time, we organized a new track called Forum for Early-Stage Researchers to encourage graduate students, post-docs, and junior researchers to present their work and to discuss their research and methodology with distinguished senior researchers.

The papers selected to appear in this volume were first presented at the LSP 2013. They are organized under nine major headings:

I.   Domain-specific languages, inter alia: legal, medical, maritime, business, engineering;
II.   LSP in specific languages, countries, regions of the world;
III. Multilingualism, language policies, and socio-cultural issues of LSPs;
IV.   Professional communication;
V.   Specialized translation;
VI.   LSP teaching and training;
VII. Corpus-studies for LSP practice and research;
VIII. Terminologies in theory and practice;
IX.   Colloquium LISE: A quality boost for terminological resources.

Under each heading, the papers appear in alphabetical order according to the authors' last names.

Our thanks are due to the authors for their hard work. We would like to extend our thanks to the members of the Co-opted Scientific Committee, Professor John Humbley and Professor Christer Laurén, for their valuable expertise and dedication. Special thanks go to the Organizing Committee members and their helpers for the smooth operation of the Symposium. We are delighted that the event was held under the patronage of UNESCO and we would like to express our gratitude to the Austrian Commission for UNESCO for their support.

As a final word, we are very excited to see that the LSP community is vibrant and growing internationally. We hope that LSP 2013 fostered interactions and exchange amongst researchers and practitioners in the field of LSP.

Gerhard Budin and Vesna Lušicky

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Memoranda of understanding, letters of intent and contracts: An analysis of speech acts

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Abstract. The aim of this paper is to explore the differences in the use of modals to create illocutionary acts considering three legal genres, the Memorandum of Understanding (MoU), the Letter of Intent (LoI) and the contract. On the one hand, the Memorandum of Understanding (MoU) is an agreement that has hardly been investigated in the existing literature and it is used to establish cooperation in research and in academic/cultural activities between universities. On the other hand, the Letter of Intent is a genre generally used in corporate communication that precedes the MoU in the development of joint research nets. The MoU can be considered as a specific type of contract, thus our research questions are: what are the most significant differences in modal realization among the MoU the LoI and corporate contracts? Are illocutionary acts genres-bound? In particular, the study sets out to explore the use of speech acts. Therefore, it focuses on regulative patterns considering the rhetorical functions of directive and commissive acts (Trosborg 1995) in this legal genre. The analysis is based on a corpus of MoUs signed by Anglophone universities (UK – US – AUS). The results obtained are then compared to those of two comparable corpora of contracts and of Letters of Intent (LoI) in order to show differences and similarities in the patterns observed. From a methodological point of view, the study integrates corpus linguistics and discourse analytical perspectives in the investigation of textual data, relying on both qualitative and quantitative analysis. A combination of computational analysis and manual tagging is employed to select all the relevant regulative speech acts in the corpus. Results show that the MoU is a "hybrid genre" (Bhatia 2004), an instance of "interdiscursive colonisation" (Bhatia 2011: 106) in which the directive component of the contract is combined with the commissive one of the Letter of Intent.

Keywords. Letter of intent, memorandum of understanding, contract, regulative speech acts.

1. Introduction

Legal discourse has been studied from various perspectives in the past years. Several studies have investigated in particular its distinctive lexical features, such as technical terms, archaic expressions, etc., and on its syntactic complexity (see, e.g. Mellinkoff 1963; Danet 1985; Goodrich 1990; Russel and Locke 1992; Gibbons 1994, 2003; Tiersma 1999; Garzone and Salvi 2003; Cornu 2005).

Moreover, scholarly interest has focused on the language used in specific communicative events in legal fields such as police interviews (Coulthard 1996; Gibbons 2003), statutes (Bhatia 1993; Gibbons 2003), witness statements and examinations (Cotterill 2003; Heffer 2005), etc. Furthermore, the emergence of a genre-analytic perspective in the 1990s has significantly affected research in languages for specific purposes (LSP) with major repercussions also on the study. However, the existing literature has focused prevalently on prescriptive/normative documents that are characterized by general applicability (see Gotti and Dossena eds. 2001), while limited attention has been given to the analysis of contracts (Trosborg 1995, 1997, 2000; Blom and Trosborg 1992; Frade 2005; Anesa 2006; Bondi and Diani 2010). As Trosborg (1995) points out, contractual communication is unique since the intentions of the parties are expressed onto print with the help of an intermediary learned in the law. Contracts are "operative documents" (Tiersma 1999) in which the relationship between the parties is symmetrical, as both parties have something of interest to the other party (promise / consideration). They create or modify legal relationships between parties.

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Moreover, with the exception of few studies, the issues of pragmatics and the use of speech acts in written legal discourse have hardly been considered (Kurzon 1986; Trosborg 1995, 1997; Diani 2001; Cavalieri forth.) especially with regard to contracts.

The aim of my paper is thus to further the study of speech acts in written legal discourse dealing in particular with a type of legal document that has received little attention by previous research, the Letter of Intent (LoI), contributing to the existing literature on legal genres. The analysis is focused on modals for socio-pragmatic occurrence and pragmalinguistic realization of potential speech acts basing on the theories on regulative speech acts by Searle (1976) and on legal speech acts by Trosborg (1995).

More specifically, the data will be examined to identify categories of regulative patterns considering both their quantitative presence in the corpus of LoIs and their rhetorical functions. Finally, the results obtained will be compared to those of two reference corpora of Memoranda of Understanding (MoU) (instance of non-corporate agreement) and contracts (corporate agreement) respectively (Cavalieri forth.) in order to explore similarities and differences in categories topology and quantitative presence of speech acts.

2. Materials and methods

The analysis will be based on three small corpora, a main corpus of Letters of Intent (LoICorp) and two comparable corpora of Memoranda of Understanding (MoUCorp) contracts (ContrCorp) respectively. The LoICorp is composed of 40 Letters of Intent signed between English-speaking Departments and Universities from the United Kingdom, the United States and Australia, and non-native English-speaking Departments Universities to start the process of creating international nets of research exchanges, and it amounts to 25,129 tokens altogether. For what concerns the two comparable corpora, on the one hand, the MoUcorp consists of 40 Memoranda of Understanding (54,960 tokens) signed by Departments and Universities. On the other hand, the ContrCorp is comprised of 40 contracts (50,664 tokens) of Private Law including Employment Agreements, Land Agreements, Lease Agreements. All the documents included in the three corpora were selected as full texts and were then transformed into the txt. format to be easily analysed by corpus linguistic tools (e.g. Wordsmith Tools).

Before moving on to the methodology used for the analysis, a description of the Letter of Intent in the legal context is needed in order to understand the type of document thoroughly. The LoI is a legal document signed between institutions (in our case universities, departments etc.) outlining a bilateral or multilateral agreement before its finalization. LoIs resemble written contracts, but are usually not binding. Many LoIs, however, contain binding provisions such as non-disclosure agreements or a covenant to negotiate in good faith. LoIs signed between universities are preliminary documents to create a network for research cooperation with other institutions, or to begin student and researcher exchanges with international partners. A Letter of Intent differs from a Memorandum of Understanding for one main reason concerning the condition for their validity; an LoI, in fact, outlines the intent of one party toward another with regard to an agreement and may only be signed by the party expressing that intent, whereas an MoU must be signed by all parties to be valid.

As for methodologies, the study relied on an integration of corpus and discourse analysis using both quantitative and qualitative methods to analyse the three corpora (LoICorp, MoUCorp and ContrCorp). More specifically, four main steps were followed. Firstly, all the occurrences of regulative acts were isolated and extracted from the two wordlists of the corpora by means of a computer-assisted analysis performed with Wordsmith Tools version 5.0 (Scott 2008). The speech acts individuated were then analysed considering their pragmalinguistic realization of directives and commissives by which the parties are committed.

Secondly, the selected items were concordanced and all concordances were submitted to manual tagging in order to isolate only relevant speech acts and to specify potentially ambiguous items.

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Thirdly, a framework to classify the regulative speech acts and their rhetorical functions was identified following and, at the same time, implementing the model proposed by Trosborg (1995).

Finally, the results obtained by the three corpora were compared and similarities and differences discussed.

In the next section a definition and a model for classification of the regulative speech acts investigated is provided.

3. The classification of regulative speech acts

In his classification, Searle (1976) outlined two major categories of regulative acts: directives, an obligation issued by one party over the other, and commissives, an obligation issued by a party committing him/herself. Due to its legal nature, a contract is "a legally binding agreement imposing [both] rights (*directives*) and obligations (*commissives*) on the parties [...]" (Redmond 1979: 19).

For what concerns the first category, directive speech acts are illocutionary acts by means of which the addresser tries to influence the behavior of the addressee. According to Havertake (1984), directives are *impositive speech acts* defined as follows:

[...] speech acts performed by the speaker to influence the intentional behavior of the hearer in order to get the latter to perform, primarily for the benefit of the speaker, the action directly specified or indirectly suggested by the proposition (p. 107)

As a consequence, a directive is a "face-threatening act" (Brown and Levinson 1987: 62) as it attempts to exercise power or direct control over the intentional behavior of the addressee. According to the theory of Brown and Levinson (1987), the imposition of directives can be expressed at various degrees going from explicit directive force ("on record"; e.g. imperatives, unhedged performative utterances, the modals *shall*, *must*) arriving to directives issued by making recourse to politeness strategies, i.e. mitigating devices ("off record"; e.g. the modals *can*/*could* or *will*/*would* [concerning the ability/willingness of the addressee], *may* [permission], suggestory formulae, statement of wishes/desires/needs of the speaker).

Moving on to the second category, commissive speech acts are 'convivial acts' (Leech 1983: 104) which commit the speaker to a certain course of action (Austin 1962: 156). The speaker's commitment is usually expressed through performatives such as *promise*, *vow*, *pledge*, *covenant*, *contract*, *guarantee*, *swear*, etc., and through the modal will functioning as an implicit performative.

Table 1 shows the classification of regulative speech acts with their linguistic realizations in contracts proposed by Trosborg (1995), which provided a framework for the analysis of regulative speech acts in MoUs.

DIRECTIVES	1. CONSTITUTIVES	Lexical main verb
		Be-constructed
		Shall
	2. PERMISSION/RIGHTS	Lexical main verb
		May
		Can
	Assignment of benefit/liability	
	Negated assignment of benefit/liability[1]	
	3. OBLIGATION	Are to/ Must/ Shall / Lexical main verb/ Will
	4. PROHIBITION	May/Can + neg.
		Shall + neg.
		Will + neg.
COMMISSIVES	5. PROMISES	Promise/ Acknowledge/ Warrant/ Covenant/ Undertake/ Accept etc.

Table 1: Regulative speech acts framework.

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4. Results

This section is sub-divided into two main parts. In the first section, the results of the analysis of regulative speech acts in the LoICorp are presented. In the second section, emphasis is laid on the similarities and differences retrieved comparing the results obtained by the investigation of the three corpora.

4.1. Regulative speech acts in the LoICorp

After a first quantitative analysis (wordlist) of the LoICorp, we observed that the total number of regulative speech acts amounted to 465 items.

As a second step, the LoICorp was analysed focusing on the occurrence of directive acts, thus dealing with the sub-categories *constitutives*, *rights*, and *obligations/prohibitions*. Our results highlight a predominance of *obligations* (57.2%) and the most frequent realization of this sub-category is through the use of the modal *will* (40.0% out of the total 57.2%), followed by the modal *shall* with a percentage of 12.5%. The modal *must* and the construction *be + to* (no instances found in the corpus) are the less present covering a percentage of only 2.4%. An explanation for this distribution could be probably sought in the legal nature of the Letter of Intent. In fact, the LoI is a document settled only to express the intent/willingness to converge in a common line of action, to demonstrate a preliminary understanding between the parties. Table 2 shows the distribution of *obligations* in the LoICorp with some instances extracted by the manual tagging of the corpus:

OBLIGATIONS			**% per category**	**% tot**
Prohibition	**May + neg**	2 (0.4)	2.3	
	Can + neg	1 (0.2)		
	Shall + neg	3 (0.5)		
	Will + neg	5 (1.1)		
	ex. Any information gathered in the performance of subsequent Agreement will not be disclosed ... (loi_us_4)			
Obligation	**Is/are to**	/	54.9	**57.2**
	Must	11 (2.4)		
	ex. Exchange students **must** abide by the laws of the host country affecting foreign nationals ...(loi_us_8)			
	Shall	58 (12.5)		
	ex. Exchange students **shall follow** an academic programme developed in consultation with the student's home institution. (loi_uk_6)			
	Will	186 (40.0)		
	ex. AU **will be consulted** thoroughly before any such decisions are taken (mou_us_21)			

Table 2: Regulative acts in the LoICorp – obligations

The two classes *constitutives* and *rights* are almost equally present in the corpus with a percentage of 18.1% and 20.0% respectively. Examples in Table 3 show that *constitutives* in LoIs are mainly realized through the construction *be + copula* (11.0% out of 18.1%). As it is possible to observe in the examples provided in Table 3, the main function of *constitutives* is to establish the terms and conditions relating to date, implementation, etc. of a subsequent MoU following the LoI. No instances of constructions with *lexical main verb* and no *predictions* were found in the corpus.

CONSTITUTIVE			% per category	% tot
Statements	**Lexical main verb** (include/ mean/ apply/exclude, etc.)	/	18.1	
	Be-constructed ex. The Director **is responsible for** ensuring the implementation of the stated objectives of the ATN. (loi_aus_3)	51 (11.0)		
	Shall/will ex. This LoI **shall be followed** by a MoU before...(loi_uk_5)	33 (7.1)		
Predictions	**Shall**	/	/	**18.1**
	Will	/		

Table 3: Regulative acts in the LoICorp - constitutives

As far as *rights* are concerned, in the LoI both institutions involved (Universities, Departments, etc.) could grant permission to students and researchers of the other institution. Statements of permission amount to 20.0% of the total number of strategies and they are generally expressed through the modal *may*/*can* or through lexical verbs such as *permit*, *allow*, *give permission*/*allowance*, etc. Table 4 provides examples for the sub-category rights:

RIGHTS			% per category	% tot
Permission	**Lexical** (permit*/allow*/give* permission, allowance etc.)	12 (2.6)	17.2	
	ex. The University of Sidney **allows** members of the University of Rome "La Sapienza" to collaborate on Australia-wide and international issues and initiatives, while retaining the flexibility to adapt to their individual circumstances. (loi_aus_4)	58 (11.4) 15 (3.2)		
	May/Can ex. Aston University may determine the period of staying of the researcher (loi_uk_7)			
Assignment of benefit	BOTH PARTIES ... **have full right, power, and authority** to execute the LoI on the date signed. (loi_us_2)	5 (1.1)		
Negated assignment of benefit	**neither** institution **shall enforce** criteria for the exchange of faculty or students which would violate ...(loi_uk_3)	8 (1.7)		
Liability	/	/		
Negated limitation of liability	/	/	2.8	**20.0**

Table 4: Regulative acts in the LoICorp - permissions

Moving on to commissive speech acts, as shown by the LoICorp, they are mainly in the form of promises by which a party commits him/herself before the law. The most frequent items found in the data are the performative verbs *promise, acknowledge, warrant, covenant undertake, accept* (4.7%).

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4.2. Regulative speech acts in the MoUCorp and in the ContrCorp

4.2.1. Regulative speech acts in the MoUCorp

Observing the wordlist of the MoUCorp, we highlighted a presence of 1799 regulative speech acts.

The instances of directive acts were then analysed considering the sub-categories *constitutives*, *rights*, and *obligations*/*prohibitions*. As it is for the LoICorp, the results show a predominance of *obligations* (63.3%) mainly realized through modal *will* (48.5% out of the total 63.3%) as a first instance, and by the modal *shall* with a percentage of 10.4% as a second instance. The modal *must* and the construction *be + to* (no instances found in the corpus) are far less present in the corpus with a percentage of only 2.6%. The MoU and the LoI have the same legal nature. Indeed, the MoU as well represents a type of agreement only outlining the interest of the parties to converge in common research and teaching activities, showing intents and preliminary understanding between the parties. Table 5 shows the presence of *obligations* in the MoUCorp providing also some examples extracted by the concordances:

OBLIGATIONS			% per category	% tot
Prohibition	**May + neg**	6 (0.3)	2.8	
	Can + neg	/		
	Shall + neg	12 (0.7)		
	Will + neg	32 (1.8)		
	ex. Any research information will not be disclosed ... (mou_us_4)			
Obligation	Is/are to	/	60.5	**63.3**
	Must	48 (2.6)		
	ex. Administrative staff must respect the laws of the host country .(mou_us_8)			
	Shall	118 (6.6)		
	ex. Exchange students shall abide by the rules of hosting institution. (mou_uk_6)	50 (2.8)		
	Will	873 (48.5)		
	ex. AU will be informed before any such decisions are taken (mou_us_21)			

Table 5: Regulative acts in the MoUCorp - obligations

As far as the categories *constitutives* and *rights* even in the MoUCorp they are almost equally present with a percentage of 17.6% and 16.7% respectively. As shown by the examples provided in Table 6, *constitutives* in the form of statements serve the purpose of establishing the terms of the MoU and spelling out conditions relating to date, implementation of the agreement, etc. The instances found in the MoUCorp typically involve a lexical verbs (162 instances out of 234 - 10.6%) such as *include*, *mean*, *apply*, *exclude*, etc. and the construction *be + copula* (70 instances out of 234 - 4.6%).

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CONSTITUTIVE			% per category	% tot
Statements	**Lexical main verb** (include/ mean/ apply/exclude, etc.)	162 (10.6)	12.8	
	ex. This Memorandum of Understanding **applies** to a partnership established between (the School of XXXX), Aston University and (Partner Institution) (mou_uk_5)			
	Be-constructed	70 (4.6)		
	ex. The Director **is responsible for** any change in the implementation of the present MoU. (mou_aus_4)			
	Shall/will	2 (0.1)		
	ex. This Memorandum of Understanding *shall enter* into force at the date of the last signature of all the parties and shall, subject to the provisions of Clause 13, continue in force until 31 August 2007. (mou_ uk_7)			
Predictions	**Shall**	90 (4.8)	4.8	**17.6**
	Will	/		

Table 6: Regulative acts in the MoUCorp - constitutives

When dealing with the category *rights*, it is possible to observe that statements of permission amount to 13.6% of the total number of items of the other sub-categories. Similarly to the LoI, *permissions* are generally expressed through the use the modals *may* and *can* or through the use of lexical verbs such as *permit, allow, give permission/allowance*. Table 7 provides examples for the sub-category *rights*:

OBLIGATIONS			% per category	% tot
Permission	**Lexical** (permit*/allow*/give* permission, allowance etc.)	14 (0.8)	13.6	
	ex. The ATN's structure **allows** members to collaborate on Australia-wide and international issues and initiatives, while retaining the flexibility to adapt to their individual circumstances. (mou_aus_4)			
	May/Can	183 (10.2)		
	ex. Durham University **may determine** the period of staying of the researcher (mou_uk_7)	39 (2.6)		
Assignment of benefit	BOTH PARTIES ... **have full right, power, and authority** to execute this Agreement on the date signed. (mou_ us_4)	17 (0.9)		
Negated assignment of benefit	**neither** institution **shall impose** criteria for the exchange of faculty or students which would violate ...(mou_us_8)	12 (0.7)		
Liability	/	/		
Negated limitation of liability	**Neither** party shall have **any liability** to the other for any failure to perform any A obligations under this Agreement (mou_us_10)	27 (1.5)	3.1	**16.7**

Table 7: Regulative acts in the MoUCorp - permissions

The last category *commissives* are mainly in the form of promises and the most frequent items found in the data are the performative verbs *promise*, *acknowledge*, *warrant*, *covenant undertake*, *accept* (2.4%).

4.2.2. Regulative speech acts in the ContrCorp

The analysis of the wordlists of the ContrCorp highlighted a presence of 5897 items of regulative speech acts in the data. Observing closely to the occurrences, a predominance of *directives* is absolutely evident (96.6%). As it was for the MoUCorp, the most frequent sub-category of directives was *obligations* with the 67.9%. In order to express obligation in contracts, the modal *shall* is the most frequent item (42.4%). *Shall* is used to express the illocutionary force of an order.

Even when dealing with the sub-category of *prohibition*, the negative version of the modal *shall* is used almost exclusively (5.4% out of 6.2% of the strategies observed). Table 8 shows results and examples for the category *obligation*:

OBLIGATIONS			% per category	% tot
Prohibition	**May + neg**	50 (0.8)	6.2	
	Can + neg	2 (0.03)		
	Shall + neg	316 (5.4)		
	ex. The Developer or the Lessor **shall not have** any civil, criminal, labor or any other type of liability (la_6)			
	Will + neg	/		
Obligation	**Is/are to**	53 (0.9)	61.7	**67.9**
	Must	152 (2.6)		
	ex. the other party must receive a copy of the respective testimony.(la_8)			
	Shall	2500 (42.4)		
	ex. Landlord and Landlord's agents **shall have** the right at all reasonable imes during the term of this Agreement (la_8)			
	Lexical main verb	260 (4.4)		
	Will	670 (11.4)		

Table 8: Regulative acts in the ContrCorp - obligations

As regards to rights, in contracts there is a symmetrical relation between the two parties, either of which is able to grant permission to the other party. As shown by Table 9, the modal may is the almost exclusively used item in the ContrCorp to express permissions.

RIGHTS			% per category	% tot
Permission	Lexical (permit*/allow*/give* permission, allowance etc.)	201 (3.4)	15.6	
	May	704 (11.9)		
	ex. The Hirer **may determine** the hiring at any time by giving one month's previous notice […] (LA_3)			
	Can	19 (0.3)		
Assignment of benefit	The rights and obligations of the Company under this Agreement **shall inure to the benefit** of and be binding upon the successors andassigns of the Company (EA_7)	190 (3.2)		
Negated assignment of benefit	The duty to disclose contained in this clause **shall not** impose on either party any obligation (LA_8)	20 (0.3)		
Limitation of liability	Landlord may dispose of all such personal property...Landlord **is hereby relieved of all liability** for doing so (la_6)	53 (0.9)		
Negated limitation of liability	Landlord or its agents **shall have no liability**...	18 (0.3)	4.7	**20.3**

Table 9: Regulative acts in the ContrCorp - rights

Constitutive rules have the same role in contracts than in MoUs. In fact, constitutives are used to determine terms (for example, concerning liability) and conditions concerning price, date, amount, etc. Moreover, they give definitions of terms and expressions in the contract or supply information concerning application of these terms. Typical examples found in the ContrCorp are *mean*, *apply*, *include*, *exclude*, etc. (3.6% out of 7.1% of the strategies observed), or constructions with *be + copula* (2.4% out of the 7.1% of the strategies observed). Table 10 summarizes the data giving examples for the category:

CONSTITUTIVES			% per category	% tot
Statements	**Lexical main verb** (include/ mean/ apply/exclude, etc.)	211 (3.6)	7.1	
	ex. "Accident" **includes** exposure resulting from a mishap to a conveyance … (EA_6)			
	Be-constructed	139 (2.4)		
	ex. Buyer **is responsible** for all costs of any 'quiet title or other action ...(LA_7)			
	Shall/will	62 (1.1)		
	ex. Any notice **shall be deemed** to be duly served 48 hours after posting … (LA_5)			
Predictions	**Shall**	77 (1.3)	1.3	**8.4**
	Will	/		

Table 10: Regulative acts in the ContrCorp - constitutives

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As far as commissive acts are concerned, the most frequent items observed in the ContrCorp were the performatives *warrant* and *acknowledge*, whereas the less frequent were *promise* and *covenant*. This category represents only the 3.4% of the total amount of regulative speech acts.

5. Discussing the findings

Comparing the data, a first observation can be made in terms of type of regulative speech acts found in the two corpora. As demonstrated by the analysis, LoIs, MoUs and contracts present the same topology of regulatives, however the occurrence of regulative speech acts in LoIs and MoUs is far less frequent than in contracts (465 items out of 25129 tokens in LoIs vs.1799 items in MoUs out of 50664 tokens and 5897 items out of 54960 tokens in contracts)

In the second place, it was noted that the category of *directive*, and in particular the sub-category of *obligations*, dominated (LoICorp 57.2%; MoUCorp 63.3%; ContrCorp 67.9%) in the three corpora. However, the most frequent items differ in the three corpora. On the one hand, the modal *shall* is the most used item in contracts (42.4%), on the other hand, the modal *will* resulted to be the most frequent indicator of obligation in LoIs (40.0%) and MoUs (48.5%). The explanation for the less frequent occurrence of regulative acts and for the massive use of the modal *will* is probably to be sought in the legal nature of the Letter of Intent and Memorandum of Understanding, which are a type of documents only highlighting an expression of the willingness to converge in a common line of action, to show intents and preliminary understanding between the parties.

The explanation above is applicable even to *prohibitions* that are far more frequent in contracts (6.2%) than in LoIs (2.3%) and in MoUs (2.8%).

In contrast, the category of *constitutives* is more used in LoIs and MoUs (LoICorp 18.1% and MouCorp 16.7% vs. ContrCorp 8.4%) and this fact can be probably be explained by the institutional role played by these types of documents in which all terms and conditions are settled preliminarily.

6. Notes

[1] The sub-category Assignment of Benefit/Liability involves a dual function: it distributes a right to whomever is entitled to it and a latent duty on the party not entitled to it – irrespective of which party makes the utterance. Negated Assignment of Benefit/Liability is a pragma-semantically related version of this sub-category, in which case the right assigned is some kind of debt reduction, restriction as to commitment etc. (e.g. neither party shall be liable for…) (Trosborg 1995: 39).

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English for the military and security forces: The reason why

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Abstract. The importance of English for Specific Purposes (ESP) has been increasing in several areas of knowledge. However, there is little information about the meaning of ESP regarding the military and security environment. Due to numerous changes both at a national and international level within the Armed and Security Forces fields, the use of the English language in context has become an essential part in the Curricula of anyone willing to belong to the Portuguese Armed and Security Forces. One of NATO's founding members, Portugal has to participate in several types of military and law enforcement activities like peace keeping operations, joint and combined exercises, fighting piracy, etc. In doing so, it is expected that all participants are up to date in terms of knowledge regarding communication and all its means, types of equipment and operational needs. The Portuguese Military Academy, in Lisbon, is a unique and successful case of teaching ESP: military and law enforcement English. From the three academies of the Armed Forces (Military Academy, Navy School and Air Force Academy) the Military Academy is the only institution that teaches its students ESP for 3 years. The majority of the cadets finish those 3 years with the indispensable knowledge of specific English they will be required to use in their professional lives. Moreover, cadets learn English with materials which are specific and directed to their needs: the course books and CDs Campaign, English for Law Enforcement and material produced and collected by the teachers. In a time of constant change, new types of conflict and new types of opposing forces, must be taken into account and rapidly dealt with. Hence, Military and Law Enforcement English is a branch of ESP that needs to be known and shared by a larger group of researchers in order to be capable to respond to all needs, at all times.

Keywords. English for Specific Purposes, defense and security environment, education and training.

1. Introduction

Though the importance of English for Specific Purposes has been increasing in several areas of knowledge, we seldom hear people talking about its relevance in terms of applying the language to the field of Defense and Security. In fact, there is not much information regarding what it really means to teach and learn ESP within the defense and security environment.

One might wonder why would there be a need for learning a specific kind of English when people are basically dealing with weapons or police techniques? Maybe we should start from the very beginning to explain why English applied to the military does matter by taking the example of what happens in Portugal, at the Military Academy, where young men and women enter as freshly graduates from high school and leave at the end of five years, fully trained to become Army and Gendarmerie officers.

2. The Military Academy in Portugal

The Military Academy, located in Lisbon, is a public higher education institution that develops teaching activities, research and community support, with the main purpose of training the future officers of two distinct forces: the Army and the Gendarmerie.

Academically, the courses are organized in a way similar to other higher education institutions. In terms of military training and behavioral areas, the courses follow the directives of the Army Chief of Staff.

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Army and Gendarmerie are two forces that differ in the sense that the Army is in charge of Defense (basically national defense), whereas the Gendarmerie is a force that has military training but performs its task at a police level, in terms of national security.

National security it is meant to be everything that has to do with the community: be it theft crime, search and rescue, domestic violence, public order maintenance, or drug dealing just to mention some of GNR's tasks and activities. Yet, dealing with national security also means knowing about crime scene investigation, legal systems, or even transnational crime.

Still, where does English fit in, within this Defense and Security environment? It fits in in the sense that due to numerous changes both at a national and international level within the Armed and Security Forces fields, the use of the English language in context has become an essential part in the Curricula of every individual who is willing to become part of the Portuguese Armed and Security Forces.

As one of NATO's founding members, Portugal has to participate in several types of military and law enforcement activities such as intervening in armed conflicts (with its armed forces) in order to enforce peace or intervening after that conflict (with the Gendarmerie) in order to build peace, to mention but two of those activities.

It can be stated that, at a political and diplomatic level, the members of NATO have to be able to deal with two languages, so that they can fully understand and communicate with each other, and those two languages are French and English. Still, when we refer to military operations being held within the frame of NATO, that language is unquestionably no other but English.

It is therefore expected that, whenever a country takes part in any type of peace operations; armed conflicts; humanitarian missions or overseas assignments; or when the military forces of a country take part in any joint exercise (by that meaning a multinational level exercise), all participants will have a standardized level of knowledge in terms of communication and performance on common and technical issues like operation orders (the detailed instructions for leading and executing a military operation); or in terms of understanding the tactics to use for a determined situation; or even being prepared to answer questions related with any kind of operational equipment required; or being able to use that same equipment (a radar or a radio, for instance).

Basically, it means that if someone belonging to the Armed and Security Forces is not skilled and proficient enough in terms of using the English language in a multinational environment two things can happen: either he/she will not take part in that particular mission, operation or assignment, or he/she can simply jeopardize that mission or assignment by participating in it without the necessary knowledge and skills.

Bearing all the above information in mind, and based upon that information, it can be therefore concluded that the knowledge of the English in the Armed and Security Forces environment is nowadays unquestionable and of major importance. Adding to that it is now necessary to say, following that line of thought, the Academia Militar, in Portugal is a unique and successful case of teaching English for Specific Purposes (ESP): Military and Law Enforcement English.

Of the three academies of the Armed Forces (Military Academy, Navy School and Air Force Academy) the Military Academy is the only institution that provides its students with 4 years of ESP.

3. English for the Military and Security Forces

What exactly do the cadets learn in English classes over those 8 semesters? Along with all the vocabulary to do with weaponry, topography, tactics and signals (in the case of the Army); or crimes against property, traffic and vehicles, civil disorder or criminal justice systems (in the case of the gendarmerie), cadets learn how to make briefings (several types of briefings used in different contexts), how to plan and execute operation orders; how to write military

correspondence and how to communicate on the phone to superiors or subordinates, or via radio, just to mention but some of the topics that constitute their syllabuses.

Moreover, cadets' learning process regarding the English language is facilitated by using materials and course books which are military and law enforcement specific and which are also directly addressed to their needs: at the moment their courses focus upon a course book called Campaign (for the Army), and another book called English for Law Enforcement (for the Gendarmerie), specially designed for the military and law enforcers, along with real material collected by the teachers from military sites, books and other real documents like Field Manuals or the Rules of Engagement used for a particular conflict and theatre of operations. Real material is used and is also always connected with the areas of Defense and Security.

As a result, most cadets finish their 4 years of English tuition with, at least, the essential knowledge of English to communicate in all kinds of situation in his/her daily life; but for sure, with the indispensable knowledge of specific English they will need to use on a regular basis in their professional lives.

Then again, what is the ground to state that cadets are given essential knowledge of English, but the indispensable knowledge of specific English? Bearing in mind that the Portuguese Armed Forces follow all NATO standards and procedures, this is the point where the NATO Standardization Agreement must be referred. This Standardization Agreement is a document with rules and procedures which apply, precisely, to language requirements and procedures: that being called STANAG 6001.

STANAG 6001 addresses all NATO members and concerns any language standards, which are taught and spoken by them. In the following lines, only the English language will be focused upon.

As written in its latest version, dated 2010, STANAG 6001's aim is "to provide NATO Forces with a table describing language proficiency levels", that is to say, it is used to define an individual's language proficiency.

This document provides detailed definitions of all proficiency levels in terms of the commonly recognized language proficiency skills: "listening", "speaking", "reading", and "writing". The Standard Language Profile (SLP) of each student is given and understood by means of a four-digit sequence referring to those four skills.

As far as the Military Academy is concerned and regarding the English language, at the end of their academic course, Portuguese Army and Gendarmerie cadets are expected to reach level 3333 of proficiency. Expected because it is not mandatory yet.

The expression most cadets and not all cadets was used some lines above to describe the kind of knowledge cadets achieve by the end of their English learning process at the Military Academy: it is possible that all cadets learn English, and it is probable that they all manage to learn specific vocabulary in context, even if some of them (a minority, but a reality, too) still will not go far beyond survival English, but it is not likely that everybody can achieve a level of proficiency as high as a level 3 in all four skills.

In any case, although it is a reality that many cadets can now be assessed and reach what can be called "a three", whilst others will still only be capable of reaching a level 2 regarding the four skills, the idea that each and all cadets will - at the end of their courses - be in possession of all the tools to use English applied to the military on a regular basis, that is, to their professional life, is an idea that must surely be reinforced at this point.

Why use the expression "on a regular basis"? For in a time of constant change, new types of conflict and threats and new types of opposing forces, have to be foreseen, taken into account and rapidly dealt with. It is not only and not anymore a matter of being deployed on a mission, or being chosen to take part in some joint exercise across the border.

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The point is that armed and security forces personnel have to always be prepared to respond to whatever unpredictable situations might occur, and they all must be ready to defend not only their own homeland, but in the current globalized world of the 21st century, to defend other people's homelands too and with the same attitude and strength they would use to fight for their own.

This is to say that, security and defense personnel have to be capable of communicating, interacting, and interoperating without hesitations of any kind, without barriers of any type, be it political, economic, or linguistic and to be capable of doing it at any required time.

If one takes the new threats of our times - terrorist attacks, for example, or cyber-attacks - and just think of how fast it is necessary to react in order to be effective, one must also be aware of the fact that the threats of the present can no longer be fought with weapons only.

Current threats armed and security forces have to fight against are now dealt with by means of surgical interventions. And by surgical intervention is saying intervening in very specific spots of a conflict, parts of a city, for example, and not over whole areas, like entire cities.

 Besides that, after some terrorist attack or at the end of a civil war for instance, one must bear in mind the type of readiness that forces have to handle in order to be prepared to respond and be in the theaters of operations just in time to assure the populations with at least some words of comfort and affection, or with the necessary strength for putting an end to the chaos left either by an explosion caused by a terrorist attack or the destruction provoked by an earthquake or a tsunami.

The effectiveness that is being described upon these lines does not come from using more powerful weapons or from destroying the enemy by ambushing enemy forces and arresting all of them at once. The effectiveness that is to be highlighted through this paper is the effectiveness that comes from functional multinational operations. The functionality, which means previous preparation in terms of management, politics, training and culture.

Also, the functionality that comprehends a thorough knowledge and good proficiency of a language, in order to be capable of fully interacting with one's peers from different countries, but also to interact with the local populations in the theatres of operations. Current international conflicts and the peacekeeping duties deriving from it imply an enormous amount of means and people involved in it.

Like the mechanism of a machine, for the structure of any joint or combined operation to work in perfect conditions, the pieces that shape the mechanism have to be flawlessly oiled. Which is the same as saying that, along with the military support and personnel taking part in the resolution of conflicts and peacekeeping duties, other factors contribute in equal, if not sometimes major, terms for reaching the final aim of peace. Those factors always include close cooperation amongst friendly forces for which the knowledge and use of a common and shared language stands out as an essential component.

Along with all that was written above, it must also be added that a common language used in military contexts can mean twice as much as it does in daily civilian contexts. A shared language used by the military can work as an ice breaker in terms of cultural barriers, as it does in civilian contexts, but it can also be used as a tool to help building bridges regarding full knowledge and understanding of either concepts of operations, tactics or even local habits which might be essential for the resolution of a conflict or the training of local police or armed forces.

To work using a shared language that is not necessarily your own language, can also mean that everybody involved in that particular mission or assignment has the capacity to work together aiming for the same target of reaching peace, because they all possess the essential communication skills which are necessary to cooperate in an international environment. This is called interoperability and it has become crucial when one talks about multinational forces and all the tasks they have to perform.

Apart from the referred international missions for conflict resolution or for humanitarian reasons, some other tasks which require a good command of the English language applied to the military have to do with the role played by liaison officers, observers (working under the UN umbrella, for instance) and security advisors; the training of local populations' police and armed forces after the conflicts; or even seminars and meetings held with peers from other nationalities, International Organizations, or local NGOs.

Even at a national level there are other tasks requiring some proficiency in the use of English within the defense and security environment that must not be forgotten. That is the case of: border control operations (having to deal with situations of drug smuggling or even human trafficking); search and rescue operations (when the pilots involved are from other countries); tourism support patrolling or joint and combined exercises taking place in national territory.

For all the above reasons, it can be stated that Military English is undoubtedly in increasing demand in the same proportion that forces from different countries are gathering to work together in a multinational and interoperational environment. Hence, the need of more specific English in the field of the armed and security forces is closely connected with their need to adapt to the present changes in the field of defense and security and, ultimately, with the very concept of war.

In the Portuguese Military Academy, cadets realize the importance of learning ESP, especially because they know that learning will be the key to a better preparation and understanding of the large and varied number of tasks they will be facing after graduation. Among which, those tasks include: overseas assignments; humanitarian missions; peacekeeping operations; describing tactics; patrolling; emergency situations; understanding and using international laws relating to conflict; learning to lead and also to be led. Last but not least, the task of dealing and negotiating with local communities and local military leaders or local law enforcers. Situations where English is the language most commonly used.

The increasing importance of ESP applied to the defense and security fields has led to the fact that, as from this school year (2013/2014) onwards, students willing to join the Military Academy have to undergo a mandatory English language test intended to determine both their level of English proficiency and, based on that proficiency, whether they will be able to join the Military Academy or not.

4. Conclusion

To conclude, it can be stated that regarding the Armed and Security Forces sphere, there is currently no doubt that the language working as a key enabler for obtaining the best and fastest results worldwide is the English, and that the more one know in terms of English applied to these areas, the shorter the distance to solutions of peace and understanding gets.

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Konzeptuelle Modellierung der systematisierenden elektronischen Wörterbücher in interdisziplinären Fachgebieten

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Abstract. The report presents possibilities of the conceptual modeling of systematizing electronic dictionaries in heterogeneous and unsystematic science domains.

Glossary project elaboration puts two major lexicographic problems to be solved: base terms selection and term system modeling.

To form the base terminology the concept analysis combined with the statistical methods is suggested. The concept terminology has determined the lexicographic frame of the Glossary in all its principle aspects:

- *Typological parameters*: special-field terminological, explanatory, translation, ideographic, encyclopedic, normative, Learner's, electronic.
- *Dictionary functions*: systematizing, academic, reference, pedagogical.
- *Macrostructure*: thematic, alphabetic, Russian-German-English, definition structure and interface.
- *Microstructure*: entry term; concept term field; German equivalent; English equivalent; definition; synonyms; abbreviations; commentaries.
- *Means of term semantization*: generic and concept notions; definition; equivalents; synonyms; abbreviations; hyper reference.

Special attention will be given to categorial structure of the scientific knowledge which includes not only special branch definitions, but universal conceptual categories, such as process, substance, characteristic, system, unit.

The method of categorial modeling of the term system allows to a) find and fix the basic terminology in interdisciplinary domains, b) highlight the principles of systematization of the terms in the dictionary, c) present a generalized meaning-system in heterogeneous and unsystematic domains terminologies, d) accompany a structured lexicographic process from the conception phase to the final lexicographic product.

Keywords. Conceptual modeling, lexicography, typological parameter, glossary, categorial modeling, terminology.

1. Einleitung

Im Artikel wird das Modell eines systematisierenden dreisprachigen Glossars für die Sprachen Russisch-Deutsch-Englisch auf dem Fachgebiet „Umweltaudit" dargestellt. Es sei behauptet, dass russische Umweltaudit-Terminologie für Institutionen aller Art nachgefragt ist, weil sie momentan sehr heterogen und unsystematisch vorkommt. Das Glossar-Projekt löst zwei lexikographische Probleme: Lemmaselektion und Wörterbuch-Modellierung.

Interdisziplinarität tritt gegenwärtig in mannigfacher Weise in Erscheinung, so z.B in Form von sondernwissenschaftlichen oder universalwissenschaftlichen Tendenzen. Sie wird von einzelnen Autoren mit dem Begriff „Synthese" in Beziehung gesetzt und damit identifiziert.

Der synthetische Charakter als Folge fächerübergreifender Forschung schafft einen Mehrwert an Erkenntnis, indem das, was eine Disziplin zu einem bestimmten Problemfeld zu sagen hat,

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durch die Sicht anderer Disziplinen erweitert und ergänzt, modifiziert und relativiert oder auch präzisiert werden kann.

Einige neue wissenschaftliche Fachrichtungen wie *quantitative Linguistik*, *Computerlinguistik*, *Biochemie* sind aus längerer interdisziplinärer Zusammenarbeit entstanden. Wesentlich dabei ist, dass über die Fachgrenzen hinweg ein Verständigungsprozess stattfindet, d.h. eine gemeinsame Sprache zur Beschreibung und Lösung der Probleme gefunden wird, aber auch Kriterien, beispielsweise zur Bewertung der Qualität der wissenschaftlichen Leistung, geteilt werden.

Wissen und Information sind nicht die alleinigen Bestandteile der sich informierenden Gesellschaft. Vielmehr sind aber der Zugang zum Wissen, die Systematisierung und die Verwendung des Wissens wesentlich. Aus diesem Grund sollte ein anwendungsorientiertes Wörterbuch nicht nur eine Sammlung von Wissen/ von der Information darstellen, sondern eine Anleitung beinhalten, das wahrgenommene Wissen zu nutzen.

Ziel meiner Untersuchung ist die Konzipierung eines systematisierenden dreisprachigen Glossars für die Sprachen Russisch-Deutsch-Englisch auf dem Fachgebiet „Umweltaudit" (Öko-Adit). Die Veränderlichkeit (statisch vs. dynamisch) spiegelt hier nicht die absolute Fixierung von Wissen wider, sondern vielmehr die temporäre Fixierung der Fall ist. Die Grenzen dieser Disziplin sind fließend.

Öko-Adit im Rahmen meiner Untersuchung bezeichnet - eine von einem Umweltgutachter durchgeführte Konformitätsbewertung, mit der festgestellt werden soll, ob Umweltprüfung, Umweltpolitik, Umweltmanagementsystem und interne Umweltbetriebsprüfung einer Unternehmung sowie deren Umsetzung den Anforderungen dieser Verordnung entsprechen. Das Ziel der Verordnung besteht darin, den Stand des betrieblichen Umweltschutzes zu dokumentieren, das Umweltmanagement kontinuierlich zu verbessern und seine Entwicklung zu fördern. Mit anderen Worten ist Öko-Audit ein Verfahren, bei dem ein Betrieb freiwillig sein Umweltverhalten überprüft, verbessert und offen legt. Ein Umweltaudit können alle Unternehmen unabhängig von ihrer Größe oder Branche einrichten, die ihre Umweltleistung verbessern möchten.

2. Problemstellungen

Wesentliche Problemstellungen bei der Erarbeitung eines neuen Glossars sind Folgende:

1. Analyse und Formulierung der Notwendigkeit und des Zwecks;

2. Anforderungen der Nutzer;

3. Auswahl der Lemmata;

4. Aufbau des Wörterbuchs. Makrostruktur;

5. Aufbau des Wörterbuchs. Mikrostruktur.

2.1. Das erste Problem ist **Analyse und Formulierung der Notwendigkeit** und des Zwecks. Es fehlt noch der Versuch, eine zeitgemäße Konzipierung der Wörterbuchbasis und des Präsentationsmodells für ein neues großes Wörterbuch in diesem Bereich zu schaffen. Einzelne Termini, die wir in verschiedenen lexikographischen Werken finden, sind mangelhaft und weisen nach der lexikographischen Theorie eine Reihe von Nachteilen auf (so fehlen jegliche Angaben zum Korpus der Termini, die Definitionen sind mit einigen linguistischen und logischen Fehlern formuliert).

2.2. Das zweite Problem ist **Anforderung der Nutzer**. Nach den Überlegungen zur Notwendigkeit und zum Zweck eines Wörterbuches sind die Anforderungen der Nutzer beim Entwurf eines neuen Glossars für einen Lexikographen von immanenter Bedeutung. Die Frage nach der Notwendigkeit eines neuen systematisierenden Wörterbuches zieht die Frage nach dem beabsichtigten potenziellen Anwenderkreis des Wörterbuchs nach sich und demzufolge die Frage, welcher Wörterbuch-Typ für diese Nutzer geeignet wäre. Als potenzielle Anwender für

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das neue elektronische Glossar „Ökoaudit" kommen sowohl Fachleute wie Umweltgutachter, als auch Studenten ökologischer und ökonomischer Fakultäten in Betracht.

Eine weitere Nutzergruppe wären Linguisten oder Dolmetscher, die auf dem ökologischen Fachgebiet tätig sind. Das Wörterbuch soll diesem Anwenderkreis bei der Kontrolle, Differenzierung und Vertiefung von gebräuchlichen Termini sowie bei der Erweiterung ihres fachlichen Wortschatzes helfen. Aus dieser Sicht wurden typologische lexikographische Parameter festgelegt. Das ausgearbeitete Glossar ist ein systematisierendes, normatives, fachliches, enzyklopädisches, elektronisches Übersetzungswörterbuch.

2.3. Wenn wir zum dritten Problem **Auswahl der Lemmata** näher kommen, sollen wir zwei Aspekte angreifen:

a) Wörterbuchbasis

Bei der Erstellung eines Wörterbuchs stellt sich die Frage nach der Quelle der ausgesuchten Stichwörter, die in der Makrostruktur des Glossars erscheinen. Die Aufnahme der Lemmata sollte auf einer empirisch überprüfbaren Materialbasis aufbauen. Mit der rasanten gesellschaftlichen und technischen Entwicklung wird es immer schwieriger, Wörterbücher auf dem aktuellen Stand zu halten. Als schriftliche Quellen für Termini wurden einerseits Standards und andere gesetzliche Dokumente (Zeitperiode 1998-2013), andererseits fachliche Texte aus Zeitungen und Zeitschriften sowie dem Internet ausgewertet.

b) Methoden

Bei einem Wörterbuch muss die Lemmaselektion dem Wörterbuchtyp entsprechen. Für die Auswahl der Lemmata habe ich folgendes Verfahren gewählt: Im ersten Schritt ermittelte ich die Anzahl jedes Fachwortes in jedem einzelnen Dokument und seine Verbreitung in allen einbezogenen Dokumenten. Insgesamt sind diese zwei Parameter für den Koeffizient der statistischen Häufigkeit maßgeblich:

$$K_{YCT}^{i} = \frac{f_i \times m_i}{F \times n},$$

wo $\quad$ K_{YCT}^{i} - Koeffizient der statistischen Häufigkeit

$\quad\quad$ f_i - Quantität eines Fachwortes

$\quad\quad$ m_i - Verbreitung in allen einbezogenen Dokumenten;

$\quad\quad$ F - Anzahl eines Fachwortes in jedem einzelnen Dokument;

$\quad\quad$ n - gesamte Zahl der Dokumente.

Die Fachwörter, die den Grenz-Koeffizient mehr als 0,000005 haben, sind nach diesem formellen Kriterium zur Umweltaudit-Terminologie gezählt.

Die Differenzierung von Information und Wissen kann nicht Fachdisziplinen übergreifend beantwortet werden. Der Kontext entscheidet bei solch breit genutzten Querschnitts-Termini über die Definition.

Als Basis für Terminologie-Modellierung wurden die Kategorien von Aristotle genommen (*Subjekt*, *Objekt*, *Prozess*, *Charakteristik*, *Struktur*, *Substanz*, *Methode*), damit das ganze Modell nicht zu komplex und unübersichtlich aussieht.

Bei der Modellierung kann man 3-, 4- und 5-stufige Hierarchien fixieren, z.B. das Fachwort *freiwilliges Audit* gehört zum Hyperonym *Auditform*, was auch weiter der Kategorie Charakteristik gehört.

Das gleiche geht die weitere Beispiele an:

$\quad\quad\circ\quad$ 3-stufige Hierarchie:
$\quad\quad\quad$ Charakteristik

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Auditform

freiwilliges Audit

○ 4-stufige Hierarchie:

Subjekt

Person

Stake-holder

soziologischer Stake-holder

○ 5-stufige Hierarchie:

Objekt

Dokument

Auditbericht

positiver Auditbericht

saubere positive Stellungnahm

Im Wörterbuch präsentiert sich dem Benutzer das ganze Modell zunächst in übersichtlicher Form, wobei dessen Elemente in ihrer hierarchischen Einbettung dargestellt werden. Alle weiteren Informationen werden über Mausklick auf das erwünschte Element aufgerufen.

Hier auf dem Bild kann man 4-stufiges hierarchisches Modell beobachten. Zur Kategorie Subjekt gehören 3 Hyperonyme – Person, Seite und Unternehmen. Wenn wir Position Person näher betrachten, können wir weitere Hyponyme ausgliedern: Auditor, Stakeholder, technischer Expert, Kunde u.s.w. Die nächste Stufe von der hierarchischen Modellierung stellt die Arten des Auditors vor.
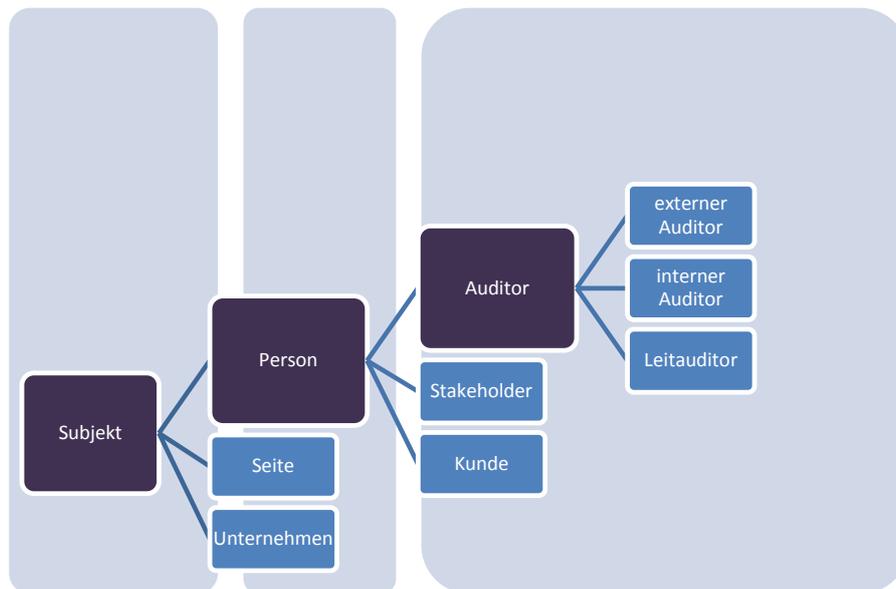
Abbildung 1: 4-stufiges hierarchisches Modell "Subjekt"

Auf einer übergeordneten Ebene befinden sich Hyperonyme (generische Begriffe). Eine untergeordnete Ebene beinhaltet Hyponyme und Kohyponyme.

Es soll darauf hingewiesen werden, dass dieses kategoriale Modell eine stark vereinfachte und bei weitem nicht die einzige Variante der Systematisierung der interdisziplinären Forschungsbereiche ist.

2.4. Das vierte Problem bei der Wörterbucherarbeitung ist **Aufbau der Wörterbuch-Makrostruktur**.

Makrostruktur bedeutet eine systematisch geordnete Menge von Wörterbucheinträgen / Lemmata,

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die nach verschiedenen Prinzipien geordnet werden können: alphabetisch (glattalphabetisch, nischenalphabetisch, nestalphabetisch) und konzeptuell.

Damit der Benutzer ein Lemma schnell und ohne Mühe finden kann, sind die Stichwörter im Glossar sowohl alphabetisch als auch thematisch (konzeptuell) geordnet. Die alphabetische Anordnung gewährleistet eine hilfreiche Zuordnung.
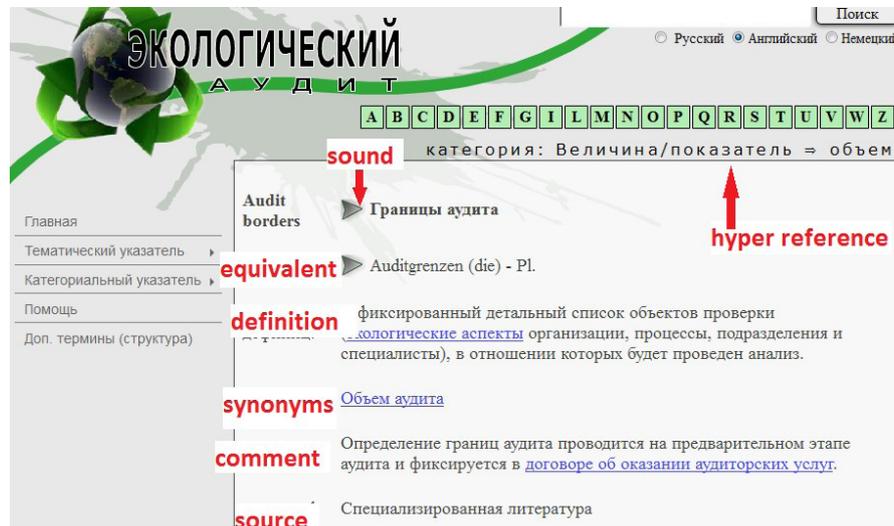
Abbildung 2: Layout des Wörterbuchs

2.5. Zum fünften Problem der Wörterbuchmodellierung gehört **Aufbau der Wörterbuch-Mikrostruktur**. Als Mikrostruktur - Beispiel kann ich folgenden Wörterbuchartikel anführen: 7 Zonen bilden den allgemeinen Inhalt und Aufbau eines Wörterbuchartikels. In den Wörterbuchartikeln des Glossars „Ökoaudit" findet der Nutzer folgende lexikographische Daten:

1. Terminus.
2. Begriffskategorie (z. B.: Prozess, Art, Objekt, Subjekt des Audits).
3. Äquivalentangaben (deutsch und englisch). Das Lemma stellt zusammen mit den Übersetzungsäquivalenten und dazugehörigen Angaben den unverzichtbaren Teil eines Wörterbuchartikels in meinem Glossar dar.
4. Definition (Bedeutungserklärung).
5. Synonyme.
6. Abkürzungen und Konventionen bei der Schreibweise/ bei dem Ausdruck.
7. Anmerkungen.

Die grafische Ausstattung des Glossars – insbesondere das Layout – kann den Kundennutzen noch verstärken und so einen Wettbewerbsvorteil darstellen.

3. Schlussbemerkung

Dieses systematisierende elektronische Glossar soll eine Grundlage für die Entwicklung eines umfangreicheren, vollständigen Wörterbuchs zum Thema „Ökoaudit" sein.

Das Terminologie-Modell kann sinnvoll in den Gesamtverband lexikographischer Daten eines Wörterbuches integriert und didaktisch nutzbar gemacht werden. Aufgrund der Komplexität und der Interdisziplinarität eignet sich das elektronische Medium für eine derartig gestaltete Beschreibung der konzeptuellen Struktur. Besonderes Augenmerk soll aber auch auf das Menschmedium gelegt werden, das sich in diesem Zusammenhang vor allem als Produzent und Rezipient klassifizieren und untersuchen lässt.

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IT engineering specialized language manifestations

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Abstract. The paper deals with experimental observations regarding the IT engineering language. It is concerned with applied linguistics; the method used to analyze this vocabulary is anthropolinguistic. The IT engineering specific language, the creation of our epoch is characterized by the index of something new, new discoveries, new science, new technologies; it can be called the revolutionary creation of its time as it's ready to realize the most innovative ideas.

The IT engineering language represents a large field to be divided into many spheres. The very experiment research involves Legal, Artificial Intelligence, Hardware systems, and Mobile devices specialized languages.

The IT English specialized language unification is defined by its concrete application sphere development, it's evolution level for a fixed time period, and besides by its application sphere pragmatics. Because of the constant science knowledge increase the systematic IT vocabulary filling up is observed. The specialized language vocabulary enriching is realized by specialized and common units as well.

Keywords. Free word combinations, history semantics, information technology, specialized engineering languages, term blocks.

The English engineering specialized language of information technology enrolls a great amount of specialized small languages. Such as environment, hardware systems, IT management, personal electronics, telecommunication, cloud computing, claims processing, collaboration software, data loss prevention, enterprise software, mobile and wireless, on-demand software, operating systems, personal tech, unified communication, virtualization windows, data deduplication, legal etc.

The process of penetrating into each other at the concrete period of the society evolution is quite inevitable as any specialized lexeme can the same time pass over to get the status of a common vocabulary unit, and a common vocabulary unit is capable to get the specificity load under the action of the corresponding conditions, and comes over into the specialized vocabulary stratum. So a free word combination Black Berry, being a part of the common vocabulary changed its status, and turned to be a very powerful specialized one, as a metonymy transfer is being fixed here to concern the berry name. Now the traditional berry name is transferred into a very powerful supercomputer, a superplatform according to the transitions type a color – super power. So here a very powerful figurative meaning reviving is manifested.

The ancient Germanic lexeme to throw in the fragment it is high time to throw that industry doesn't now coincide with its everyday life history semantics such as to propel through space, to release something in its specialized environments; the lexeme gets its new powerful semantics loading because of the lexeme industry which follows the lexeme to throw. It is just the lexeme industry to have helped the lexeme to throw to have lost its history meaning coming over to a new one, a figurative one to be interpreted like to win over, to destroy, to take away, and up to a metonymical one to kill, to smash.

A metonymical transfer to be observed in the fragment an Achilles heel disembodied program is concerned with the verb disembody to be interpreted like separate, free from body or the concrete form, disband but in the very case the transfer to the lexeme program is being observed,

the notion of which corresponds to the series of events, definite plan of intended proceedings, or coded instructions etc. Such a metonymical transfer is enforced by the obligatory action on behalf of the lexeme program to underline some unusual case dictated by the given situation which demanded a very emotional lexeme to be used; that is why they chose the verbal disembodied over the analogy with an Achilles heel which was already hurt according to the antique myth. So the meaning transfer from the part of a human body is realized into a mental concept through a series of events to correspond to the very lexeme program. That is a bright example of a lexeme metaphor.

A free word combination brute force logic is a very powerful one. The choice of the lexeme brute is really remarkable; it doesn't coincide with the lexeme logic, it's just opposite it; the lexeme brute, stupid, beastlike, cruel or unconscious, merely material – brute force, matter can also be interpreted like Brute person or a beast, disliked person; a legendary history person because of his brutality. And so in this case the metonymy transfer is registered over the lexeme logic to conceal its basic meaning and double the negative charge of the lexeme brute to realize the effect of the negation.

Many component IT specialized word combinations display a private name element included. So eponyms are widely used in such word combinations. Their usage helps define the indicated phenomenon or product to correspond to some manufacturing company, to highlight its belongings, its origin. The availability of the private name element which helps recognize the main accent in the very word combination, and that transfers the center of information to the accessory lexeme immediately: an HD laptop screen, Android devices, Android operating system, Android products, Apple and Google's data centers, Apple's late chief executive electronics giant, Apple's MacBook Pro. The list is not complete without the following word combinations to support the above idea: research project Galaxy phones, Samsung's biggest customer, Samsung's Galaxy tablets, Tesla chief technology officer, the Cupertino-based company, the Princeton Plasma Physics Laboratory, the South Korean giant, Titan's computational might, Titan's computing cares, Titan's peak supercomputing performance, Turing test, United States Customs and Border Protection.

The Android lexeme concretizer used here points out the type of the products, systems in the above word combinations. The first component Android says about high quality products, and modern design.

The South Korean giant is the manufacturer of Galaxy phones research products, Samsung's Galaxy tablets speak for themselves. It means that such products are the top high-tech products.

The eponym Titan now is concerned with the superpower giant computer of the future, and that's why the first component of the following free word combinations doesn't need any extra explanations what is what. The eponym Tesla adds the special coloring to all the word combinations. The top quality of the products manufactured by Tesla is evident too.

The geography element in many component word combinations concretizes the country, the definite company or laboratories to be dealt with: United States customs and border protection, the Princeton Plasma Physics Laboratory, China's Tianhe – 1A machine, Oak Ridge computing facility. Such many component word combinations carry the powerful emotions represented by eponyms, which are usually first components and this fact has got the double striking effect to concern the concrete information spread over the whole word combination.

Many component word combinations represent some elements to denote technology and power. The analyzed word combinations are divided into the following groups depending upon the problems they are dealing with. First comes the group of technology and power component included: a less powerful supercomputer, high performance computer record, video game technology, super-computing power, the computer's 10.000 whirring processors, the permanent hearing damage, the world most powerful supercomputer. Every component in such word combinations occupy an important functional position to be responsible for. The word

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combination a less powerful supercomputer counts three components and not a single one is out of function. Each element adds some new shades of meaning but they are not characteristics of top quality. The word combination the world most powerful supercomputer represents top quality super modern machines notions.

The word combination the computer's 10.000 whirring processors corresponds to its concrete power characteristics, that's why the availability of four nuclear components organizes a very remarkable unit, a term block to pass the exact and deep information. The word combination video game technology registers a very laconic but convincing information; two components video and game define the sphere of this type technology very precisely. Technology and power elements are the main features the above word combinations to be dealt with. The choice of the concretizers is done exactly, no spare component is presented here. These term blocs are very accurate, the lexemes chosen are not neutral.

The next group of many component word combinations includes lexemes to denote the notions of programs, projects, units, processors: a densely interconnected database, brute force logic, concealed artificial intelligence programs, distributed computing project, exclusive behind scenes look, expensive highly customized microprocessors, graphics processing units, high performance computing expert, human-like intelligence etc. Most of them are three-or-four components word combinations. There are several ed-components like interconnected, concealed, distributed, customized, and correspondingly ing-components are also available like computing. These word combinations like real term blocs are very exact and the components chosen are precise, they are of bright coloring to deliver the exact information: concealed artificial intelligence programs, ultra-high resolution display, expensive highly customized microprocessors etc.

The lexeme intelligence is used like a nuclear noun and a concretizer lexeme to the word programs. This lexeme is under opposite surroundings; very bright concretizers used with it are quite opposite to artificial intelligence and human - like intelligence; antonyms are presented here to show the polar features characteristics of the noun intelligence to manifest the fact concerning the dream of human – like intelligence to be realized in the closest future. The IT specialized engineering language is not adequate to interpret all the inner thinking processes to be observed directly. That is why this leads to the idea to study common English and common thinking like the primary specialized English model to provide the communication between the specialists. That is the reason for IT engineering English to use the Germanic irregular verbs so widely to be inserted into the soil of this highly professional language. It is because common knowledge and science knowledge are interconnected here and enriching each other.

The common knowledge is ahead of the science word picture raising. That is the bright proof to use the old Germanic verbs so widely to interpret the necessary information. This engineering specialized English doesn't reject the use of metaphors to be embodied in the IT innovative knowledge because the metaphor nature recurs the general language evolution regularity to use already known linguistic signs in the process of the human knowledge fixation to be represented in word combinations: Jaguar's brain surgery, brute-force logic, silicon brain enterprise data, hybrid architecture, human skin and blood flow data modeling. This permits to represent the IT engineering specialized vocabulary like the nucleus of the specialized engineering languages. And now it is quite evident to observe the ways how the specialized language is being provided by notions the meaning of which is used in the science description to some extent.

Sure, common English should be considered like the basis to interpret the science concepts. History syncretical earliest words meanings permanently undergo the process of concretizing and verifying owing to new lexemes coming up and that results in the meaning redistribution. The common words borrowing into the specialized vocabulary is accompanied by the process of the meaning redistribution. So during the human consciousness evolution the process of permanent meanings verifying to concern the lexemes used is being occurred in such a way that the phenomenon of syncretism is being removed. The known fact is that the common vocabulary is being changed very slowly. This vocabulary keeps even the most ancient words and we realize

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we know these words and understand their meanings, but it's another modern meaning.

During the human consciousness evolution two separate processes are observed indeed: the first is concerned with the specialized vocabulary separation from the common one, and the other one deals with the specialized vocabulary to join the common vocabulary. The fact is the specialized vocabulary developing paves the way to create the necessary condition for science, industry and culture progress. The IT specialized vocabulary, specialized lexemes of specialized domains, which can undergo the process of conscious regulating and systematizing is one of the features of our culture society which is the result of the civilization evolution process.

The IT vocabulary is filled with science verbs of Latin and Greek origin like verbs complain, manage, file, contest, limit, ignore, deny, include, damage, pertain, calculate; nouns order, district, paper, evidence, document, cell-phones, declarations, television, chief, calculator, data, section, technicians, questions, ban, device, professionals, number, feature, judgment, amount, exhibit, manufacturer, calendar, product, determination, contractor, photo, version etc.; and adjectives total, technical, international, attractive, loyal, corporate, military, certain, tricky, popular, vulnerable, special, personal. Latin and Roman words are quite necessary here to highlight the idea of the most super devices, the world's most energy-sufficient super computers, and the world largest privately owned super computers to concern the first genome project etc. Yes, it's quite evident that the IT engineering vocabulary widely uses historically learned lexemes.

But the Germanic irregular verbs cover all the problems to regard the attitude of scientists, customers, workers to this innovation sphere of engineering. These Germanic verbs are used everywhere to pass the IT exact information. The IT vocabulary adds some new interpretation to the meaning of these known verbs; their usage in the sphere of IT helps make the IT specialized information more simple to understand it because of some special domestic coloring the Germanic verbs possess. These verbs semantics covers the whole spectrum of the notions demanded by the human life. So, to be and to have are the necessary elements of any vocabulary; the usage of others is not so frequent but they help pass the specialized information not like standard Latin verbs but in another not so bookish but the same time specialized way to understand it.

The IT engineering language observation analysis shows a very important role of the common English vocabulary to verbalize the science knowledge to refer to some concrete domain.

Conclusions

The IT engineering language vocabulary represents a large field to be divided into many small specialized languages. This experiment research envolves Legal, Artificial Intelligence, Hardware Systems, Mobile Devices and IT Management vocabularies.

Analyses of the IT English specialized language showed that this experimental language is among the new American languages of the second half of XX century. A set of the languages to represent the IT specialized language is enormous but the analyzed five IT languages manifest a unique specialized language, the language which vocabulary is being systematically filled up with the lexemes to correspond to the science progress in the concrete sphere to organize the analyzed five concrete languages. The availability of many component word combinations studied like term blocs says about the corresponding progress knowledge vocabulary units to suit the modern state and the perspectives of the problems the IT sphere solves.

The laconic, convincing, clear and precise set of lexemes to organize the modern high-tech architecture of these word combinations is being registered. The language can't be called purely scientific as the progress is also created by programmers, technicians, managers but not only by scientists. That is why it is not the repetition of the Latin science vocabulary and its formula. The old Germanic verbs element has seemed to be quite suitable for the moment to color the monotonous Latin units by everyday English ones to use the rich spectrum of these old lexemes to introduce the element of real life which is in need here to show the competition and the real fight in between the modern computers giants, programmers to compete to be the first.

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So the old Germanic irregular verbs element made good to enrich the Latin vocabulary to reflect all the shades of feelings to be observed in the new IT specialized language and to be able to pump in such units like eponyms, geography term blocs as well as programs, projects, technology and power term blocs saturated with the corresponding high-tech vocabulary lexemes to be observed as unique IT specialized English language formations. The availability of a big number of Germanic irregular verbs to express and solve the IT problems compared with other new engineering specialized languages where Latin and Greek lexemes are dominating is a striking moment. The set of irregular verbs is very rich. It is not felt they are ancient, and the IT language chose them as they interpret the IT problems due to the time. Under the process of human consciousness evolution the verbs meaning also changed that's why they are quite suitable to join the paradigm of the advanced specialized IT vocabulary. These units are considered to be specialized units within the borderlines of the IT domain.

So the IT engineering specialized language manifestation is also the availability of many component specialized word combinations characterized by special features and organized into the nominative blocs to press the given information to interpret it immediately to solve the current IT problems.

So the IT English engineering language is our time formation over its organization. The problems corresponding to the notions expressed by specialized lexemes are rather various. They are the problems of high-tech equipment, modern designs, data centers, and high quality products.

The IT English vocabulary involves lexemes specialized and of common English which are quite necessary to accent the specialized ones to get the load of specificity to be closer to each other in one and the same domain space. The task of IT specialized language is to realize the problem to pass the specialized knowledge to concern one of the great problems of our time, the problem of information technology regarding, f. ex., new smart super products.

That is why its vocabulary language should feel and reflect all the innovations to have been discovered in due time and manifested by the usage of the lexemes chosen to correspond to our time openings. The IT vocabulary is keeping such lexemes to pass the coming information knowledge to react to the world engineering progress to increase its volume. The formatting of the IT language is also very specific.

Term blocs are widely represented in this specialized vocabulary as they are very economic to save the space but to give the full and deep information quite enough to understand the problem, because every component of its term bloc is functionally necessary to point out all the details of the passing information. A set of the bloc components is usually unique, the choice of lexemes is done correctly. Such a vocabulary is demanded by our society.

Separate components of such term blocs denote all the necessary technology elements to be necessary to correspond to our time demand: the elements of power, technology designing, super devices, super operating systems and products, the elements to be asked by high technology progress. The word order inside these term blocs is a specific one. The first component usually dictates the direction of the whole term bloc.

If a term bloc is represented like a many component word combination, it means this word combination is considered to be a many component noun; the noun itself usually occupies the final position but the first component to be regarded as the main component among the other attributive lexemes and the accent should be given to it because the very lexeme was chosen to stress different indications such as the name of the manufacturing company, of the computing super giants, or geography place the phenomenon belongs to etc. Such a compact information usually is very convincing and it doesn't demand any additional interpreting.

These characteristics is quite positive under the conditions of the time saving. Such constructions are highly demanded by our time deficit. Every other attributive component discovers and concretizes the phenomena or processes they are chosen to realize this function. Every component inside a term bloc carries its own predicted and functional load. The lexical power of the term

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bloc doesn't depend upon the number of its components, let them be three or four each of them has got its programmed lexical and linguistic function and the load inside the very bloc. Such is the unique architecture of the IT blocs.

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A special language as a collection of registers: A methodological proposal

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Abstract. This paper aims to propose a methodological approach to studying lexico-grammatical variation within special languages. Drawing on evidence from football language, the author argues that a special language has a two-level structure, i.e. it is composed of several subdomains (areas of communicative activity), within which it is possible to distinguish registers (varieties linked with particular situations of use), which are marked by distinctive features of grammar and vocabulary. The register perspective is viewed as a useful tool for accounting for patterns of variation.

Keywords. Football language, lexico-grammatical features, register, special language, sports language, variation.

1. Introduction

Special language (SL)[1] studies have long ceased to be associated solely with purely terminological aspects. The view that it is more appropriate to speak of special terminologies rather than languages (cf. Pieńkos 1993: 262 for more details) was rejected by most analysts already in the 1970s. As Hoffmann (1979: 13-14) puts it, "[w]hat must be criticized […] is the identification of LSP and terminology, i.e., the reduction of LSP to the lexical level […]. The isolation of words results in an obvious neglect of syntactic and textlinguistic features that cannot be missed in a complex analysis of LSP". Grucza (2004: 13, 28) argues strongly in favor of isolating terminology from the linguistics of specialist languages as he views the two areas as separate fields of inquiry. In his historical overview of German SL studies, he attributes the development of new research perspectives to the influence of text linguistics in the 1970s and 1980s. SL research has come to embrace a number of linguistic levels, such as: morphology, syntax, lexis, style, semantics, pragmatics, discourse, and genre (cf. Sager et al. 1980; Basturkman and Elder 2004; Grucza 2004; Ufot 2013).

While some researchers (e.g. Sager et al. 1980) restrict the use of SL to communication among experts in a particular field, others (e.g. Picht and Draskau 1985; Roelcke 2005) argue that special language can occur in a broader range of communicative settings[2]. Since it is the latter approach that will be applied in this paper, the following definition of special language will be used as a basis for further analysis.

> LSP is a formalized and codified variety of language, used for special purposes and in a legitimate context – that is to say, with the function of communicating information of a specialized nature at any level – at the highest level of complexity, between initiated experts, and, at lower levels of complexity, with the aim of informing or initiating other interested parties in the most economic, precise and unambiguous terms possible. (Picht and Draskau 1985: 3)

It follows then that special languages are marked by internal variation, which means that within most of them it is possible to identify several subvarieties that differ among each other in the degree of complexity or abstraction[3]. Needless to say, these subvarieties of special languages exhibit quantitative linguistic differences (naturally, SL subtypes do not have their own grammars but they often show preferences for specific grammatical structures). However, the scope of

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internal variation within SLs seems to have been neglected in research to date.

The present contribution aims to offer a solution to this problem by proposing a three-stage framework for analyzing linguistic differences within a particular special language. Drawing on evidence from the investigation of the language of football, I argue that an SL is composed of several subdomains within which it is possible to identify registers that are marked by sets of lexico-grammatical features. It is hoped that this approach can be utilized in future studies of other domain-specific languages.

2. Register approach

Prior to outlining the framework, it seems vital to provide a very brief overview of register theory. The concept of register was introduced into linguistic discourse by M.A.K. Halliday, who made a distinction between *dialect* and *register*, calling the former "a variety according to the user" and the latter "a variety according to the use" (Halliday 1978: 35). As he puts it, "a register is a variety defined by reference to the social context – it is a function of what you are doing at the time" (Halliday 1978: 157). Halliday also argues that a particular register is determined by three controlling variables: field (the subject matter and the activity of the speaker(s) and participants), tenor (the relationship between the participants) and mode (the channel of communication: spoken or written).

Hence, register is a variety of language which is used in a particular communicative setting. It is "a conventional way of using language that is appropriate in a specific context, which may be identified as situational (e.g. in church), occupational (e.g. among lawyers) or topical (e.g. talking about language)" (Yule 2007: 210-211). Wales (2001: 337) defines register in terms of communicative competence: it is natural for every speaker to alter their language (relative to the type of activity in which they are engaged) by selecting linguistic features (of phonology, grammar, lexis, etc.) that serve specific communicative purposes.

Space restrictions prevent a more detailed overview of the concept of register[4]. However, for the purposes of this paper, it seems necessary to discuss a recent framework for register analysis proposed by Biber and Conrad (2009), who contrast register with the related concepts of genre and style.

Central to Biber and Conrad's framework is the generally shared view that lexico-grammatical features of registers are situationally determined and functionally motivated. In other words, their approach foregrounds the impact of extralinguistic factors on language choices. Register analysis is composed of the following three stages:

> (1) describing the situational characteristics of the register; (2) analyzing the typical linguistic characteristics of the register; and (3) identifying the functional forces that help to explain why those linguistic features tend to be associated with those situational characteristics. (Biber and Conrad 2009: 47)

Regarding the situational characteristics of registers, the two analysts draw on previous frameworks (e.g. Hymes 1974, Biber 1988), and propose the following set of seven variables determining language use (the list below includes only major features within each variable):

- ○ **participants** - addressor(s) and addressee(s);
- ○ **relations among participants** - interactiveness, social roles (relative status/power), personal relationship (friends/strangers), the amount of shared knowledge (specialist or non-specialist);
- ○ **channel** – speech/writing, specific medium (permanent/transient);
- ○ **production circumstances** - real time / planned / scripted / revised and edited;
- ○ **setting** – is the time and place of communication shared by participants? Is the place private or public?

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- ○ **communicative purposes** – general purposes (e.g. narrate, persuade, entertain, etc.), specific purposes, expression of stance;

- ○ **topic** – general topic domain and specific topic (Biber and Conrad 2009: 40-47).

According to Biber and Conrad, in order to select typical lexico-grammatical features for investigation (e.g. clause types, verb tenses, adverbials, modal verbs, vocabulary features, etc.), register analysts should take into account three considerations. The first aspect is the need for a comparative approach, which is central to the identification of potential register features and register markers. The former are lexical and grammatical characteristics that are pervasive (i.e. they regularly occur in various text samples in the register) and frequent (i.e. they occur more commonly in the investigated register than in other registers). Register markers, in turn, are words and phrases that are specific to the target register, and are rarely, if at all, found in other registers[5]. To identify salient register features and markers, it is necessary to compare text samples from the target register to the language from another register.

The second aspect that needs to be addressed is the need for quantitative analysis. Since not all registers have distinctive register markers, researchers need to focus on the occurrence rates of register features. "Analysis of register features requires consideration of the extent to which a linguistic structure is used". (Biber and Conrad 2009: 56).

The final consideration is the need for a representative sample of texts. The size of text corpora is dependent on the kind of linguistic features that are investigated. If researchers are interested in less frequent characteristics, then they need to compile a larger sample of texts.

The last stage of register analysis is called the functional interpretation. Once the situational and lexico-grammatical features have been identified and described, "[t]he task now is to match the two up, explaining why particular linguistic features are associated with situational characteristics. This step is interpretive; you must explain why these linguistic features are especially common in this situational context". (Biber and Conrad 2009: 64)

In the latter part of their work Biber and Conrad provide several examples of register studies drawing on the above framework. In the subsequent section it will be shown how this approach is applicable to SL research.

3. Investigating variation within a special language: evidence from football language

3.1. Football language subdomains

In Lewandowski (2013) I argue that the language of football is a special language with broad public appeal. This view is shared by other analysts (cf. Taborek 2012; Bergh and Ohlander 2012).

> It follows that football language, the original variety of which is football English, is indeed a special language, albeit somewhat unusual in that its use is not restricted to a relatively small number of specialists. On the contrary, it may well be argued that it is the most widespread special language of all as far as the number of people using it, in different parts of the world, is concerned. This also means that, despite its function as a special language, football language is arguably, more than any other, also a public language, a somewhat paradoxical state of affairs (Bergh and Ohlander 2012: 14)

Drawing on the previous typologies of sports and football language (cf. Tworek 2000; Burkhardt 2006; Taborek 2012; Bergh and Ohlander 2012) in my book on the language of football (Lewandowski 2013: 45) I identified the following subdomains of football language:

1. the language of football rules and regulations;

2. the language of the science of football;

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3.   the language of football players and coaches;

4.   the language of match officials (referees and their assistants);

5.   the language of football journalism;

6.   the language of TV football programs;

7.   the language of radio football programs;

8.   the language of online live football commentary;

9.   the language of football fans.

3.2. Football language registers

Within most of the aforementioned subdomains it is possible to single out specific registers, which are listed in Tab. 1. Space restrictions prevent a detailed discussion of these registers (cf. Lewandowski 2013 for more in-depth analysis). A very brief description of the kind of communication that takes place is provided in Column 3.

Subdomain	Register	Remarks
the language of football rules and regulations	football rules and regulations	documents issued by football governing bodies
the language of football players and coaches	on-field communication	communication during a football game among players themselves and between coaches and players
	on-field communication	used during training sessions (primarily by coaches giving instructions)
	post-match interviews	post-match interaction between media representatives and footballers/coaches
the language of match officials	on-field communication	interaction among match officials themselves and between match officials and players/coaching staff
the language of football journalism	match reports	written with the benefit of hindsight, published in newspapers or online
the language of TV football programs	live television football commentary	reporting of the unfolding action on the field of play followed by analysis and interpretation
the language of radio football programs	live radio football commentary	reporting of the unfolding action (less scope for analysis as the addressees are lacking in visual cues)
the language of online live football commentary	minute-by-minute reports (MBMs)	posted online in real time; drawing on the generic and linguistic conventions of the other media registers

Table 1: Registers of football language

All of the football language registers are marked by distinctive features of discourse, style, grammar and vocabulary (as well as generic conventions in the case of the media registers), which result from different situational characteristics. However, what all of the identified varieties share is a common terminological core (basic football terms and general sports terms). There is also a certain amount of lexico-grammatical overlap between some registers. For example,

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players and coaches giving post-match interviews use phrases and structures that are typically found in the media registers, while football commentators, some of whom are coaches or former footballers, occasionally color their speech with informal or slang terms from the registers of on-field communication and coaching.

A careful reader will notice that no registers have been found in two of the nine subdomains referred to in 3.1, i.e. the language of the science of football and the language of football fans. The former is a highly diverse field within which it is practically impossible to identify specific varieties with typical linguistic characteristics. The science of football is interdisciplinary in nature, which is why its language draws on lexical items from other domains, e.g. medicine, physics and biology. The language of football fans, in turn, seems to call for a different research perspective: namely, it can be investigated as a language of subculture (cf. Kołodziejek 2006).

3.3. Analysis of register features

Once major SL registers have been identified, the next stage is quantitative and qualitative analysis of their linguistic characteristics. In my study of football language, three media registers, i.e. football match reports, live TV football commentary and online written football commentary (MBMs) have been investigated more thoroughly in terms of their lexico-grammatical features. Tab. 2 shows only selected quantitative findings.

Linguistic feature	Match reports	Live TV commentary	MBMs
Present tense	10.8	75.0	86.0
Past tense	67.4	23.9	7.2
Time adverbials	25.3	22.3	16.2
Time clauses	13.0	2.9	7.2
Possibility modals	3.4	5.0	4.1
Necessity modals	2.7	3.3	2.9
Evaluative adjectives	8.4	10.8	9.0

Table 2: Normed rates of occurrence (per 1,000 words) for selected lexico-grammatical features of three media registers of football language

In line with Biber and Conrad's (2009) approach, linguistic features should be correlated with situational characteristics of the investigated registers. Tense usage in the three media registers of football language is strongly associated with production circumstances (since TV commentary and MBMs are produced in real time, it is present tense verb forms that predominate in these two registers) and communicative purposes (the pervasiveness of the past tense in match reports serves narrative purposes, which is a distinctive feature of news stories, while the use of the present tense in TV commentary and MBMs is supposed to get the audience involved in the ongoing action[6]). Necessity and possibility modals as well as evaluative adjectives, which are regarded as markers of attitudinal stance, are more commonly used in TV commentary than in match reports and MBMs. This implies TV commentators are more concerned with the expression of personal views than sportswriters and MBM reporters.

4. Conclusion

As has been shown in the previous section, special language internal variation can be successfully explored. The investigation process is composed of the following three major stages:

1. distinguishing SL subdomains, i.e. communicative areas that correspond to various fields of professional activity;

2. identifying registers (situationally-motivated varieties with distinctive lexico-grammatical features and markers) within these subdomains;

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3. analyzing the register features (both quantitatively and quantitatively) in a contrastive perspective to show the range of variation, and correlating them with the situational characteristics of the registers.

It seems then that register is a useful construct for analyzing intra-language variation. Under this approach, a special language can be investigated as a conglomerate of registers which share some common elements (core terminology), but also exhibit differences between each other.

The register perspective should thus aid research into the lexico-grammatical aspects of special languages[7]. This methodological proposal can be applied in studies of other SLs, especially in such domains as law, medicine, religion or business.

5. Notes

[1] I have chosen to use the term *special language* (SL) rather than *language for special/specific purposes* as the latter concept tends to be associated mainly with (foreign) language teaching.

[2] According to Möhn and Pelka (1984), there are three types of specialist communication: 1) among experts in the field (*fachinterne*), 2) among experts from various fields (*interfachliche*), and 3) between experts and lay people or non-experts (*fachexterne*).

[3] As Sager et al. (1980: 65) argue, special messages exhibit differences "in the degree of speciality of reference".

[4] For more insights into register theory, see Ghadessy (1988), Biber and Finegan (1994), Biber and Conrad (2009), and Lewandowski (2010).

[5] Examples of register features in TV football commentary include present tense verb forms, time and place adverbials and evaluative adjectives. Sample markers in the same register are such phrases as: *open the scoring*, *find the net*, and *the final whistle*.

[6] According to Williams (2002: 1237), the use of the present tense in commentary is "a means of enhancing the dramatic nature of the event".

[7] Nowak-Michalska (2012: 36-39) provides an overview of major morphological and syntactic features of Polish and Spanish legal texts, arguing that grammatical characteristics of legal languages in both countries are rarely investigated.

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Eponymous medical terms as a source of terminological variation

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Abstract. The use of eponyms in medical terminology has been more frequent than in other domains, which has in some cases resulted in the use of two or more synonyms for the same concept. This is one of the reasons why terminological variation seems particularly prevalent in medicine. This paper analyses the use of eponyms in anatomical and physiological medical terminology within the Croatian national terminological database *Struna*, and analyses the creation of terminological variants as one of the results of this use. It also classifies analyzed eponymous terms and their non-eponymous synonyms according to changes both on term- and concept-level. The analysis shows how linguistic and non-linguistic changes lead to change in the term used for this concept, as well as in its use within the relevant field of knowledge. The analysis includes both Croatian and English eponyms, since there are differences in the use of these eponyms between the two languages and their corresponding medical discourse. The research has been carried out within the Croatian Anatomical and Physiological Terminology (HRANAFINA) project, which is a part of the terminological work being performed in the Croatian national terminological database Struna.

Keywords. Eponyms, medical terminology, synonyms, terminological variation.

1. Introduction

It is generally known that medicine is a domain in which terminological variation – the existence of two or more terms for the same concept – is a particularly dominant characteristic of the field. To any layperson, the attribute of medical terminology that first stands out is the co-existence of Latin terms and their counterparts in a particular language. However, another major characteristic of medical discourse is the frequent use of eponyms, which is largely the result of numerous scientific discoveries both in medicine and other related scientific fields.

This paper focuses on the use of eponyms in anatomical and physiological medical terminology as researched within the Croatian Anatomical and Physiological Terminology (HRANAFINA) project. The project was carried out from May 2012 to October 2013 as part of the larger framework of Struna – Development of Croatian Special Field Terminology. Struna is a program initiated in 2007 to create the necessary prerequisites for the standardization of Croatian terminology across various professional domains.[1] The program is financed by the Croatian Science Foundation and is being executed by the Institute of Croatian Language and Linguistics, which was chosen to serve as its national coordinator. The key component of the program is coordination between domain experts on one side, and terminologists and language experts on the other. The anatomical and physiological terminology project involves a significant number of medical professionals, most of whom work as university professors. Therefore, their work has a particular didactic characteristic that other terminological projects within Struna perhaps lack, which is not irrelevant when the difference in usage between eponymous and non-eponymous terms is taken into account.

Due to the nature of this kind of terminology work, which is part of national terminology planning, the Struna terminological database was designed to serve primarily as a prescriptive term base. However, developments and changes in data categories in several term base versions since the creation of the first version in 2008 have significantly changed both its intended aim

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and the methodology of work and terminological description.[2] In the current term base version, various synonyms can be added along with a preferred term for each terminological entry in order to document terminological variation and the diversity of usage contexts. Eponyms are an especially interesting type of terms within medical terminology, but for a number of reasons it is not always easy to decide if an eponym should be listed as a preferred term in the term base. In order to find possible answers to this question, a possible classification of eponymous terms and patterns of their variation is also provided.

2. The classification of eponyms

Eponymization "honours a person who makes a certain contribution to our culture" (Garfield 1983: 384), and eponymy is considered to be the highest standard of acknowledgment in science. As previously pointed out, medicine has a particularly rich eponymic tradition. Some medical fields, such as rheumatology and neurology, are so fond of eponyms that even the term "eponymophilia" has been coined to describe their affinity (Matteson and Woywodt 2006), and as Garfield (1983: 386) concludes, "in no other field is their use so hotly debated".

The first and most common meaning of the word *eponym* is "a person after whom a discovery, invention, place, etc., is named or thought to be named".[3] However, a second meaning will be used in the context of this paper: "a term derived from a name of a person". Strictly speaking, eponymy in medicine refers to terms named after people, although there are also examples of geographic eponyms or toponyms: *Spanish flu, Lyme disease*. Apart from these two definitions, Dirckx (2001: 18) points out that *The American Heritage Dictionary of the English Language* lists a twisted definition after the traditional one: "a name of a drug, structure, or disease based on or derived from the name of a person", preceded by the label "medicine".

There are altogether 91 eponyms or eponymous terms in the Struna project of anatomical and physiological terminology, whether labelled as preferred terms or synonyms to preferred terms. Seventy-five of them have a Croatian equivalent. First, the extracted eponyms were classified according to different criteria concerning the namegiver (the person after whom the term is named), and both Croatian eponymous terms and their English equivalents have been taken into account.

2.1. Classification according to the namegiver

The first classification of eponyms – according to the namegiver – distinguishes those eponyms in which the namegiver is a physician or a scientist from those in which the namegiver is a patient. Only 4% of the eponyms are derived from a patient's name. It is interesting to note that these eponyms are all in the same semantic group (Tab. 1), i.e. they all designate coagulation factors (Giangrande 2003).

Clotting Factor	Synonyms
Fibrinogen	Factor I
Prothrombin	Factor II
Tissue factor	Factor III; tissue thromboplastin
Calcium	Factor IV
Factor V	Proaccelerin; labile factor; Ac-globulin (Ac-G)
Factor VII	Serum prothrombin conversion accelerator (SPCA); proconvertin; stable factor
Factor VIII	Antihemophilic factor (AHF); antihemophilic globulin (AHG); antihemophilic factor A
Factor IX	Plasma thromboplastin component (PTC); Christmas factor ; antihemophilic factor B
Factor X	Stuart factor ; Stuart-Prower factor

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Factor XI	Plasma thromboplastin antecedent (PTA); antihemophilic factor C
Factor XII	Hageman factor
Factor XIII	Fibrin-stabilizing factor
Prekallikrein	Fletcher factor
High-molecular-weight kininogen	Fitzgerald factor ; HMWK (high-molecular-weight) kininogen
Platelets	

Table 1: Terms for clotting factors in blood and their synonyms (adapted from Guyton and Hall (2006))

The second classification of eponyms is according to the gender of the namegiver. According to this analysis, 3% of the eponyms are named after a female person. In some languages, as in Croatian, gender can be a source of terminological variation, as there are different gender inflections.

The third criterion for a possible classification of eponyms was the place, or more specifically, the state of birth of the namegiver. Almost a third of the namegivers were from Germany. Another third were born in the UK or the USA, and Austria and Denmark also have a share of namegivers. As is seen in Tab. 2, six countries are represented with 2 to 4 namegivers, and 8 countries with just one namegiver to an eponym.

State	Number of namegivers
Germany	26
United Kingdom	16
United States of America	11
Italy	8
Denmark	6
Austria, France, Ireland	4
Netherlands	3
Czech Republic, Switzerland	2
Belgium, Canada, Finland, Mauritius, New Zealand, Russian Federation, Sweden, Ukraine	1

Table 2: State of birth and number of namegivers

The final classification was made according to the year of birth of the namegiver. It was performed for Croatian and English eponyms separately as there is a slight difference between the two of them: Croatian language lacks eponyms of older origin, i.e. those created before the mid-18th century.
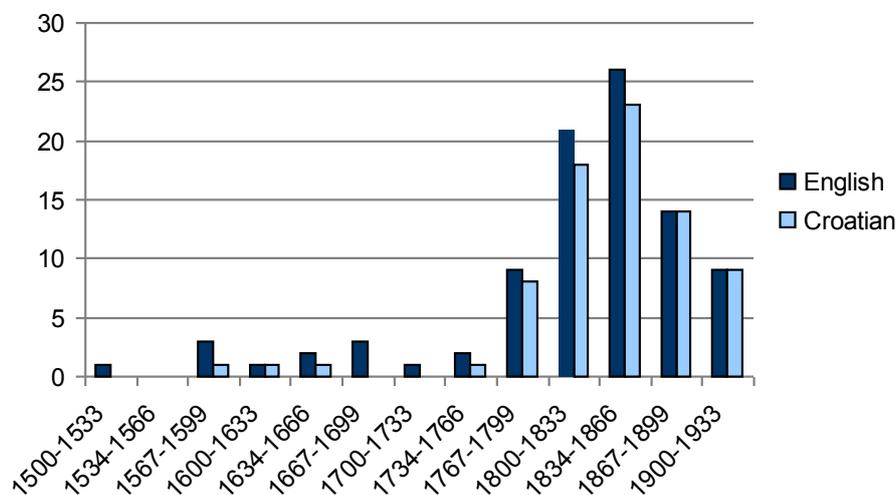
Figure 1: Year of birth and number of namegivers

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Fig. 1 shows that the majority of namegivers were born in the mid 19th century. It is interesting to note the fact that there are no living people among the analyzed namegivers: the last, Mr. Iggo, passed away in 2012.

The four classifications of eponyms according to the namegiver point to the conclusion that the vast majority of medical eponyms are coined after male German scientists born in the mid-19th century. This analysis clearly shows that the trend of eponymization has stopped.

2.2. Classification according to the nametaker

The second classification of analyzed eponyms takes into account the nametaker's role in the creation of eponyms, i.e. it refers to the concept the name was given to. There are several ways in which eponyms can be classified according to their concept level. However, for the purpose of this research, a semantic classification was opted for – one which considers the nature of the analyzed concept. Thus, eponyms in Struna can be classified into five major groups: anatomy (terms labelling various anatomical structures), diseases (terms for both diseases as a whole and for syndromes or stages of diseases), various phenomena, tests and coagulation factors. Terms belonging to the first two groups, anatomy and diseases, are the most numerous, and they are typical sources of terminological variation.[4] The following sections will explain this.

At the 1955 International Congress of Anatomy at Paris, a decision was taken suggesting that a great number of eponyms be banned from the field of anatomy (Garfield 1983: 386). It was proposed instead that more descriptive, non-eponymous terms should be introduced. The latest edition of *Terminologia Anatomica* lists only two eponyms, *cornu ammonis* and *stratum purkinjese corticis* (Rudeš and Marušić 2009). This decision created a sudden outburst in terminological variants, much as any prescriptive terminological or linguistic decision would spur the sudden creation of new terms or words. For example, the Croatian textbook *Eponimi u anatomiji* (Rudeš and Marušić 2009) lists 413 eponymous terms, but only 27 of them are listed in our term base as preferred or admitted terms. However, a certain number of eponymous terms still remain in use in anatomy, if only in less formal types of discourse.

Another decision reached at an international level contributed to the creation of variants, although its consequences have not been of the same extent as those of the decision concerning anatomical terminology. In 1974, the United States National Institutes of Health held a conference at which the naming of diseases and conditions was discussed. One of the conclusions was that "the possessive use of an eponym should be discontinued, since the author neither had nor owned the disorder" (Classification and nomenclature of malformation, 1974; Classification and nomenclature of morphological defects, 1975), which led to the creation of many syntactic eponymous variants.

Currently, the World Health Organization prefers non-eponymous terms to eponyms in processing the "International statistical classification of diseases and related health problems". It is interesting to note that eponyms such as *Gottlieb syndrome* and *Urbani syndrome* for two of the greatest medical discoveries of the late 20th century, AIDS and SARS respectively, do not exist at all (Hopper 2011). These two examples also show that eponyms are not so welcome any more as disease names in modern medical discourse.

3. English and Croatian eponym formation

According to Sager (1997: 25), term formation differs from general word formation processes in the fact that it is a conscious activity with "social responsibility for facilitating communication and the transmission of knowledge". Although this is not always valid where primary term formation is concerned, eponymous terms are formed in a conscious and well-thought manner, taking into account rules for naming inventions or scientific discoveries of known origin. Eponyms are generally formed in the same way in both English and Croatian, however there are certain differences regarding the morpho-syntactic structure of Croatian eponyms and their

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English equivalents due to the morphological rules of the two languages.

3.1. English

There are several ways to form eponyms or eponymous terms in English, and not all of them are equally common. According to Dirckx (2001), there are seven types of word formation used in creating eponyms, the most common of which is the possessive type of word formation, or the synthetic genitive construction in which an apostrophe and an s is added to the proper name. Synthetic genitives like *Parkinson's disease*, *Fröhlich's syndrome* or *Reissner's membrane* tend to be replaced nowadays with their non-synthetic counterparts, particularly where well-known conditions or diseases are concerned (*Down syndrome*, *Parkinson disease*). The uninflective type of formation or substantival adjunct is becoming more and more common instead of the synthetic genitive. The construction in which a proper noun has taken on the role of an adjective (*Goldblatt hypertension*, *Bohr effect*, *Cushing reaction*, *Hageman factor*) is the form recommended by a large group of experts due to its practicality. One of the linguistic reasons in favour of using a substantival adjunct is that it reflects the capacity of the English language to form adjectival constructions by combining two nouns.

The analytic genitive (*canal of Schlemm*, *duct of Bellini*, *interstitial cell of Leydig*) and the formal adjective (*Addisonian crisis*, *Jacksonian epilepsy*, *Wormian bones*) are less common, but still very plentiful types of eponymous term formation. The final three types of formation listed by Dirckx, the shorter form of the substantival adjunct (*a positive Babinski [sign]*), a noun (*parkinsonism*, *daltonism*) and a verb derived from a proper name (*to pasteurize*), are much rarer in use. The shorter form of the substantival adjunct, i.e. a term in which only a proper name is used instead of a full term – the full term being a construction of a proper name used in an adjectival function paired with a noun – is common in less formal discourse or everyday communication.

3.2. Croatian

Although it is true that many eponymous terms have entered Croatian use through English, their form has changed slightly due to the morphological and syntactic restrictions of the standard Croatian language. The substantival adjunct construction such as the eponym *Cushing reaction*, in which the preceding noun plays the role of a possessive pre-modifier, is not considered a standard variant in Croatian and so must be changed into a construction with a possessive adjective,[5] *Cushingova reakcija*. Other examples of such morphological transformation include: *Gartner canal* / *Gartnerov kanal*, *Graves disease* / *Gravesova bolest*, *Brown-Séquard syndrome* / *Brown-Séquardov sindrom*, etc.

Other common ways of forming eponymous terms in Croatian are the same as in English: a proper name can become an adjective expressing relationship (*adisonska kriza*), a noun (*daltonizam*, *salmonela*) or, very rarely, a verb (*pasterizirati*).

4. Types of terminological variants

Decades of practical terminology work within the theoretical framework of Wüster and, later, based on the premises of the General Theory of Terminology, have resulted in the creation of prescriptive terminological resources that ban all terminological variation. The idea that terminological variation is a phenomenon with no justified place in terminology was further supported upon the creation of multilingual terminological resources, with a view to providing translators with one-to-one solutions for every concept in a special subject field. However, a great number of recent studies have questioned this principle and support the idea of terminological variation as a source of relevant specialized information that can be beneficial to translators in creating well-structured and informative target language texts. The use of several different eponymous terms for the same concept within the same discourse, however, cannot be equally

justified, as this variation – especially where medical terminology is concerned – can cause relevant concepts to be misunderstood. Based on an analysis of eponyms within anatomical and physiological terminology in Struna, an attempt was made to classify types of eponymous variation and provide possible answers as to which variants should be the recommended forms in contemporary medical discourse.

Anatomical and physiological eponymous terms and their non-eponymous variants were extracted from Struna and classified into groups of variants according to four types of variation: variation at the orthographic level (i.e. at the term level), variation according to the number and gender of the namegiver, and variation according to the noun following the proper name, while non-eponymous synonyms were used as the fourth type of variation. The first, the second and the third types refer to changes at term level, while the fourth type can reflect changes at concept level. The classification is of a more general nature, and applies both to Croatian terms and to their equivalents in English.[6]

1. The first group of eponymous variants includes orthographic variants, i.e. term variants that differ from each other either in spelling only or at the morpho-syntactic level. The difference in variants at the morpho-syntactic level includes certain semantic changes as well, however these have not been taken into consideration as the changes at term level do not affected the understanding of the concept. Therefore, three subtypes of the first group are eponymous variants with (a) differences in spelling (*Fröhlich's/ Frohlich's syndrome*, *van/Van den Bergh reaction*) (b) morpho-syntactic variants such as English terms expressed in synthetic genitive or in analytic genitive (*Schlemm's canal / canal of Schlemm*, *interstitial cell of Leydig / Leydig cell*), and possessive adjectives in Croatian as opposed to English noun adjunct constructions (*Bohrov efekt / Bohr effect*), and (c) variants with spelling differences due to transcription from a foreign language (*Purkinje cell / Purkyněova stanica*).

2. The second type of terminological variation is manifested in variants created due to changes on the term level or on the level of the namegiver of the eponym denoting a concept. Such changes are very common, and are mostly the result of conscious decisions to amend some kind of injustice done to one of the people involved in the discovery. They include changes in the number or order of the namegivers, and even changes in the very name. A change in the number and order of namegivers is quite common, as it is often the case that more than one person contributes to the discovery of a new concept, but only one of them receives recognition in the form of an eponym, as can be seen in these terms: *Browicz-Kupffer cell / Kupffer cell* and *Stokes-Adamsov sindrom / Adams-Stokesov sindrom / Morgagni-Adams-Stokesov* sindrom in Croatian. A change in the number of namegivers can sometimes result in extreme cases of variation, as in the terms *Mayer waves / Hering's waves / Traube's waves / Traube-Hering waves / Traube-Hering-Mayer waves*.[7] An influence of the namegiver's gender is less common and is not visible in the term itself in English. However, in certain languages, such as in Croatian, the gender of the namegiver is relevant as it affects the form of possessive adjectives formed out of proper names. Thus, one cannot know from the English terms *Michaelis-Menten equation* or *Stuart-Prower factor* that the second name denotes a female scientist or a female patient (in the second example), while it is clear that in Croatian **Michaelis-Mentenova jednadžba* is not an appropriate eponym form since this term was coined after German biochemist Leonor Michaelis and Canadian female physician Maud Menten, and should thus be *Michaelis-Mentenina jednadžba*. The third subtype of terminological variation according to changes in the namegivers results in the creation of terms in which the name itself is changed. These changes are the most obvious example of correcting injustice done to a certain scientist or physician through false acknowledgement.

3. The third group of eponymous variants include changes at term level as well, but in

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this case these are changes in the noun following the proper name that do not make a difference in the meaning of the concept. The English terms *Donnan effect*, *Donnan law* and *Donnan equilibrium*, and the Croatian terms *Brown-Séquardov sindrom*, *Brown-Séquardova paraliza* and *Brown-Séquardova hemiplegija* show how the use of several synonyms can be misleading. These terms contain different nouns (*effect*, *law*, *equilibrium*), but they all refer to the same concept. The same is the case with the Croatian terms *Weber-Fechnerovo načelo*, *Weber-Fechnerov princip* and *Weber-Fechnerov zakon*, which are listed in Struna as Croatian equivalents – the first as a preferred term, and the others as admitted ones – for the English term *Weber-Fecher principle*.

The opposite, misleading conclusion can be reached when one encounters the terms *Purkinje cell* and *Purkinje fiber*, in which the noun following the proper name is also different as in the previous examples, but in which the same proper name can be misleading. Although these terms include the name of the same person, they are not only different concepts but are not even related. Džuganová (2013: 64) provides the eponyms *Addison's disease*, *Addison's anaemia* and *Addison's plane* as examples of a similar possible confusion. *Addison's disease* and *Addison's anaemia* (better known today as *pernicious anaemia*) were coined after British physician Thomas Addison, while *Addison's plane* refers to an anatomical concept named after another physician, Christopher Addison.[8]

4. The final type of terminological variation concerning eponyms results in the creation of non-eponymous synonyms for the concepts previously known under eponymous terms only. This phenomenon usually occurs for two reasons. The first is when new knowledge about a certain concept motivates the creation of a new term, as in the case of the term *Kupffer's cell*, which used to be the only term for the concept known today as the *stellate macrophage*. What was once called a syndrome or a disease can be discovered to be only a stage of a disease or a variant among a family of diseases, and this new discovery may result in the formation of a new term. Garfield (1983: 387) illustrates this point through the example of *Tay-Sachs disease*, which was originally a generic term for a syndrome of dementia and blindness in infants, but today stands for any of several forms of this genetic disorder.[9] Another cause of the creation of non-eponymous terms is a conscious impact on the terminology of a domain – the decision reached at the International Congress of Anatomy in Paris in 1955 to ban eponyms from anatomical terminology is an example of this. It was decided then that the use of all eponymous terms for anatomical concepts should cease, and that new, more descriptive terms should be coined in their stead.

5. Advantages and disadvantages of eponyms

Despite the long-lasting heated debate over the use of eponyms in medicine (Turnpenny and Smith 2003, Whitworth 2007, Woywodt and Matteson 2007), there are several advantages to their use. From the perspective of term formation, eponymization achieves a more precise concept-term relationship. It can be said that it helps to achieve the ideal of univocity, since the relationship between concept and term in eponyms is more clear-cut.

Eponyms are valuable in the reconstruction of a concept's origin, since they provide relatively precise information about when the concept was created, which is difficult to trace in non-eponymous variants. Eponyms are also usually shorter than their non-eponymous variants. Garfield (1983: 388) cites Schmickel and his praise of eponyms as neutral terms that allow concepts to "evolve, free of any preconceived notions".

On the other hand, as has often been argued, eponyms are not as transparent as their non-eponymous, more descriptive variants. It is rather obvious that, at first glance, terms like *Fallopian tube* or *duct of Santorini* are less evocative to a layperson than the terms *uterine tube*

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and *accessory pancreatic duct*. Another disadvantage of eponyms is that they can be misleading. As previously mentioned, the terms *Purkinje cell* and *Purkinje fiber* do not even stand for related concepts, let alone for the same concept. While on the other hand, *Graves' disease*, *Basedow's syndrome*, and *Basedow's disease* all refer to the same concept, although at first glance it is reasonable to assume that they denote different conditions. On the other hand, a disease can have more than one eponym.

Eponyms are often the result of false acknowledgement (many discoveries are named falsely after people because of their high social status or high visibility in the field) or reflect bias – either according to gender or nationality. There is no single solution as to whether an eponymous variant should be the preferred term in a certain terminological resource or in medical discourse. Once established, eponyms should be preserved. Although it is true that standardised terminology helps in technical matters (e.g. in spell-checking, documentation, storage and retrieval), the extent to which it "promotes communication […] and avoids confusion both in basic and clinical sciences" (Narayan et al. 2009: 3) is debatable. Through over-consistent use of standardized terminology in target texts, translators can sometimes create "consistency in places where the use of variants was deliberate and well reasoned" (Bowker and Hawkins 2006: 80). The usage of variants in a certain text is not necessarily a sign of carelessness on the part of the author. A very significant variety of medical discourse – doctor-patient communication – must not be forgotten, in which the use of a term variant that the patient is unfamiliar with, albeit descriptive and accurate, will only impede effective communication and create a larger gap between patients and the medical information they are entitled to. Thus, as in every other case in the field of terminology, the use of eponyms and their non-eponymous counterparts depends on context.

6. Notes

[1] More information can be found at struna.ihjj.hr.

[2] The fourth version of the term base, currently in use, has 46 data categories altogether. Some of them are automatically stored administrative categories.

[3] http://www.oxforddictionaries.com/definition/english/eponym, (accessed 11 October 2013).

[4] In Struna, terms denoting tests and laws mostly belong to the field of physiology, but it is also justified to say that they are generally more part of the domain of biology or chemistry.

[5] In this type of a construction the proper name is formed into an adjective that has a possessive function.

[6] Unless explicitly stated otherwise, all examples are taken from Struna.

[7] All of them can be found in online references, e.g. http://medical-dictionary.thefreedictionary.com/, http://www.medilexicon.com/ or in Wikipedia medical articles.

[8] The online reference site http://www.whonamedit.com/ (accessed 12 October 2013) lists altogether 5 terms under the head entry *Addison-Biermer disease* (*Addison's anaemia*, *Addison-Biermer anaemia*, *Biermer-Ehrlich anaemia*, *Hunter-Addison anaemia* and *Lebert's essential anaemia*), stating that *Addison-Biermer disease* is a historic term for *pernicious anaemia* or *megaloblastic anaemia*.

[9] http://en.wikipedia.org/wiki/Tay%E2%80%93Sachs_disease (accessed 13 October 2013).

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On the specifics of International Baccalaureate terminology

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Abstract. The problems of education reforms and modernization are in the focus of the present research interest. International Baccalaureate (IB) programs are actively integrating into the national educational systems that cause some terminological problems. Sometimes IB terminology is in the contradiction with the national pedagogical systems, which leads to communication misunderstanding even among the professionals. Therefore, the necessity to regulate and standardize IB terminology explains the actuality of the given research. The aim of the paper is to study terminological variation in British and Russian educational discourse applying the modelling method and to present the diversity of variation models representing the term International Baccalaureate. The existing terminological variants classifications (Averbukh K., Grinyov S., Kazarina S., Leichik V., Nenadic, G., Slozhenikina Yu., and others) have been improved and adapted to the researched terminology, and some criteria of terminological variations have been worked out. The first criterion deals with the number of the components, the second one reveals whether there are any abbreviations, ellipses or apocropies. The third criterion allows revealing whether the components belong to the same or different parts of speech, and the fourth one considers whether the components of the model belong to one or different languages. As the result, 34 variation models have been developed and similarities and differences in British and Russian educational discourse representation have been revealed. The application of modelling method to the term International Baccalaureate allowed observing the whole diversity of terminological variants and systematizing them with the perspective of developing a glossary.

Keywords. Terminological variation, educational discourse, variation models.

The contemporary anthropocentric paradigm considers the language in its interaction with the humans and their activity. The demonstration of such collaboration could be viewed even more distinctly when dynamic objects, functioning in discourse, are examined. Among such objects International Baccalaureate can be named.

International Baccalaureate (IB) has become one of the modern realities of global education process. On the one hand, it presents three educational programmes for international schools working worldwide. On the other hand, it is also terminology, which is necessary to study. What is more, IB programmes are very much discussed in the media, which leads to the development of terminological variation.

The study has been conducted in the frames of Cognitive Linguistics, which denotes concept as one of its basic notions. Cognitive Linguistics studies languages in their interaction with humans and their activity, the processes of thinking and perception, or, in other words, in cognitive-discourse aspect. One of the main theses of Cognitive Linguistics is that language is connected with the ways of how information is presented in discourse (Mishlanova S., Gureeva A., 2009).

In the given paper concept is viewed as the implication of all kinds of knowledge on the definite problem and is formed in discourse, which is, according to professors L. Alekseeva and S. Mishlanova, verbally-mediated activity in special sphere (Alekseeva, Mishlanova, 2002). The processes of conceptualisation are connected with the type of discourse, that is why every concept has its own peculiarities, which are reflected in the ways of concept representation on mental and verbal levels.

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The objective of the study is to research the peculiarities of International Baccalaureate terminology in British and Russian educational discourse using variation models.

The specific of International Baccalaureate concept depends on the integration of international school programmes into the national systems of education. International Baccalaureate programmes compete with national school programmes and are characterised by perfected principles of educational curriculum: extra educational activities; a possibility to enter a university without any entrance exams, etc.

However, all these IB features show that International Baccalaureate has specific pedagogical management, while all three IB programmes have traditional subjects as their bases. That is why one part of the concept was called "Educational", and the other – "IB". The concept specific is reflected in cognitive terminological model, which is the mental way of the concept representation. This cognitive terminological model also has the two parts – "Educational" and "IB", and correlates with terminology on the verbal level.

The concept as special knowledge is verbalized in discourse in the form of terminology, which is a whole lot of terminological units. Terminology is structured by variation models, which are a kind of general scheme of terminological units' actualization. Terminological units are a way of terminology representation and are organized into variation models. This is the bases of identifying the types of variation and revealing the peculiarities of terminology. Variation is viewed as a terminology modeling by variation models on the definite criteria.

The materials of the research are articles about the International Baccalaureate from British and Russian newspapers published from 1993 to 2009 and presenting 2366 contexts: 2000 from the British newspapers and 366 from Russian. The fact of greater number of articles about the International Baccalaureate in British discourse is caused by historical reasons. Schools in the UK started working on the programmes of the International Baccalaureate in 1978, and the first articles about the IB appeared in the British newspapers in 1971. In the Russian Federation the IB programmes were first launched in 1996, and the information about the IB appeared in the Russian press in 1993. Thus, the reasonableness of the sampling presented in the research is quite obvious and could be explained by historical factor.

To research the terminology of International Baccalaureate, a special strategy has been worked out, which includes the following stages. First, the modeling method has been used and the variation models developed. Second, the semantic-cognitive analyses have been applied to the variation models followed by their semantic-frame analysis. And finally, the whole concept International Baccalaureate has been studied by frame analysis.

On the modeling stage, the variation models have been developed according to certain criteria. The criteria have been worked out on the bases of different classifications of terminological variants, created by terminologists S. Grinyov (Grinyov S.,1993), G. Nenadic (Nenadic G., Ananiadou S., McNaught J., 2004), and others. The criteria of these classifications were modified and adapted to the researched terminology and include, firstly, if there are any abbreviations or ellipses. According to this criterion, the models are called "Abbreviation" or "Elliptical". In case there is neither of these phenomena, the model is called "Simple". The second criterion is whether the components of the model belong to one or different languages. If the model is actualized by terminological unit, which has the components expressed in English and Russian, it is called "Poly-language". In case English-language component is used in the Russian context, such models are called "Foreign language". The third criterion allows revealing whether there are any prepositions and if there are some, the model is called "Prepositional". The final forth criterion reveals the number of the components of the variation models.

Each variation model has a certain combination of the criteria, which is reflected in its nomination, for example:

The **IB learner profile** *wants pupils to be enquirers, thinkers and risk-takers* [The Guardian April 1, 2008].

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The example illustrates three component abbreviation variation model, actualized by terminological unit *IB learner profile*.

As the result of modeling stage, 34 variation models have been created. The research reveals that variation models are differently actualized in British and Russian educational discourses. The most frequently used are two-component models, then come three-and four component models, as well as one component ones in the English language. Many-component models that are the models of five and six components are the least represented. In the Russian language, one-component models are on the third place.

Moreover, abbreviation and simple models are also dominating, then come elliptical and abbreviation-elliptical models, and the least actualized are prepositional models. Foreign language and poly-language models are represented only in Russian educational discourse.

Semantic-cognitive analyses as the second stage of the research allowed revealing the contextual definitions of terminological units. The components of the definitions were correlated with the components of cognitive terminological model. The results show that in all variation models the two parts of cognitive terminological model are reflected, for example:

> The **baccalaureate** is a more difficult exam than A-level in that you have to perform well across six subjects [The Sunday Times. 2008. 13 July].

In the given example, the terminological unit **baccalaureate** is actualizing one-component elliptical variation model. The contextual definition of the terminological unit is «International Baccalaureate examination». The definition component *examination* correlates with the part of cognitive terminological model "Educational", and the component *International baccalaureate* correlates with the part "IB". Therefore, even in one-component variation models the two-part structure of cognitive terminological model is reflected. According to the research results, all variation models of International Baccalaureate terminology have these two parts.

At the next stage of the research – semantic-frame analyses and applying the cognitive model of the definition, the components of contextual definitions of terminological units were correlated with the frame slots. Frame in the given study is considered as the concept structure. Let us assume that the contextual definition of terminological unit is "International Baccalaureate examination", so using the definition model, the definition component *examination* correlates with the slot "Examination".

To sum up, the semantic-cognitive and semantic-frame analyses allowed to conclude that all variation models are characterised by their two-part structure, and to correlate them with the components of the frame, or slots.

The final research stage was dedicated to the frame analyses of the concept International baccalaureate. As the result, 4-level frame was constructed with the following basic slots – "Education", "Organisation", and "Participants". All these three basic slots are divided into the sub-slots of the second, third, and fourth levels.

Therefore, the research of specifics of International Baccalaureate terminology has led to the following results:

1. The concept is being formed in discourse, and is represented on mental and verbal levels. To study the International Baccalaureate terminology a special strategy has been worked out, including modeling method and development of variation models, semantic-cognitive and semantic-frame analyses of variation models, and frame analysis of the concept International Baccalaureate.

2. International Baccalaureate terminology consists of the whole lot of terminological units and is characterised by two-part structure. It is also viewed as a kind of concept verbal representation.

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3. The terminology specific depends on the specifics of conceptualization in educational discourse and is represented by cognitive terminological model.

4. Variation models allow structuralizing terminology and reflecting the variation of terminological units.

5. Frame is a mental representation of International Baccalaureate concept and reflects its differences in British and Russian educational discourses. Each frame slot correlates with a set of variation models and has different qualitative and quantitative characteristics.

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Linguistic ontology modeling in the domain of economics

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Abstract. The purpose of the work is to define peculiarities of representation of the key concept in modern economics discourse "technology platform" in Russian, English and French discourses. The sources of the research are articles, discussions and studies about technology platforms from the Internet sources. Methods of the research are component analysis and analysis of dictionary definitions. It has been established that the technology platform frame has three slots: government, business, and science. Total amount of terms formed 253; 86 terms and 23186 symbols in Russian sources; 92 terms and 22034 symbols in English sources; 75 terms and 20029 symbols in French sources. Due to these peculiarities in concept representation it becomes possible to define the priorities of economics development modernization.

Keywords. Cognitive linguistics, concept, discourse, frame, term.

One of the urgent issues of modern linguistics is the study of the concept as a unit of knowledge based on different methods and channels of perception of reality interpretation (Kobrina 2005: 81). Concept is one of the key notions of cognitive linguistics; it is formed in a particular type of discourse. The present study examines the concept "technology platform ", which is formed in the economics discourse. The economics discourse seems relevant to study because of the importance of the economic sphere nowadays.

First of all, it should be noted that discourse is an ambiguous notion for a number of human sciences, which are directly or indirectly examine the functioning of the language, such as linguistics, semiotics, literary criticism. In cognitive linguistics there is the following definition of discourse: "verbally mediated activity in a special sphere" (Alexeeva, Mishlanova 2002: 104). Thus, discourse is associated with the society, its state and the social role of people in it.

The economics discourse is regarded in a number of works of Russian researchers (A.N. Baranov, Yu. N. Karaulov) only as a part of the political discourse. In other works, the economics discourse is understood in a broader sense, as everything said about the economics by professionals or journalists, including texts. Also it may be regarded as any communication within economic enterprises.

The economics discourse is widely represented in the mass-media in the form of reviews, analytical articles, and in specialized publications (such as annual financial statements, economical programs of individual agencies, foundations, companies).

We can say that there is a specific mental space which forms the basis of the special economics discourse represented in the form of terms and special concepts (Mishlanova, Khrustaleva 2009: 51). Thus, we may proceed to the term as one of the ways of concept representation.

Traditionally, the term is interpreted as «a word or phrase denoting the concept of a special area of knowledge or activity. The term is included in a common lexical system of the language, but only through a specific terminological system (terminology)" (Linguistic Encyclopaedic Dictionary 2002: 508).

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The development of new technologies, activities and branches of science in the XXth century led to the growth of new terms in each terminology, and they did not always meet the requirements. It was necessary to rethink the nature of the term, which was found to be controversial.

The emergence of cognitive science encouraged the study of new terminology and terminological systems, since, according to the cognitive approach, the language began to be studied as "a means of access to all the mental processes that take place in the human mind and determine its own being and functioning in society" (Kubryakova 2004 : 9). In cognitive linguistics, the term is interpreted as "the basic unit of science, special disciplines and areas of human activity, which is designed to nominate objects and processes and at the same time serves as a means of learning about the world" (Ivina 2003:14).

One of the key concepts in modern economics discourse is technology platform. The complex structure of discourse as an institution creates a concept. In the present paper we attempt to identify the characteristics of representation of the concept "technology platform".

The last category of cognitive linguistics, which should be studied, is the concept. The formation of concepts is related to the formation of representations of the world, and the very notion of the concept emerges with the need to distinguish or and identify real-world objects.

Traditional cognitive science units (frame, script, etc.), having a more clear structure, can be used by researchers for concept modeling. Enumeration of parts that make up the content – it is the frame.

The concept of frame was introduced by Charles Fillmore. In Russian cognitive linguistics there the following definition of the frame: "The knowledge of stereotypical situations verbalized in natural language" (Kubryakova 1996:187). Thus, with the help of frames the typical situation are processed, the coherence of the text is organized, the contextual expectations are provided. Frames also give an ability to predict future events based on earlier events.

Let us proceed to the term "technology platform". The term "technology platform" was first introduced by the European Commission in 2002. Technology platform as a communication tool is aimed at the activation of efforts in the sphere of development of new technologies, new products and services, at the involvement of extra funding for research and development. According to the above-said understanding of the concept and its structuring now it is possible to build a frame "technology platform".

First of all, it is necessary to turn to the definition of technology platform in the free dictionary of terms of economics, finance and business: "Technology Platform aims to bring together government, business and science in the development and production of unique products in the framework of economics modernization". Basing on this definition, we can form the concept of "technology platform". The main components in this definition are government, science and business. Thus, we can build a frame, which is the scheme of the concept "technology platform".

To study the data there were built three frames in Russian, English and French. The data of the research are articles, discussions and studies about technology platforms from the Internet sources. Total amount of terms formed 253: 86 terms and 23186 symbols in Russian sources; 92 terms and 22034 symbols in English sources; 75 terms and 20029 symbols in French sources.

Let us regard the slot "government" in the Russian Internet sources. For a better representation of the results there is shown in brackets the frequency of usage of a particular term in a context. The most frequent were the following terms: government (20), priority (14), design (14) tools (14), implementation (10), modernization (9), programme (9), mechanism (7), finance (7).

For the data analysis, it was decided to turn to Russian leading sites dealing with articles and discussions about state issues and Russian economics. One of these sites is the "Public Chamber of the Russian Federation". The site also has its own page in the major social networks, both Russian and international ones, which confirms its popularity in the Internet. An example of the analysis is one of the quotations from a discussion about the modernization of Russian economics:

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"Our function in recent years was to convince the government, the authorities who provide funding that the implementation of these ideas is very important. We receive your applications, then the most relevant ones are selected and receive government support, you implement them" (Блог Общественной палаты [electronic resource]). In Russian: «Наша функция в последние годы состояла в том, чтобы убедить правительство, те органы, которые предоставляют финансирование, что реализация этих идей очень важна. Мы получаем ваши заявки, затем из них выбираются наиболее актуальные, получают государственную поддержку, вы их реализуете» (Блог Общественной палаты [Электронный ресурс]). The key terms in this excerpt are government, funding and government support (правительство, финансирование и государственная поддержка). In the dictionary of law terms government is defined as "the highest executive organ of the state". Thus, the term government refers to the slot state. The term financing is treated as an act of providing resources, usually in form of money. From the context it is clear that funding is discussed ideas for the state. The term state support means "government actions that are directed at providing the conditions for an enterprise to receive specific economic benefits that meet certain criteria". Thus, all terms shown in this example refer to the slot government.

The slot government includes 49 terms, which represents 57% of the total number of terms from Russian sources. The slot business is represented with the smallest number of terms in Russian sources. These are the following terms: partnership (4), production (4), organization (3), companies (3), interests (3), associations (2), marketing (1).

In the slot science the following terms are the most frequent ones: sphere (21 usages), technology (18 usages), formation, study (16 usages). As a result, the slot science represented with a larger number of terms and their frequency than the slot business, but less than the slot government. These results are represented in the following diagram.
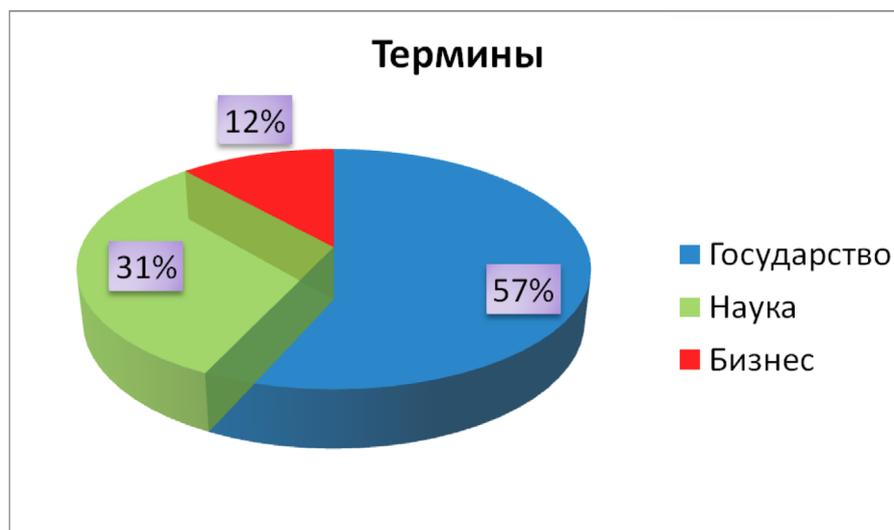
Figure 1: Concept "technology platform" in Russian discourse

Let us proceed to the English discourse. The data was chosen in the same way as for the Russian discourse. One of the sites that served as the data for this study is http://etp.fooddrinkeurope.eu – it is a site dealing with the European Technology Platform "Food for Life". In the English economics discourse the slot government is represented with the following terms: industry (14), public service (3), creation (2), economy (2), growth (2), policy (2), EU growth (1), National government representation (2), economic potential (1), job creation (1). The most frequent for usage term is industry - 14 usages. For example: "ETP Food for Life was created in 2005 under the auspices of the Confederation of the food and drink Industry of the EU (CIAA), following the principles of the Lisbon Strategy" (Welcome to ETP [electronic resource]). In other respects, the slot government is poorly represented in English sources.

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The slot business is represented with 53 terms, which make 58 % of the total number of terms in English sources. The most frequent ones are the terms stakeholder (10 usages) and sector (11 usages). Let us regard the following example: "We will discuss the ongoing challenges of a shaping a successful European Innovation Partnership for water to bring joint efforts and involvement from stakeholders towards the accomplishment of the Innovation Union". Here the key terms are joint effort, involvement and stakeholder. Stakeholder is defined as "a person, group, organization who affects or can be affected by an organization's actions" and thus refers to the slot business. The terms joint effort and involvement in this context will also refer to the slot business. The slot science is poorly represented in English sources. The most frequently used term is research, which occurs 12 times in contexts as a separate term.

The results may be represented as a diagram.
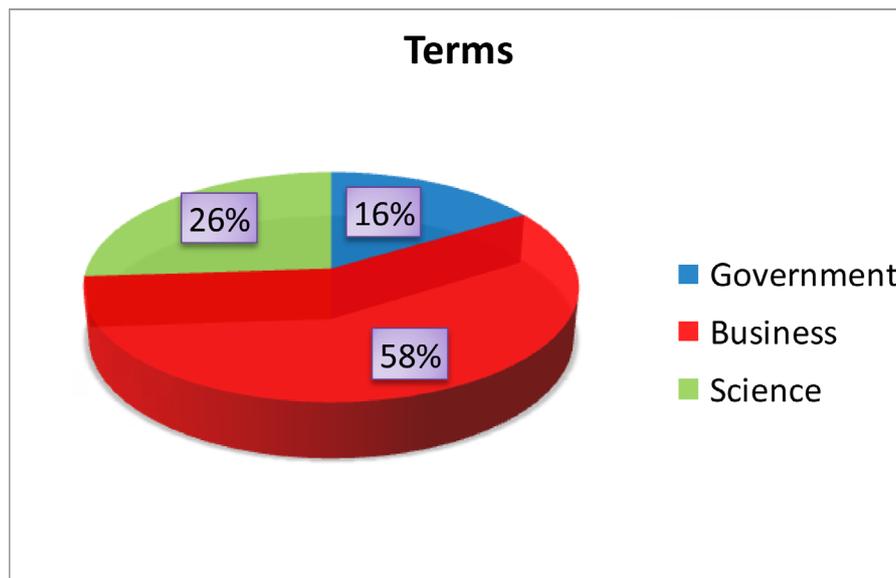
Figure 2: Concept "technology platform" in English discourse

In French sources, just as in English sources, the slot government is poorly represented, although the percentage is a little more, 29% of the total number of terms. The slot business includes 41 terms, 54% of the total. Out of the most frequently used terms there can be distinguished the term projet (project), which occurs six times. For example: «Grâce à des financements industriels, régionaux, municipaux et de l'Etat à travers l'URCA, mais aussi au dynamisme de Bernard RIERA et François Gellot (porteurs de l'idée), ce projet a pu naitre et se développer au sein du campus Moulin de la Housse» (Université de Reims [electronic resource]).

The slot science is represented with 22 terms, which make 17% of the total number of terms. The most frequently used term is recherche (research) - 16 usages in the contexts: «La plateforme technologique (PFT) de Fécamp est un centre de ressources, un lieu d'expérimentation, de démonstration pour les centres de recherche, d'assistance technique et de conseil dans le domaine des énergies renouvelables» (Plate-Forme Technologique. Energie et Efficacité Energétique [electronic resource]). Just as in the English sources, the slot science takes an intermediate position between the slot government and the slot business.

The results can be represented in the following diagram.
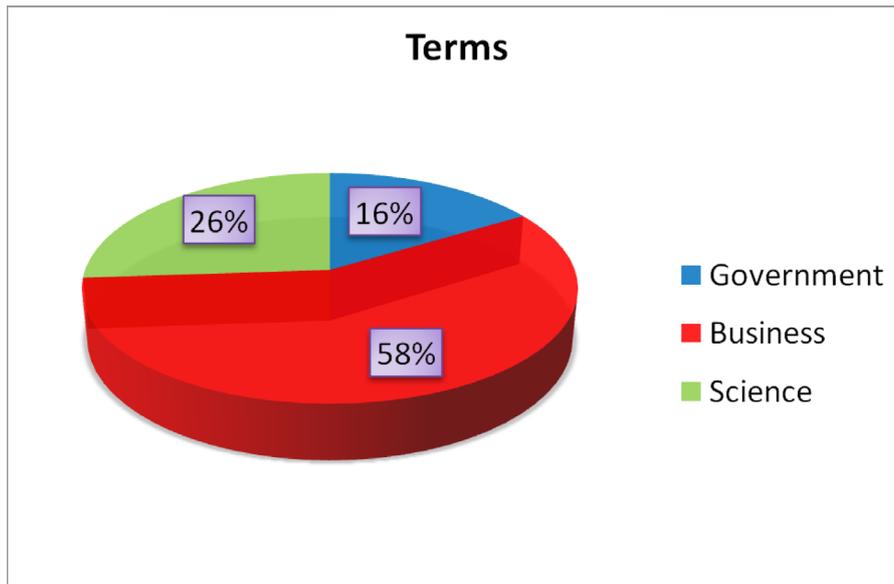
Figure 3: Concept "technology platform" in French discourse

The results can be represented as a graph, where the length of the column reflects the percentage of slots at certain resources:
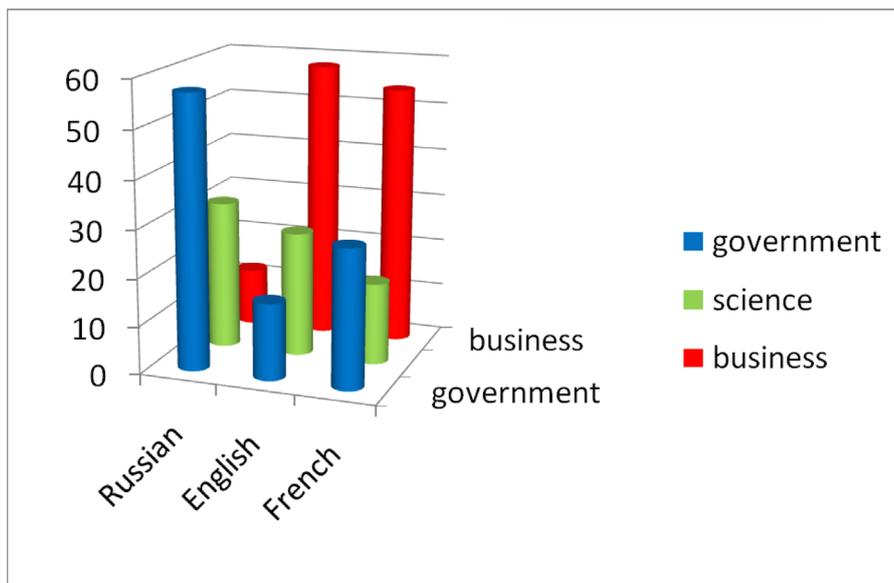
Figure 4: Representation of concept "technology platform"

According to the study it is possible to characterize each studied economics discourse. Analysis of the Russian sources showed that Russian economic relations are mostly associated with government, the English and French resources showed that in English- and French-speaking countries economic relations are related to business. Thus, this study showed that the slot government has the biggest number of terms in Russian sources (57%) and the least number in English sources (16%), the slot business has the biggest number in English sources (58%) and the least number in Russian sources (12%), the slot science has the biggest number in Russian sources (31%) and the least number in French sources (17%).

Due to the characteristics of representation of the concept "technology platform" it becomes possible to define the priorities of economics development modernization.

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Term selection methodology for the study of an underresearched subject field: The case of equestrian specialized language

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Abstract. Contemporary study of terms emphasizes the role of context in formation and use of specialized languages; accordingly, it utilizes corpora of subject field texts. The aim of this paper, however, is to demonstrate that the extralinguistic factors come in much earlier, i.e. during term selection. This stage is different for underresearched subject fields, which do not enjoy huge dictionaries, big international conferences or extensive linguistic research. Regarding those fields, it would not be beneficial to depart from a niche subfield; it is the extralinguistic context that helps the researcher to determine the relevant scope of research. My PhD thesis, which concerns equestrian language, shall discuss terms used in general horse training and the related sport discipline of dressage rather than terms of the very specific, less popular subfields of vaulting or endurance. The paper presents the delineation of scope (subfields), availability and selection of term sources, selection of terms from these sources and a preliminary grouping and description of selected terms, all these performed with a view to conducting a possibly universal research of a less common subject field, thus forming the basis for its future studies.

Keywords. Languages for special purposes, specialized languages, subject fields, terminology.

1. Introduction

The role of context in formation and use of specialized languages is now generally acknowledged. Despite respect and attention due to language planning activities, one should not be tempted to view terms as sets of labels isolated from their practical use (Temmerman 1997). Accordingly, contemporary linguistic research of specialized languages utilizes corpora of subject field texts. This will also be the procedure employed in my PhD thesis investigating the English and Polish equestrian specialized language – a domain, to my knowledge, largely neglected by linguistics thus far.

The aim of this paper, however, is to demonstrate that the extralinguistic factors come in much earlier than at the stage of corpus compilation: they play a key role in term selection. Though it concerns all subject fields, this stage is different for underresearched subject fields, which do not enjoy huge dictionaries, big international conferences or extensive linguistic research. When a given study is supposed to pave the way for, or draw more attention to, a given subject field in linguistics and Terminology, it would not be beneficial for that subject field to be represented by a niche subfield. It is the extralinguistic context that helps the researcher to determine the relevant scope of research; accordingly, my PhD thesis shall discuss terms used in general horse training and the related sport discipline of dressage rather than terms of the very specific, less popular subfields of vaulting or endurance. The paper aims to present the process of obtaining an optimal subfield by discussing the delineation of scope (section 2), availability and selection of term sources as well as selection of terms from these sources (section 3) and a preliminary grouping and description of selected terms (section 4). The conclusion provides some basic assumptions for the corpus research proper. All these stages were performed with a view to conducting a possibly universal research of a less common subject field, thus forming the basis for its future studies.

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2. Delineating the scope: selection of subfield(s)

All subject fields are divided internally and so are their specialized languages. The latter can be seen as "a superordinate construct, a conceptual cover term for varieties associated with a particular domain but employed in different settings" (Lewandowski 2013: 37). For an underresearched subject field it becomes particularly important to select the most representative subfield for specialized language analysis. This also applies to the equestrian subject field, so let us begin by examining its extralinguistic structure.

The International Equestrian Federation (FEI) is a governing body for the equestrian sport, which supervises seven disciplines of the latter: jumping, dressage, eventing, driving, endurance, vaulting and reining (the last one being the only FEI-supported Western riding discipline) (Fédération Equestre Internationale 2011-2013). The first three disciplines are Olympic sports. However, many other equestrian sports and games are practiced worldwide with a varying degree of formal supervision; their brief presentation below is based on Edwards (1996):

(1) Western riding disciplines (beside reining) – supervised by relevant organizations:

(0.1) Judged: trail, Western horsemanship, Western pleasure, Western riding;

(0.2) Rodeo: bareback bronc riding, bull riding, calf roping, cutting, saddle bronc riding, steer wrestling, team penning;

(0.3) Speed: barrel racing, pole bending.

(2) Horse racing – supervised by organizations:

(0.1) Flat horse racing;

(0.2) Steeplechase;

(0.3) Harness racing.

(3) Games – a varying degree of supervision by organizations:

(0.1) Hunting;

(0.2) Polo (brought to UK from Asia);

(0.3) Polocrosse (Australia);

(0.4) Traditional games: buskashi/kokpar (Afganistan), gymkhana (brought to UK from India), tent-pegging (India) and many other.

All these disciplines and games have their own specialized vocabulary, but are not representative for the whole equestrian subject field. They constitute specific, centuries-old directions of the man-horse relationship development and demonstrate skills that man and horse can achieve together (traditional games are additionally unsuitable for a study of English specialized vocabulary because they are practiced in non-English-speaking countries). However, the same can be stated in relation to six of the seven FEI disciplines mentioned above; the only one with a truly universal range in the equestrian world is dressage because it is in fact a formalized way of showing the training results concerning a given horse. This dependence is best visible in the Polish terms *ujeżdżanie* (the process of training a riding horse) and *ujeżdżenie* (1. the level of a horse's riding skills; 2. dressage – the sport). As regards meaning, the two terms can be viewed as imperfective and perfective respectively: dressage is a finite demonstration of a continuous training process. In the official documents, FEI defines and describes dressage in a similar manner:

ARTICLE 401 OBJECT AND GENERAL PRINCIPLES OF DRESSAGE

1. The object of Dressage is the development of the Horse into a happy Athlete through harmonious education. As a result, it makes the Horse calm, supple, loose and

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flexible, but also confident, attentive and keen, thus achieving perfect understanding with the Athlete.

These qualities are demonstrated by:

• The freedom and regularity of the paces.

• The harmony, lightness and ease of the movements.

• The lightness of the forehand and the engagement of the hindquarters, originating from a lively impulsion.

• The acceptance of the bit, with submissiveness/throughness (Durchlässigkeit) without any tension or resistance.

2. The Horse thus gives the impression of doing, of its own accord, what is required. Confident and attentive, submitting generously to the control of the Athlete, remaining absolutely straight in any movement on a straight line and bending accordingly when moving on curved lines.

3. The walk is regular, free and unconstrained. The trot is free, supple, regular and active. The canter is united, light and balanced. The hindquarters are never inactive or sluggish. The Horse responds to the slightest indication of the Athlete and thereby gives life and spirit to all the rest of its body.

4. By virtue of a lively impulsion and the suppleness of the joints, free from the paralysing effects of resistance, the Horse obeys willingly and without hesitation and responds to the various aids calmly and with precision, displaying a natural and harmonious balance both physically and mentally (*FEI dressage rules* 2013: 10).

Not every horse needs to participate in polo, carry gymnasts in vaulting or assist in catching cows, but every horse requires training compliant with principles described in the cited fragment in order to perform its respective discipline well. Article 401 summarizes the background and at the same time the result of good riding. Thus, one can expect that general horse training and dressage vocabulary will enjoy the most widespread use in the whole equestrian discourse. That vocabulary was therefore chosen as the subject of research to represent the equestrian subject field.

3. Availability and selection of term sources; selection of terms

According to the abovementioned subfield choice, the sources of terms for this research shall be publications concerning general horse training and dressage. Sources pertaining to other horse sport disciplines and other aspects of the man-horse relationship such as horse breeding were excluded because they are likely to focus on discipline-specific vocabulary. Accordingly, the following sources of English terms were found:

1. Primary source: the only English encyclopedia of dressage so far – Diggle (2005). It provides extensive definitions and clearly identifies synonyms and spelling variants.

2. Secondary source: *USDF glossary of judging terms* (2011) – an official glossary issued by the United States Dressage Federation. 2011 is the latest update (update frequency: every few years).

Such selection of term sources increases the probability of the terms being factual units established in the equestrian world. Gathering Polish terms is, unfortunately, much more problematic in this respect because Polish equestrian vocabulary is not so well codified. The Polish Equestrian Federation – PZJ or other official equestrian institutions do not issue any glossaries or guides. The only existing Polish equestrian dictionary is Baranowski (1989), characterized by several disadvantages. First, it is an old book: it was originally published in London in 1955, while 1989 is the date of Polish edition issued after the author's death in 1965. Second, it demonstrates insufficient quality and internal organization from the lexicographic point of view:

    ○   subject matter mistakes, e.g. *lewada* [levade] and *pezada* [pesade] are listed as synonyms (Baranowski 1989: 100), while they actually denote two different exercises (Diggle 2005);

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○ spelling mistakes, e.g. łopatą do wewnątrz instead of łopatką do wewnątrz [shoulder in] (Baranowski 1989: 98);

○ poor onomasiological layout: repetitions of several terms in more than one thematic section;

○ inconsistent use of number: some terms are given in singular, other – in plural;

○ inconsistent use of brackets and punctuation: for some terms they separate optional parts, for other – explanations (possibly attempts at definitions) and yet other – synonyms. Deciding on the function of brackets and punctuation and on the final form for a given term is virtually impossible for a layperson and problematic or at best irritating even for semi-experts and experts. This is visible in the following examples (Baranowski 1989: 88): zmienić nogę (w galopie) co skok jeden takt [literal translation: change the leg (in canter) every stride one beat] and zatrzymanie (w miejscu na wodzach) (w zebraniu) [literal translation: a halt (in place and with rein contact) (in collection)].

Certainly, Baranowski's work deserves respect and inclusion in the research as the first and only Polish equestrian dictionary so far. However, due to the discussed drawbacks, it could not be ascribed a status parallel to that of Diggle (2005). It was selected as a secondary source with a hypothesis that many of its terms are obsolete or are not actually fixed, established terms (compare the examples above) and thus would be scarce in or even absent from the corpus. Thus, such a term source can be expected to give an essentially synchronic research a diachronic dimension by displaying a certain evolution in vocabulary use. Therefore, the final list of Polish term sources is as follows:

1. Primary source: Radtke (2010) – a book on dressage training featuring an index of terms. It is a translation from German, but term consistency visible throughout the index and the text as well as translation quality (the publishing house is known for high-quality equestrian books) ensure sufficient reliability.

2. Secondary source: the only Polish equestrian dictionary so far – Baranowski (1989), section "Horse and Rider".

After delineating the subject field scope and indentifying relevant term sources, the last stage consists in deciding which terms from the sources shall be used in the research in order to comply with the previously established scope. As the scope herein is general horse training and dressage, the following terms appearing in the sources were not taken into account:

○ proper names of persons associated with horse training and dressage (past and contemporary trainers and riders);

○ terms relating exclusively to dressage as a competitive sport (names of organizations, rules of competitions etc.);

○ terms relating exclusively to other horse riding disciplines;

○ terms relating exclusively to other aspects of the man-horse relationship such as veterinary science and horse breeding.

Excluding the first two term types ensures lack of limitation by the formalized, institutionalized and history-dependent form of horse training, while leaving the last two provides for accurate examination of the previously established scope.

4. Characterization of selected terms

The procedure described in sections 2 and 3 yielded two sets of general horse training and dressage vocabulary: 653 English and 765 Polish terms. They subsequently underwent formal and semantic characterization in order to enable formulating preliminary expectations and assumptions before the corpus research.

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The first formal characteristic of both sets is the domination of nouns and noun phrases (76% for English and 83.3% for Polish). However, the second position is occupied by adjectives and adjective phrases (16.7%) in English and by verbs and verb phrases (11%) in Polish. Therefore, the English vocabulary seems to pay more attention to features, while the Polish one – to activities. However, Polish verb terms come only from Baranowski (1989); terms from the translated source – Radtke 2010 – are exclusively nouns and their phrases, which may point to the influence of translation on the grammatical form.

The second formal characteristic is the share of foreign terms, which include terms fulfilling at least one of the following criteria, in that order: 1) they are loans, i.e. they contain formal elements absent from the English language (e.g. **de Gogue, durchl*ä*ssigkeit**) and have not undergone naturalization (hence terms as **longe**ing or *tuszować* [a Polish verb term from French 'toucher'] are not counted herein as foreign); 2) their language of origin is explicitly mentioned in the term source definition. Given the historical background of dressage, many English terms used currently come from other languages (mainly French), but they have become so well-established that their foreign origin seems to be barely perceived nowadays (e.g. *baroque*, *fatigue*, *levade*). Applying the two criteria allowed for exclusion of such terms from the foreign term count. In short, foreign terms are nearly absent from the Polish set (2), but quite numerous in the English one (50). However, all of them come from Diggle (2005), so one may ascribe this to a more profound, encyclopedic nature of that work, whose author aimed at providing possibly exhaustive information on dressage, including its cultural and historical background. By contrast, the USDF glossary is limited to officially used terms; the institutional character (being a document) usually also presupposes the use of one, official language in order not to introduce confusion. In turn, the very small share on foreign terms in Polish may be attributed on the one hand to the fact of translation, while on the other – to the fact that Baranowski (1989) is a quadrilingual dictionary. Thus, foreign terms did not need to be included in the Polish part in order to be shown to the reader: they are provided as equivalents in the columns concerning the three remaining languages (English, French and German).

The third formal characteristic is the greater length of terms in Polish as regards both the number of words per term (2.1; English: 1.7) and the share of terms longer than one word (68.9%; English: 45.8%). This might be caused by the concise nature of English as well as by the drawbacks of terms from Baranowski (1989) described in section 3: as was mentioned there, many of those terms are lengish phrases whose fixed nature is doubtful and which are frequently difficult to separate from their explanations.

The semantic characterization was supposed to trace possible meaning regularities in term sets. The first attempt aimed at classifying the terms into the following semantic fields: AIDS, EQUIPMENT, EXERCISE, HORSE ACTION, HORSE BODY PART, HORSE FEATURE, HORSE GAIT, HORSE TYPE, RIDER ACTION, RIDER FEATURE, RIDER TYPE and (ABSTRACT) TRAINING NOTION. However, it proved impossible to divide terms unequivocally in this manner because many terms fell into several categories. Compare the following examples:

(1) *accepting the bit* – the fact that "the horse responds willingly to the action and signals of the bit" (Diggle 2005: 14). The term thus fits into AIDS, EQUIPMENT, HORSE ACTION, HORSE FEATURE and TRAINING NOTION;

(2) (*change of lead* – "[in] canter a change from leading the gait with one foreleg to leading with the other" (Diggle 2005: 50). This term fits into EXERCISE, HORSE ACTION, HORSE GAIT, HORSE BODY PART and RIDER ACTION.

Reducing the number of semantic fields to, for example, HORSE, RIDER, TRAINING NOTION and EQUIPMENT does not solve the problem, which remains for terms such as the two examples above. This intermingling of semantic fields may be astonishing at first, but after examining the extralinguistic context it becomes understandable. One should remember that:

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- ○ the rider and the horse are physically and psychologically close during training: they move and communicate together, triggering each other's actions;

- ○ many horse features (e.g. elasticity, collection) are also abstract training notions denoting objectives which the rider wishes to achieve in every horse they train;

- ○ many exercises (e.g. change of leg, shoulder in) are named after the main horse body part which performs them;

- ○ several aids – the rider's means of communication with the horse – are themselves equipment (e.g. reins, whip, spurs);

- ○ all exercises take place in a specific gait.

Thus, it only proved possible to sort the terms according to the most frequent concepts. By pointing to the most important elements of horse training, this method displays its linguistic image because it allows for grouping terms related to the same concept; *jazda* [a ride], for instance, is a base for a number of terms: *jazda, jeździć, jeździec, ujeżdżać, ujeżdżalnia, ujeżdżeniowy* etc. Tab. 1 and Tab. 2 show the results of such term grouping, listing concepts with at least ten instances. Obviously, two-word and longer terms may feature more than one frequent concept (e.g. *change of leg – change + leg*), in which case both concepts from such a term are included in the count.

Key to the tables: A – adjective, ADV – adverb, N – noun, P – preposition, V – verb.

Concept	Inflection in the term set	Meaning clarification	Number
rein	rein (N,V), reining (N)	-	34
hand	hand (N)	-	18
aid	aid (N)	means of communication with a horse	16
change	change (N,V)	-	14
side	side (N), sided (A)	-	14
leg	leg (N)	of horse/of rider	13
bit	bit (N)	bridle mouthpiece	12
over	over (P), over- (prefix)	-	11

Table 1: The most frequent concepts in the English term set

One notices that prominent positions in both sets are occupied by aids – the rider's means of communication with the horse which include seat, legs, hands, voice, whip and spurs (Diggle 2005). Rein (1st position in both sets) is not an aid proper, but it transmits signals given by the rider's hand and is therefore necessary for the hand aid to function. Reins are attached to a bit placed in the horse's mouth, hence the presence of bit on the English list. The advantage of manual action (rein, hand, bit) over leg action (leg) in the English set complies with the fact that humans tend to perform most activities using hands; in addition, proper use of reins is a complex issue, so this channel of communication with the horse remains central in the equestrian discourse. The image is completed by change and side, which underline the nature of horse training: dynamism and diversification of exercises in order to focus the horse's attention and improve its fitness. The Polish set is more varied, which can be attributed to inflection and a greater number of terms in comparison to English, but the aids remain significant (wodza, łydka, siad, pomoc). However, attention is also paid to the horse's gaits (stęp, kłus, galop), which scarcely appear in the English table. The same concerns jazda, koń and szkolić – the background concepts of the subject field in question (whereas the English set seems to build the image with use of its parts, without referring to the superior concepts). The dynamism is conveyed by noga (leg – of a horse only, because it is the horse that actually walks and because the rider's leg is referred to as łydka) and zmiana; however, this energy needs to be controlled by the rider, hence the prominence of stawiać, trzymać, zbierać and zginać, which denote various methods of guiding the animal. Therefore, the image of horse training which emerges from both sets of terms has three main features: communication, dynamism and control. This structure may be

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attributed to the horse – a powerful, living being which the training contrasts with the human desire to dominate. Horse riding is the only Olympic sport distinguished by the participation of animals and this unique character is conveyed by the relevant vocabulary.

Concept	Meaning	Inflection in the term set	Number
wodza (N)	rein	wodza (N)	76
jazda (N)	ride	dojezdek, jazda, jezdność, jeździec, jeździectwo, podjezdek, ujeżdżacz, ujeżdżalnia, wjeżdżanie, wyjeżdżanie (N); jechać, jeździć, podjeżdżać, ujeżdżać (V); jeździecki, ujeżdżeniowy, ujeżdżony (A)	75
galop (N)	canter	galop (N); galopować (V)	42
noga (N)	leg	noga (N)	33
koń (N)	horse	koń, koniarz, koniuszy (N)	32
stawiać (V)	position	postawa, postawienie, przestawienie, staw, stawianie, ustawienie (N); podstawić, stawać, ustawić (V); podstawowy, przeciwstawny (A)	32
łydka (N)	calf	łydka (N)	28
stęp (N)	walk	stęp, ustępowanie (N)	26
szkolić (V)	school	szkolenie, szkoła (N); szkolny (A)	24
kłus (N)	trot	kłus (N); kłusować (V)	23
zmiana (N)	change	zmiana (N); zmieniać (V)	23
siad (N)	seat	dosiad, dosiadanie, półsiad, siad, zsiadanie (N); wsiadać, zsiadać (V); wysiadywany (A)	22
pysk (N)	muzzle	pysk (N)	20
ręka (N)	hand	ręka (N); oburącz (ADV)	20
zad (N)	croup	zad (N); zadni (A)	19
trzymać (V)	hold	podtrzymujący, powstrzymujący, wstrzymujący, wytrzymujący (A); trzymanie, zatrzymanie (N); zatrzymać (V)	18
wnętrze (N)	inside	wewnętrzny, zewnętrzny (A); wewnątrz, zewnątrz (ADV)	18
przód (N)	front	naprzód (ADV); przedni (A); przód (N)	15
ruch (N)	movement	odruch, ruch (N); ruchliwy (A); ruszać (V)	14
zbierać (V)	collect	zbierający, zebrany (A); zebrać (V); zebranie (N)	13
głowa (N)	head	głowa, ogłowie (N); główny (A)	12
pomoc (N)	aid	pomoc, pomocnik (N)	12
skok (N)	jump	podskok, skakanie, skoczek, skok (N); skokowy (A)	12
grzbiet (N)	back	grzbiet (N)	11
zginać (V)	bend	zgięcie (N)	11
ciągnąć (V)	pull	ciąg, podciągnięcie, półciąg (N); ciągnąć (V); wyciągnięty (A)	10
prowadzić (V)	lead	prowadzący (A); prowadzenie (N); prowadzić (V)	10
temperament (N)	temperament	temperament (N)	10

Table 2: The most frequent concepts in the English term set

5. Conclusions

The formal and semantic introductory characterization presented in section 4 revealed the most significant features of the examined equestrian specialized vocabulary: domination of nouns and the linguistic image based on communication, dynamism and control. Still, these discoveries are based on static, isolated terms, so they need to be verified on the basis of a corpus in order to provide a reliable linguistic image of horse training conveyed by the relevant specialized vocabulary.

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The corpus compiled for this research is discussed here by way of conclusion because its structure is yet another feature determined by the extralinguistic context. The study is contrastive, so the corpus is divided into two main subcorpora – English (338,525 words) and Polish (99,596); however, each of these demonstrates specific internal organization. The English subcorpus has two parts: the classical (English) and the Western riding part because these are two most widespread riding styles in the world. A research of horse training vocabulary needs to take that fact into account; therefore, the use of English terms in literature generated by the two equestrian environments shall be compared. The texts were classified into the two groups on the basis of the author's affiliation, i.e. the riding style that they predominantly practice in their work (even if a trainer practices both styles, as is quite frequently the case, one of them is their original/preferred/dominant style/environment). Thus, terms mutual for both English text sets shall be presumed to show the core, mutual part of schooling horses regardless of style. Many distinguished horse trainers share the opinion expressed by Arthur Kottas-Heldenberg, the former Chief Rider of the Spanish Riding School in Vienna, that good riding has no style and is guided by a universal goal (Radtke 2010: 6), the latter clearly outlined in Article 401 of the *FEI dressage rules* in section 2. Corpus research of terms is expected to demonstrate that this opinion is conveyed by the specialized language in question.

As the research focuses on English, the Polish subcorpus is employed for comparison, hence its smaller size. Sadly, it must also be mentioned that the availability of Polish texts on horse training is much more limited in relation to the English equestrian environment, especially as regards online resources. The number of institutions and horse trainers sharing their writing is incomparably smaller and, in addition, often based on translation of foreign texts, available in abundance. Therefore, the Polish subcorpus will also serve to check the influence of translation on term use: it has an original and a translated part. Its structure cannot be identical with that of the English subcorpus also because the Western riding style is still less widespread in Poland than the classical style and cannot therefore serve as an appropriate division criterion.

Describing corpus properties is the last stage of preparations preceding corpus research. The latter might appear to be the main and/or the only phase where the context of term use comes to the fore. However, as I hope to have shown, that context accompanies the researcher from the very beginning, when they select a subject field whose language to analyze, through choosing term sources till collecting term sets. From this point of view, corpus research becomes a logical consequence of the preceding activities. Accordingly, the whole study is cohesive and likely to yield interesting results concerning the fascinating language-world relation.

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Les dictionnaires juridiques Internet comme vecteur de la langue-culture du droit

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Abstract. Within the framework of the Modern theory of lexicographic functions, pedagogical specialised lexicography has discussed and shown how specialized dictionaries should provide information serving both knowledge-orientated and communication-orientated functions. Given the increasing tendency to consult and look up free online lexicographic materials, it is our purpose to broaden the picture from paper dictionaries to free online resources available through the Internet, and to networked human-oriented electronic Internet dictionaries in particular. More specifically, we shall carry out a metalexicographic analysis of some free legal internet dictionaries in order to evaluate their (in)adequacy as a tool for legal language and knowledge dissemination.

Keywords. Free Internet dictionaries, specialized lexicography, knowledge dissemination, knowledge- and communication-oriented functions.

1. Introduction

1.1. Le cadre théorique

La lexicographie spécialisée constitue selon nous un outil de transmission du savoir linguistique et disciplinaire d'un domaine, parce que la langue spécialisée qu'elle décrit est « une langue naturelle considérée en tant que vecteur de connaissances spécialisées » (Lerat 1995 : 20). La *théorie des fonctions lexicographiques* (cf. par exemple, Bergenholtz, Tarp 1995, 2003) – qui travaille de manière à satisfaire les exigences d'un usager spécifique ayant des types de problèmes spécifiques à résoudre, en relation avec des situations d'usage spécifiques – a désormais montré que le dictionnaire spécialisé peut contribuer à l'apprentissage cognitif et linguistique en ce qu'il offre une série d'informations répondant à des fonctions *knowledge-orientated* (qui concernent l'exigence de l'usager d'obtenir des informations culturelles ou encyclopédiques sur un certain sujet et qui s'avèrent donc une source d'apprentissage disciplinaire) et/ou *communication-orientated* (qui ciblent la communication, la traduction et la production active de textes et qui sont donc une source d'apprentissage linguistique).

Plus particulièrement, certains travaux concernant la *lexicographie spécialisée pédagogique* (Fuertes-Olivera, Arribas-Baño 2008 ; Fuertes-Olivera 2010 ; Tarp 2005, 2008, 2010) – donc adressée à des usagers non experts et/ou à des aspirants experts – ont montré les voies à suivre pour améliorer la production de dictionnaires spécialisés visant ce type de public : un dictionnaire spécialisé à but pédagogique devrait mélanger les deux fonctions *knowledge-* et *communication-orientated* afin d'aider son public à connaître et apprendre, d'une part, des connaissances disciplinaires concernant un domaine déterminé, et de l'autre, des unités lexicales et des significations nouvelles, les relations entre unités lexicales (du point de vue morphologique et conceptuel), ainsi que l'emploi correct et approprié des unités lexicales.

1.2. L'objet de l'analyse

Nous avons examiné ailleurs (Preite 2012 et s.p.) la part faite aux renseignements que l'on peut considérer comme pédagogiques (*knowledge-* et *communication-orientated*) dans quelques dictionnaires juridique français sur papier[1]. Dans cette étude nous nous penchons, en revanche,

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sur la catégorie des *dictionnaires Internet* qui – encore plus que les dictionnaires traditionnels – ouvrent un accès rapide et économique aux données lexicographiques, car ils sont repérables de manière gratuite et sans inscription par une simple interrogation via un moteur de recherche.

Ces dictionnaires, potentiellement consultables par tout internaute, ne sont pas dessinés pour satisfaire les besoins spécifiques d'usagers spécifiques dans des conditions d'emploi spécifiques, comme le voudrait la théorie des fonctions lexicographiques. Pourtant c'est justement la possibilité d'une consultation gratuite et rapide sur la Toile qui fait de ces ressources un vecteur privilégié du savoir linguistique et disciplinaire du droit, auprès du grand public indifférencié[2], mais aussi du public composé d'étudiants[3] de français juridique et/ou de droit. Tels étudiants peuvent consulter un dictionnaire juridique lorsqu'ils sont entrain de lire un texte, de rédiger un document, de le traduire ou, tout simplement, afin d'acquérir de la connaissance dans le domaine : « […] learners can be subdivided in those *learning skills* [communicative or linguistic] and those *learning knowledge* » (Tarp 2010 : 40).

Après avoir présenté les différents outils compris dans l'étiquette générique de *dictionnaire Internet* à travers les typologies proposées par De Schryver (2003) et Fuertes-Olivera (2010) (§2), nous procéderons à l'analyse d'un échantillon de dictionnaires juridiques Internet choisis pour la facilité, la rapidité et, par conséquent, la fréquence d'accès, afin de détecter la présence de renseignements de type pédagogique *knowledge-* et *communication-orientated* (§3) – auxquels s'ajoutent certaines éléments typiques du milieu informatisé – qui permettent d'évaluer leur utilité éventuelle pour la transmission du savoir juridique et de la langue qui l'exprime.

2. *e-Lexicography* : une réalité multiple

> Electronic dictionaries are reference tools that have been designed to fulfil one or more functions, that are presented as collections of electronic structured data that can be accessed with multiple tools, enhanced with a wide range of functionalities and used in various environments. (De Schryver 2003 : 146)

La lexicographie électronique comprend donc une multiplicité d'outils différents – dictionnaires, glossaires et bases de données[4] – que De Schryver (2003 : 147-151) a essayé d'ordonner en proposant une typologie des dictionnaires électroniques (terme employé avec fonction hyperonymique) dépendant d'un seul critère : la manière d'y accéder. L'appréhension de ce critère conduit De Schryver à se demander : « WHO accesses WHAT WHERE ? ». Pour ce qui est du *who*, l'auteur propose de différencier entre <humains> et <machines>. Pour ce qui est du *what*, il fait référence à l'environnement du dictionnaire ou *dictionary medium*, qui peut être un objet physique (non électronique) ou bien un support électronique, à savoir un *human-oriented electronic dictionary* ou bien un *pure NLP system* (où *NLP* signifie *natural language processing*). Des deux points qui précèdent découle le *where*, qui concerne le type de mémorisation et est subdivisé entre *stand-alone storage* (par exemple, le CdRom) et *networked storage* (par exemple, Intranet ou Internet), les deux s'opposant au dictionnaire papier traditionnel.

Les dictionnaires Internet que nous allons prendre en considération appartiennent donc à la classe des *networked human-oriented electronic dictionaries* in the Internet.

Toutefois, selon Fuertes-Olivera (2010 : 195-196) cette typologie peut être améliorée en répondant à d'autres questions ; par exemple : qui a rédigé le dictionnaire ? pour qui a été rédigé le dictionnaire ? le dictionnaire est accessible seulement après inscription ? Sur cette base, il distingue entre *collective free Internet reference works* (par exemple, *Wiktionary*) et *institutional Internet reference works*. Cette dernière classe, se subdivise en deux sous-catégories, à savoir *restricted institutional Internet dictionaries* (produits lexicographiques ayant des buts commerciaux, rédigé par des experts lexicographes) et *free institutional Internet terminological dictionaries*.

Ce dernier type de dictionnaire électronique, toute ressource confondue[5], est généralement

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rédigé par un lexicographe non-professionnel afin d'aider le public d'usagers à comprendre les termes liés à l'offre plus ou moins commerciale d'un produit, d'un service, d'une institution :

> [Free institutional Internet terminological dictionaries are] usually compiled by "amateur lexicographers" either as a part of promotional campaigns or as a way of helping co-staff or possible customers to understand texts. A typical example consists of terminological dictionaries explaining terms connected with the products and/or services offered by the organisation, usually accessed through the homepage of the institution, through dictionary portals, and through the homepage of academics […].
> (Fuertes-Olivera 2010 : 196-197)

L'usager reste en revanche indifférencié : en effet, nous l'avons dit (§1.2.), les dictionnaires Internet gratuits ne sont pas conçus afin de répondre aux besoins spécifiques d'usagers spécifiques dans des situations d'usage spécifiques. De cela découle l'hypothèse que les « lexicographes » rédigent leurs articles pour n'importe quelle typologie d'usager.

3. Analyse de quelques dictionnaires Internet de domaine juridique

Puisque notre étude ne porte que sur la sous-catégorie des *free institutional Internet terminological dictionaries* de domaine juridique, c'est à cette classe que nous faisons référence par la dénomination plus simple de dictionnaire Internet. Les ressources retenues correspondent aux cinq premiers résultats que le moteur de recherche *Google* affiche lors d'une interrogation par les expressions *dictionnaire/vocabulaire juridique*[6]. Deux considérations avant de présenter l'analyse : remarquons, d'une part, que parfois ce sont les sites eux-mêmes qui déclarent que les rédacteurs ne sont pas des lexicographes, mais des juristes, et de l'autre, que l'étiquette « vocabulaire », traditionnelle en lexicographie juridique papier, est délaissée au profit de dénominations telles que « dictionnaire », « glossaire » ou « lexique »[7].

Les dictionnaires retenus sont : *Dictionnaire du droit privé français*[8] (DDP, 1280 entrées) ; *Le dictionnaire juridique* de *Droit-pratique.fr*[9] (DJ, 650) ; *Glossaire juridique* de *portail-juridique. com*[10] (GJ, 220) ; *Lexique juridique* du portail *Net-iris.fr*[11] (LJ, 525) ; *Dictionnaire Eurojuris France*[12] (DEF, 395).

Notre objectif, nous le rappelons, est de vérifier si leur structure et leur contenu s'avèrent adaptés aux besoins des étudiants de français juridique et/ou de droit (§1.2.), c'est-à-dire utiles afin d'acquérir des compétences linguistiques et disciplinaires concernant le domaine juridique.

Les éléments que nous allons prendre en considération sont d'abord l'accessibilité (portail, moyens de recherche, hyperliens, etc.) – strictement liée au concept d'*usability* (cf. Heid 2013) – et la mise à jour, pour ce qui est des caractéristiques influencées par l'Internet (§3.1.). Ensuite, nous allons vérifier quels éléments *knowledge-orientated* et *communication-orientated* sont présentés par les dictionnaires Internet choisis (§3.2.), à l'aide d'une liste des informations que l'usager peut traditionnellement repérer dans un dictionnaire juridique (papier), élaborée par Groffier et Reed (1990 : 44-45) : *Catégories grammaticales*, *Domaine du droit*, *Source*, *Etymologie*, *Définition*, *Explication*, *Exemple*, *Note d'usage*, *Synonymes*, *Analogies*, *Antonymes*, *Renvois*, *Lexique en annexe*.

3.1. Mise à jour et accessibilité

Comme le dit Fuertes-Olivera (2012 : 403) « a free Internet dictionary is more than a container of the lexicon of a language. It is a tool equipped with (some of) the technological possibilities the Internet offers ». Le tab. 1 montre les caractéristiques influencées par le milieu informatisé que nous allons prendre en considération :

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Ouvrage	Mise à jour	Portail	Fenêtre pour la recherche du lemme	Liste lemmes	Liste lemmes par lettres	Liens à d'autres lemmes	Liens à d'autres textes
DDP	-	x	x	x	x	x	x
DJ	-	x	x	-	x	-	-
GJ	-	x	-	-	x	-	-
LJ	-	x	x	-	x	-	x
DEF	-	x	x	-	x	-	x

Tableau 1 : Grille d'analyse des caractéristiques dépendant du milieu informatisé

Le DDP permet une option de recherche triple : il offre la liste complète de la nomenclature à faire défiler selon l'ordre alphabétique, en plus de la possibilité, partagée par tous les dictionnaires, de choisir une lettre de l'alphabet pour ne chercher un terme que dans une portion de nomenclature déterminée, et de la présence d'une fenêtre de recherche, qui ne fait défaut que dans le cas du GJ.

Deux autres caractéristiques sont partagées par toutes les ressources observées : l'une est un atout, à savoir l'insertion dans un portail juridique censé enrichir la possibilité d'approfondissement des recherches ; l'autre est en revanche un défaut et concerne l'absence d'indications explicites à propos de la mise à jour des données, qui se traduit dans l'impossibilité de savoir si les définitions consultées sont toujours fiables :

> Updating terminological dictionaries – and informing users on the date of the revision even if no change has been introduced – is very important for pedagogically-oriented dictionaries, because users must be sure that the included term(s) are still in operation and have been adapted to possible modifications. (Fuertes-Olivera 2010 : 206)

L'une des chances du milieu informatisé touche à l'exploitation d'un système d'hyperliens renvoyant, d'une part, à certains termes employés dans les définitions et faisant à leur tour partie de la nomenclature du dictionnaire, et de l'autre, à des hypertextes de nature différente.

Remarquons que les hyperliens internes ne sont exploités que par le DDP : les autres dictionnaires ne renvoient même pas à d'autres lemmes par un balisage typographique. Il est évident que cette absence complexifie les recherches et limite la qualité (aussi bien que la quantité) des informations qui peuvent être récupérées par l'usager. En revanche, la structure du DDP tend à mettre en exergue les liens conceptuels entre les termes et entre les notions voisines de la discipline, constituant une sorte de guide, d'accompagnement à la découverte des informations.

Les liens aux hypertextes apparaissent dans DDP, LJ et DEF : si le premier renvoie à d'autres sites juridiques mais néglige législation et jurisprudence (dont il ne donne que les références), les autres construisent des liens directs avec législation et jurisprudence, mais aussi avec articles et documents d'approfondissement rédiges par les membres des rédactions. Ces textes permettent d'obtenir des suppléments d'information de type encyclopédique, et donc *knowledge-orientated*, sur un certain concept, objet ou institution juridique.

3.2. Informations *knowledge-orientated* et *communication-orientated*

Le tab. 2 montre la présence dans les cinq dictionnaires Internet retenus des renseignements traditionnellement contenus dans les ouvrages papier du même domaine[13] : signalons que le x ne signifie pas que l'information apparaît de manière systématique[14].

Les fonctions qui fondent tout dictionnaire spécialisé relèvent de la catégorie *knowledge-orientated*, où confluent le savoir acquis sur la discipline ainsi que sur la langue juridique (Bergenhotz, Tarp 2003 : 176 ; Bergenholtz, Nielsen 2006 : 288). Nous jugeons que, parmi ceux qui ont été mentionnés par Groffier et Reed, les éléments suivants appartiennent à cette classe : le *domaine du droit*, la *source*, l'*étymologie*, le système des *renvois*, la *définition* et l'*explication*. En revanche, peuvent participer (sans exclusivité) des fonctions *communication-orientated*

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– destinées à l'acquisition d'un savoir-faire linguistique – les *catégories grammaticales*, les *exemples*, les *notes d'usage* (qui contribuent à la clarification des conditions syntaxiques et grammaticales des entrées, ainsi que des emplois diatopiques, diachroniques, diaphasiques), la présentation de relations sémantiques à travers les renvois à *synonymes*, *analogies* et *antonymes*, et le *lexique en annexe*.

Ouvrage	Catégories grammaticales	Domaine du droit	Source	Etymologie	Définition	Explication
DDP	-	-	x	-	x	x
DJ	-	-	-	-	x	x
GJ	-	-	x	-	x	x
LJ	-	-	-	-	x	x
DEF	-	-	x	-	x	x

Ouvrage	Exemple	Note d'usage	Synonyme	Analogie	Antonyme	Renvoi	Lexique en annexe
DDP	x	x	x	x	-	x	Abréviations
DJ	x	-	-	-	-	-	-
GJ	x	-	x	x	-	-	-
LJ	x	-	x	x	-	x	-
DEF	x	-	x	x	-	x	-

Tableau 2 : Adaptation de la grille d'analyse de Groffier, Reed (1990 : 44-45)

3.2.1. Informations *knowledge-orientated*

Pour ce qui est des fonctions cognitives, visant l'acquisition d'un savoir disciplinaire et linguistique, il convient de constater l'absence de l'*étymologie* – qui pourrait clarifier le sens de termes dérivant du droit romain – et des *domaines* indiquant l'appartenance des termes aux différentes branches du droit – qui ne vont pas de soi pour les étudiants.

Bien que traitées de manière différente, les *sources*[15] apparaissent dans quatre dictionnaires sur cinq. A la fin des définitions, le DDP offre des renvois aux textes de loi, aux décisions de justice, aux ordonnances et, lorsque les institutions juridiques sont très débattues, à une bibliographie de référence sur le sujet. En revanche, le DEF, le DJ et le GJ n'indiquent le sigle d'un article de loi que dans de rares définitions, auxquelles parfois le DEF ajoute la possibilité de cliquer sur des hyperliens *en savoir plus*, qui augmentent l'accès à ce genre d'information.

Généralement les articles montrent des *définitions* qui peuvent s'éloigner du modèle aristotélicien pour assumer d'autres formes, et qui sont approfondies par des *explications*. Les définitions du DDP sont accompagnées de renseignements encyclopédiques étendus et contiennent parfois des hyperliens à des termes qui représentent les actants et les arguments des lemmes aussi bien que les notions voisines adoptés et définis dans la nomenclature. Comme le DDP, LG et DEF présentent des renvois en fin de définition (par exemple, par la marque V. ou entre parenthèses), mais dépourvus de connexions directes par hyperliens.

La metalexicographie anglophone appelle le *système de revois* internes *mediostructure* ou *cross-reference structure* (cf. Bergenholtz, Tarp 1995). Cette structure permet aux usagers « to locate the information spread over different component parts » (Fuertes-Olivera, Arribas-Baño 2008 : 22) et s'avère très utile pour l'acquisition du savoir disciplinaire ainsi que pour la reconstitution des liens conceptuels et sémantiques entre termes éclatés par l'ordre alphabétique. Le système de renvois n'est pas absent dans les dictionnaires retenus, toutefois, sauf dans le cas du DDP, il n'est mis en évidence ni par un balisage typographique ni par des hyperliens. Rapportons un exemple tiré du DJ : « *Créanciers de droit commun (ou chirographaires). Créancier* qui n'est titulaire

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d'aucune garantie (*hypothèque*, *privilège*, *sûreté*) pour le remboursement de sa créance et qui a pour gage l'ensemble du patrimoine de son débiteur ». Une vérification dans la nomenclature permet de constater que hypothèque, privilège, sûreté en font partie et sont donc définis à leur tour, mais aucune signalisation n'y renvoie. Cette absence d'un système de balisage de renvois est remarquable : il devrait constituer la charpente des dictionnaires Internet, sa puissance pouvant être augmentée par l'emploi d'hyperliens, mais seulement le DDP essaye d'en exploiter les potentialités. Par exemple, dans le DDP, la recherche de *commodat* par la fenêtre de recherche récupère aussi le terme *prêt* car elle n'affiche pas seulement le lemme, mais aussi l'emploi du terme à l'intérieur des définitions. En réalité *commodat* n'est pas défini, puisqu'il s'agit d'un terme « retiré du code civil » et remplacé par *prêt à usage* : ce qui explique le renvoi direct par hyperlien à l'article consacré à *prêt* (*à usage*) qui, à son tour, mentionne la substitution. Cette stratégie de référence croisée instaure et met en évidence les liens conceptuels réciproques entre termes et assure en même temps la possibilité de récupérer facilement les définitions des termes juridiques employés pour confectionner les définitions (ou les explications) elles-mêmes. L'utilité d'une telle démarche pour l'acquisition d'une connaissance juridique (et linguistique) est évidente, surtout pour des étudiants en droit.

Remarquons, enfin, que le DDP s'est doté d'une *notice pour l'usager*, dans laquelle l'auteur explique quelles sont les matières retenues et la méthodologie suivie pour la rédaction des définitions (du point de vue des contenus juridiques) et qui renvoie à d'autres ressources Internet élargissant le réseau de connaissances auxquelles l'usager peut avoir accès, aussi bien que d'une *liste d'abréviations*, suite à la demande explicite de nombreux étudiants (utile également du côté *communication-orientated*). Ces éléments, unis à la présence d'explications encyclopédiques concernant les concepts et les institutions à l'intérieur des articles, s'avèrent précieux pour la dissémination de la culture juridique, du point de vue *knowledge-orientated*.

3.2.2. Informations *communication-orientated*

Les informations *communication-orientated* – presque négligées par les dictionnaires juridiques traditionnels qui ne sont pas conçus selon les tenants de la théorie des fonctions lexicographiques – concernent les compétences pratiques qu'il est possible d'obtenir à travers la consultation d'un dictionnaire. Elles permettent donc de répondre à des exigences qui ressortent de la production linguistique active, qu'il s'agisse de rédaction ou de traduction.

La première remarque touche à l'absence des *catégories grammaticales* qui pourraient être très utiles en particulier (mais non seulement) pour les usagers de langue non maternelle car le lexique juridique contient souvent des termes peu fréquents ou inusuels : l'indication des formes irrégulières du féminin et du pluriel ou de la (in)transitivité des verbes serait souhaitable. Une particularité concerne le DJ : parfois, il offre dans la nomenclature une double entrée, à la forme du singulier et du pluriel, bien que la définition donnée soit identique (par exemple, *rixe* et *rixes* ou *risque* et *risques*).

Les *notes d'usage*, exclusivité du DDP, ne sont pas systématisées, elles apparaissent, rarement, dans des formes discursives à l'intérieur des définitions et peuvent concerner une variété diaphasique, « Dans le langage du Palais on dit… » (*Articuler*), ou diachronique, « …peu usité de nos jours » (*Cohérie*), « terme du vieux français » (*Hoir*).

Si les *synonymes* et les *analogies* ou *notion voisines* sont présentées par tous les dictionnaires, excepté le DJ, les *antonymes* ne sont pas envisagés. Les relations sémantiques ne sont pas explicitées par un système de marques, mais par des expressions telles que « synonyme de » (*Adjuger*, DDP ; *Arrêt*, GJ et DEF) ; « dans un sens dérivé » (*Adjuger*, DDP) ; « au sens large » (*Jugement*, DEF) ; « Appelé également » (*Magistrat du parquet*, LJ), etc. Le renvoi aux notions voisines peut passer par la notation *V.* ou *voir* :

Libéralité. Disposition par laquelle une personne […]. (V. donation). GJ ;

Magistrats du siège (voir juge). DEF) ;

par la mise entre parenthèses :

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Valeur mobilière. Valeur […] qui confère à son propriétaire soit un droit d'associé (action, certificat d'investissement), soit un droit de créancier (obligation). GJ ;

Ascendants. Parents dont on descend en ligne directe: père et mère (ascendants privilégiés), grands-parents et autres aïeuls (ascendants ordinaires). DJ ;

ou bien elle peut être intégrée discursivement dans l'explication :

Décision. […] On parle de "jugement" pour les tribunaux d'instance ou de grande instance, "d'arrêt" pour les Cours d'appel, Cours d'assise, Cour de Cassation, Conseil d'Etat, et de "décision" pour le Conseil Constitutionnel. GJ ;

Appel. […] La personne qui fait appel est "l'appelant", celle contre laquelle l'appel est formé est "l'intimé". DEF.

En ce qui concerne les *exemples*, il convient de différencier entre ceux qui se limitent à exemplifier les objets ou concepts inclus dans certaines catégories juridiques[16], de ceux qui montrent l'emploi du lemme en discours. Si le premier type n'a une qu'une fonction *knowledge-orientated* (utile pour l'acquisition du savoir juridique), le deuxième – plutôt rare – a le mérite de fournir des informations sur la manière de combiner le mots dans une phrase. Toutefois, force est de constater qu'il ne s'agit pas de contextes authentiques et, dans la plupart des cas, même pas de phrases entières. Rapportons, par exemple :

Déclaration. Acte solennel […] (ex: déclaration de la naissance d'un enfant devant l'officier d'état civil). GJ ;

Ministre délégué. Il s'agit d'un membre du gouvernement qui […] (ex: ministre délégué aux affaires européennes). LJ.

Pour terminer, le seul *annexe* relevé est la *liste d'abréviations* du DDP, mentionnée dans §3.2.1., utile pour la compréhension de textes, mais aussi pour la rédaction, puisque les sigles constituent pour les étudiants un obstacle notable à cause de leur opacité sémantique. Ajoutons enfin que le LJ présente bon nombre de sigles directement dans la nomenclature.

4. Conclusions

Rappelons que nous n'avons pris en considération que les cinq premiers dictionnaires Internet français (de France) affichés par une recherche via *Google* à partir des expressions *dictionnaire/ vocabulaire juridique*. Il s'agit donc de ressources sur lesquelles il est impossible de ne par tomber, pour un étudiant qui choisit de s'en remettre à la lexicographie juridique électronique – simple à accéder et surtout gratuite – pour ses recherches lexicales : ce qui justifie notre intérêt.

L'observation met en exergue plusieurs éléments. En premier lieu, force est de constater que le milieu informatisé ne joue pas le rôle souhaité. Par exemple, la mise à jour des données n'est pas indiquée, défaut qui réduit la fiabilité de ce type de ressource et le rapproche des dictionnaires papier :

> A printed dictionary is already obsolete the moment it is published. This is not true to the same extent for an internet dictionary, which can, in principle, be extended or changed every day. But if it is not or no longer done, an internet dictionary will also degenerate relatively quickly into a less useful and less reliable tool. (Bergenholtz 2013 : 52-53)

Et encore, les définitions, explications et approfondissements encyclopédiques ne contiennent des hyperliens internes (à d'autres lemmes) que dans le DDP (où ils ne sont pourtant pas systématiques ni bidirectionnels) et les hyperliens renvoyant à des hypertextes de nature différente font défaut dans le DJ et le GJ. Cela ne peut que signifier que ces ressources ont été dessinées et confectionnées selon les démarches typiques des dictionnaires sur papier, sans prendre en compte toutes les potentialités de la lexicographie électronique. Pour reprendre la métaphore

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avancée par Tarp (2009 : 28), les dictionnaires examinés sont des « faster horses » : ils courent très vite, mais il ne seront jamais aussi rapides qu'une voiture, à savoir un dictionnaire bâti dans et pour le milieu informatisé.

En deuxième lieu, bien que le DDP offre des articles encyclopédiques plus longs et développés que ceux des autres dictionnaires retenus, le genre de renseignements collatéraux repérés change peu, sauf pour ce qui est du GJ, le moins riche et articulé. Tous, en tout cas, inclinent vers le penchant *knowledge-orientated* grâce à la place dominante des définitions (y compris les explications et les passages encyclopédiques) et, pour ce qui est de DDP, LJ et DEF, aux renvois hypertextuels à des documents juridiques de nature différente. De même, tous affichent un bon lot d'asystématicité pour ce qui est des informations *communication-orientated* qui – lorsque présentes – ne sont pas mises en évidence par un système de balisage typographique.

En troisième lieu, ces dictionnaires Internet ne sont pas accompagnés de notices qui en expliquent le fonctionnement, le contenu, la méthodologie suivie dans la rédaction des articles (le DDP limite l'explication des matières retenues et de la méthodologie suivie pour la rédaction des définitions au point de vue des contenus juridiques). Cela est justifié du fait que le souci majeur est celui d'offrir un accès rapide au sens des termes à un usager qui n'est *généralement* ni un étudiant ni un théoricien, et donc qui ne s'intéresse pas aux questions de méthode, qui ne se demande pas s'il y a une cohérence théorique derrière le produit.

Dès lors, peuvent ces dictionnaires juridiques Internet être considérés des vecteurs de la langue-culture juridique ? Selon nous, malgré leurs défauts, ces dictionnaires peuvent offrir aux étudiants en droit des informations appropriées de type *knowledge-orientated*, finalisées surtout à la réception de textes. En revanche, ils résultent moins adaptés aux exigences des étudiants de langue juridique, puisque les informations *communication-orientated* sont rares et surtout non systématisées.

5. Notes

[1] Bissardon (2005, 2ᵉ éd.), Cabrillac (2008, 3ᵉ éd.), Cornu (2007, 8ᵉ éd.), Lerat (2007), Guillien, Vincent (2010, 17ᵉ éd.).

[2] Comme le dit Dung (2009 : 139), « a notable trait of an online dictionary is its accessibility to both target and potential users » c'est-à-dire « all web users ».

[3] Selon Gouws (2010 : 56) « the concept of a learner is not unproblematic. It could either refer to a learner of the language in which the dictionary is presented or a learner of the subject field treated in the dictionary ». De plus, les étudiants disposent de niveaux de compétence linguistique (du débutant à l'avancé) et cognitive (non experts, semi-experts ou experts) très différenciés.

[4] Que Fuertes-Olivera (2012) et Fuertes-Olivera, Niño-Amo (2013) proposent de regrouper sous l'hyperonyme *Information tools*.

[5] Fuertes-Olivera (2010 : 198-200) regroupe dans la sous-classe des *free institutional Internet terminological dictionaries* trois types de ressources : « glossaries compiled by consultancies or private companies that include a reference work in their homepages with the stated aim of helping potential customers understand the services and / or products they offer. […] reference work published by national or international organizations. They emphasize the normalising character of the terms described, and are electronic versions of previous paper reference works. […] reference works compiled by amateur trained lexicographers working in the language industry ».

[6] Nous n'avons pas pris en considération les liens aux ouvrages papier ainsi qu'aux ressources francophones non françaises (Belgique et Manitoba sont affichées à la première page, alors qu'il faut poursuivre la recherche pour tomber sur le Québec).

[7] Généralement « lexique » est réservé à des recueils terminologiques sans définitions et « glossaire » à des ouvrages limités à une discipline du droit (Groffier, Reed 1990 : 11-12), ce qui n'est pourtant pas le cas des ressources retenues.

[8] DDP : Copyright © 1996-2013. http://www.dictionnaire-juridique.com/lexique-juridique.php/, dernière consultation le 30-10-2013.

[9] DJ : Copyright © 2013 Prat éditions, http://www.droit.pratique.fr /dictionnaire_juridique.php, dernière consultation le 30-10-2013.

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[10] GJ : Copyright © 2006 - 2013. http://www.portail-juridique.com/pages/glossaire.html, dernière consultation le 30-10-2013.

[11] LJ : Copyright © 2000-2013. http://www.net-iris.fr/lexique-juridique/, dernière consultation le 30-10-2013.

[12] DEF : http://www.eurojuris.fr/fre/informations/dictionnaire/a/index.html, dernière consultation le 30-10-2013.

[13] D'autres éléments pourraient être considérés, par exemple : adoption de termes complexes dans la nomenclature, indications morphologiques, transcription phonétique, fréquence d'usage, collocations, etc.

[14] « […] the main characteristic of online dictionaries is their unsystematic nature, as they lack strict lexicographical organisation » (Caruso 2011 : 68).

[15] « […] l'origine du mot, que ce soit le pays, le système juridique, droit civil, common law ou autre, ou encore la disposition législative » (Groffier, Reed 1990 : 43).

[16] Par exemple: *Emolument*. Désigne la rémunération des avocats et officiers ministériels (avoués, huissiers de justice, etc.) […]. DEF ; *Révocation*. Rétractation d'un acte unilatéral (Ex: rétractation d'une offre, d'un testament). GJ.

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The depiction of terminological variation in medical images: Can you see the difference?

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Abstract. Denominative variants for terms arise as a result of the different situated ways in which we conceptualize the world. Individuals learn new concepts by "simulating experiences" of the members of the same conceptual category. Due to the multidimensional nature and high degree of embodiment of medical concepts, variation, as lexical-semantic phenomenon, is not infrequent in naming medical realities. For this reason, terminological databases should account for variation taking place in specialized communication scenarios. Prior research in the field of knowledge visualization has shown that images are useful to represent relations among concepts, and that visual resources should be selected on the basis of the image-schemas underlying the concept depicted.

In this paper, we argue for the inclusion of images in a terminographical database in order to provide a consistent, meaningful, graphical description of variants for terms referring to DISEASE, SIGN/SYMPTOM and BODY PART. By integrating images in a principled way in a terminological database, we intend to clarify how images can evoke different variants of a single medical term by depicting the cognitive (semantic) or communicative (pragmatic) features which often give rise to terminological variation in Medicine.

Keywords. Concept depiction, image-schemas, specialized knowledge visualization, termbases, terminological variation.

1. Introduction

Terminological resources are becoming more and more necessary in today's knowledge society. Terminologists are aware that for knowledge resources to be useful and meet the information needs of users, they must include different data categories (definitions, contexts, terms, grammatical information, images, reliability marks, etc.). There are several reasons to think that the inclusion of diverse types of information in terminological knowledge bases (conceptual, linguistic and visual) should be done in a principled way, that is to say, on the basis of a consistent set of criteria so as to achieve internal coherence within the term entry (Faber et al. 2007; Prieto and López 2009).

Although most lexicographical resources (either general or domain-specific) now tend to include images, they doesn't seem to pay close attention to how images are selected and the way they should be integrated in term entries for the sake of consistency. Frame-based Terminology (FbT), a recent cognitive approach to the study of specialized language, accounts for the multidimensional and multimodal representation of concepts in terminological resources. For this purpose, FbT is trying to identify objective cognition-based guidelines for image selection which are believed to be based on the degree of specialization of images and their level of representativeness. Within FbT, a new theory explaining the graphic representation of concepts is being developed. Specialized knowledge visualization, as this theoretical approach is known, aims at describing the cognitive criteria which underlie the depiction of concepts.

Specialized knowledge visualization is currently being implemented within the project VariMed, an investigation into denominative variation in specialized language. In this project, we are building a new terminological database of lexical variants for terms designating diseases, signs and symptoms. The challenge now is to use images to distinguish between two very similar

terms which differ at a cognitive or communicative level; thus images must visually convey the differences between close terms (reflux, heartburn, gastro-oesophageal reflux disease or GERD).

In this paper, we explore the visual representation of medical concepts with special attention to the notion of representativeness. We also present the research we are conducting in order to assess usability and usefulness of visual resources in terminological databases and to be able to evaluate what users judge as representative by testing general users and experts from the healthcare sector.

In section 2, we discuss the relationship between Terminology and Cognition and explain in more detail the approach known as Frame-based Terminology. Section 3 presents the use of visual resources in terminological databases focusing on the Specialized Knowledge Visualization account and the VariMed project. In section 4, we describe the principles which lie behind the depiction of medical terms and propose an experiment to analyze the representativeness of images from the point of view of potential users. Finally, we offer some concluding remarks.

2. Terminology and Cognition

For the last two decades, terminology theories have evolved towards more cognitive trends; examples can be found in the Communicative theory of terminology (Cabré 1993); Sociocognitive terminology (Temmermann 2000); Termontography (Temmermann and Kerremans 2003); Ontoterminology (Roche et al. 2009); Frame-based Terminology (Faber 2012).

Most of these approaches are descriptive paradigms of specialized languages and their aim is not just standardization, but to explain the behavior of terms and the linguistic phenomena behind them. Since language processes are rooted in cognitive operations ruling the human concept system, they approach cognition from different perspectives: the communicative purpose of terminological units; the social influence on the use of terms; and the use of ontologies to represent concepts.

2.1. Frame-based Terminology

In this framework, FbT is a cognitive theory of terminology which describes terms thanks to three separate micro-theories (Faber 2013): semantic, syntactic, and pragmatic. The semantic micro-theory is used to describe (a) the internal representation of concepts by means of definitions, and (b) the external representation of concepts by means of a linguistically-based ontology which evokes interconceptual relations. The syntactic micro-theory, in turn, contributes to a better interpretation of multi-word terminological units described by a slot-filling mechanism which is based on predicate-argument structures and the notion of valency. Finally, the pragmatic micro-theory describes the influence exerted by larger situational, linguistic, and cultural contexts on the use of terms, which can be constrained by contextual variation across disciplines, cultures, and communicative situations.

Faber (2009) states the theoretical premises of FBT as follows:

○ The general function of specialized language texts is the transmission of knowledge.

○ Terms are words, and their behavior can be described through the extraction of syntactic and semantic information through corpus analysis.

○ The underlying category structure of specialized domains may be represented, in accordance with Fillmore's Frames, by templates for the processes and entities participating in the specialized field.

○ Specialized knowledge acquisition is encouraged by multimodal representations of concepts which highlight our interaction and experience of the world.

In fact, one of the most interesting aspects of FbT is its focus on the cognitive processing of

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specialized terms from a dynamic view, as opposed to other theories which only deal with the communicative aspects of terms regardless how concepts are acquired and processed. The processing and acquisition of specialized concepts is approached by FbT, from the embodied cognition viewpoint. Embodied cognition accounts for the relationship between the real world we perceive through our sensorimotor experiences and the internal representations we use to process and communicate our knowledge about the world (Prieto and Tercedor forthcoming). For FbT, embodiment plays a crucial role in knowledge acquisition, representation and transfer, since they are the foundations of communication and social interaction.

Methodologically, FbT argues for process-oriented terminology management. This methodology advocates a knowledge-based description of specialized domains to determine how concepts interact within a coherent category structure by means of semantic relations.

FbT proposes to analyze multimodality in specialized texts, that is, observing the different types of information implied by different types of semiotic modalities, particularly linguistic and visual. The main objective is to obtain plenty of relevant information from textual corpora in order to be able to facilitate specialized knowledge acquisition. Accordingly, it is our assertion that the knowledge encoded in texts (definitions, contexts, concordances) should mesh with the visual information in images in order to provide a deeper understanding of dynamic domains (Prieto 2013).

3. Terminology and visual resources

Although the ISO standard 704 (2000: 23) concretizes that images in terminographical resources can be iconic, abstract, statistical diagrams, or mixed figures, it merely mentions that "a graphic representation serves its purpose well if it illustrates the characteristics of a given concept and/or its relations to other concepts." The reviewed ISO standard 704 (2009: 46) offers a more detailed explanation of the role of images in terminological databases, as they are considered to be a kind of ostensive definitions. However, it only includes a subtle reference to the notion of multimodality:

> Also known as a demonstrative definition, [an ostensive definition] is one that defines by exhibiting non-lexical representations of the concept (such as a drawing, an illustration, a video, a sound clip, a computer animation, etc.) or even by pointing to an object. With the increased availability of multimedia technology, ostensive definitions may use any form of multimedia that allows one to exhibit non-lexical representations of the concept. However, rather than being used on their own, ostensive definitions are best employed as complements to intensional definitions or concept descriptions, since it is not always clear what is being referred to or how far to generalize from the particular object exhibited. Furthermore, it may prove difficult to deduce the superordinate concept from an ostensive definition." ISO 704 (2009: 46).

3.1. Specialized Knowledge Visualization

Specialized Knowledge Visualization (SKV) deals with the study of textual corpora in order to identify the cognitive structures underlying a given concept and look for images which consistently depict the embodied experience evoked by such structures with a view to their inclusion in terminological databases. The relation between images and scientific and technical texts was previously studied by Prieto (2008, 2013). Consequently, SKV does not conceive the inclusion of images in terminological databases as completely detached from other representations. Images are just one among several possible devices for concept representation which need to be fully integrated into terminological databases in accordance with the information provided by other kinds of definitions: intensional definitions and knowledge-rich contexts.

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3.2. The VariMed project

Such a methodology is currently being applied to a research project known as VariMed, a terminological database of medical terms and term variants. It is our aim to identify the cognitive and communicative motivations for terminological variation and study the causes for different designations of a single concept in the field of Medicine. Denominative variation is a key element in medical communication both at the intralinguistic level (*amigdalitis*-sore throat) and at the interlinguistic level (keyhole surgery--*laparoscopia*). The objectives of VariMed are: (1) to create a corpus of medical texts in English and Spanish multimodal communication contexts; (ii) to register and classify terminology proper lexical variants in English and Spanish and study their semantic and pragmatic features from the perspective of situated cognition; (iii) to carry out a series of experimental tasks to gain insight into the phenomenon of variation in relation to the cognitive processes of lexical production and comprehension; (iv) to generate a multifunctional and reusable resource with image support for linguistic research, translation and technical writing for knowledge dissemination (varimed.ugr.es).

4. Depicting term variants

Terminological variation is a cognitive and communicative phenomenon which implies the coexistence of several designations for a single concept. Sometimes, term variants arise as a consequence of (1) different ways of perceiving real entities and processes, (2) focusing on different attributes (material, purpose, origin, etc.), or (3) different situational contexts involving heterogeneous recipients.

For instance, there are several lexical options to denominate the disease caused by stomach acid coming up from the stomach into the esophagus: *gastroesophageal reflux disease, gastro-oesophageal reflux, reflux, acid reflux, heartburn, GERD*, etc. These terms are not synonyms insofar as they are not completely interchangeable in all possible contexts. Then, doctors in the UK would probably use *GERD* to communicate with other healthcare providers, or *gastro-oesophageal reflux disease* when telling a patient a diagnosis, whereas in the US they would use *gastroesophageal reflux*. Patients, on the other hand, would prefer to tell a doctor the main symptoms they suffer from using *heartburn* instead. Acid reflux can be used to specify what type of fluid is the cause of their discomfort.

Although all variants represent linguistically the same concept and convey the same meaning in essence, a single concept is lexicalized with different connotations, and images could also help to visually represent these cognitive and communicative differences thus complementing the definition. Nevertheless, definitions, depending on how they are written, can focus on different facets of the concept thanks to the principle of multidimensionality.

Previous studies (Prieto and López 2009; Prieto and Faber 2012) have shown that there are images more or less specialized than others, and more or less representative than others. Tab. 1 shows two different visual representations or ostensive definitions for the concept GASTROESOPHAGEAL REFLUX DISEASE.

It is our hypothesis that the image to the left would not just be less representative, but rather judged less depictive by doctors, since it focuses on the burning sensation felt by patients. In contrast, the image to the right would be deemed more appropriate by healthcare providers because it shows gastric content coming up to the esophagus due to a malfunctioning of the esophageal sphincter regardless of the symptoms, which could be considered rather opaque to patients.

In order to assess these issues related to the notion of representativeness, we have designed an experiment to be conducted within VariMed, as described in the following section.

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GASTROESOPHAGEAL REFLUX DISEASE	
(a) heartburn	(b) acid reflux
Source: http://chiropractorrichmondhill. com/wp-content/uploads/2013/03/heartburn. jpg	Source: http://www.webmd.com/heartburn-gerd/heartbrun-and-gerd
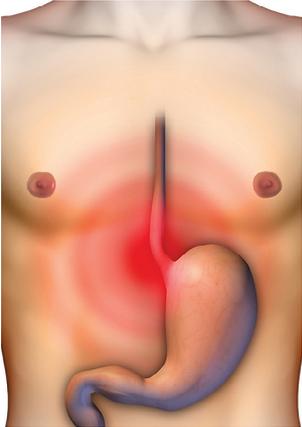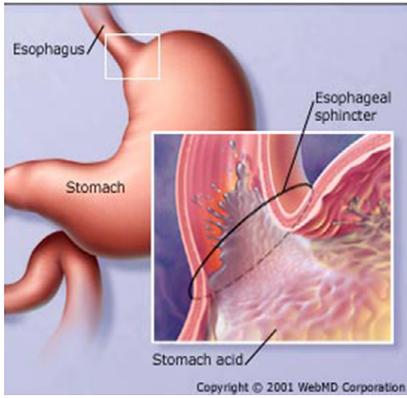
Table 1: Ostensive definitions for GASTROESOPHAGEAL REFLUX DISEASE

5. Exploring image representativeness

The study consists of four experimental surveys aimed at English-speaking healthcare providers and non-experts, on the one hand, and Spanish-speaking healthcare providers and non-experts, on the other.

The overall aim is to test whether the criteria currently used when including images in the VariMed termbase lead to the selection of the most representative images both for experts and non-experts. For this purpose, respondents must complete a 50-item questionnaire where they have to choose among four different images depicting the term/s underlined in the preceding short excerpt. Only one of the four images reflected the image schema underlying the concept definition; according with our hypothesis, this image should be considered the most representative by respondents to the detriment of the other three.

So far, the study is under completion and only one of the surveys has already offered significant results with regard to the representativeness of medical images in the opinion of English-speaking non-experts.

5.1. Preliminary results

The survey was responded by 55 subjects. Given a chance performance of 0.25, the proportion of 0.38 selecting the image-schema based option is highly significant. Even if we would say that chance performance is .33, the .38 proportion would still be statistically better than chance. There does not seem to be a notable difference between images depicting informal term variants (heartburn) and high-register formal variants (*gastro-esophageal reflux disease* or *GERD*). Image-schema based options were considered equally significant in the case of informal variants 0.372, and in the case of formal variants 0.393. This means that register variants do not have an influence in the kind of visual representation used to depict concepts. In other words, definitions (images) and images (ostensive) work at a conceptual level by conveying, either linguistically or visually, a set conceptual features, whereas terms are used in communication and need to adapt to contexts and recipients.

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6. Conclusion

The evolution of terminological theories towards cognitive paradigms has contributed to a deeper study of the human conceptual system and cognitive operations related to knowledge representation and acquisition. FbT has shed some light into so-far little known issues by exploring the semantic, syntactic and pragmatic component of specialized languages.

Within this framework, the investigation carried out in the project VariMed has paved the way to new multimodal approaches to the representation of concepts in the field of Medicine. SKV is paying attention to the depiction of medical concepts in terminological databases with a focus on representativeness and specialization, two key concepts for embodied cognition.

A study is being implemented in order to find out an unambiguous set of clear criteria leading to the appropriate selection of images depicting medical concepts based on their degree of specialization (register variation) and representativeness. Preliminary results shows that (1) images are conceptual representations (ostensive definitions) receiving no influence from terms (designation); (2) images reflecting the image-schemas underlying specialized concepts are considered to be more representative by English-speaking non-experts.

However, in order to draw clearer conclusions, we need to test English-speaking healthcare providers and Spanish-speaking non-experts and health-care providers. This way we will be able to explain whether there are any cultural/linguistic differences between English and Spanish, and between experts and non-experts.

7. Acknowledgements

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The use of humor in online discussions about a specialized technical topic

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Abstract. The present paper scrutinizes humor as used in discussion board messages dealing with a specialized technical topic. The empirical data were gathered from two Finnish discussion boards where the question of domestic heating and especially heat pumps was discussed. One requires registration from participants whereas and the other allows participants to write messages without registration and be completely anonymous. The results show that opening messages included both reinforcing and subversive humor. Reinforcing humor was used especially in order to show goodwill and politeness towards the readers and establish a common ground. Subversive humor was used for questioning and criticizing things and attacking against other groups. It worked as conveying a feeling of superiority over another group and also conveying a negative or critical message in more appropriate form. The humor in online discussions about a specialized technical topic is strongly tied to a topic of the discussion and it is intertwined with the knowledge about the special field. In this case humor and communicating the information of the special field cannot be seen as contradictory areas but humor instead has a role in conveying the knowledge of the special field.

Keywords. Discussion boards, heat pumps, humor, languages for special purposes, opening messages.

1. Introduction

How to use humor in an appropriate way is important in the group socialization process in a new environment (see e.g. Schnurr & Mak 2009: 140). Humor is also an important part of online communities. It relies upon shared meanings and by referencing to common knowledge it can strengthen the shared bases which the group is built on. (Baym 1995) Also the structure of the online community is influenced by humorous discourse through its presupposed knowledge and implied values (Hübler & Bell 2003: 278). Previous research has found evidence that irony and sarcasm are used more often in computer-mediated than in face-to-face settings (Hancock 2004: 458–459).

The subject of this paper is the use of humor in discussion boards dealing with a specialized technical topic. The paper is a part of an ongoing research, which focuses on requesting and providing domain-specific information in online communities. The aim of this paper is to map out how humor is used in the opening messages of the message threads and what kind of functions the humor has in these messages.

The study examines online discussion boards. They are popular and useful tools for information sharing, problem solving and peer advice (see e.g. Savolainen 2011: 863) and they often deal with a certain specific interest or a special domain. Opening messages have an important role in the discussion boards: their purpose is to start new discussions where information, advice or opinions can be shared. They define the topic of the discussion and create an image of their writer.

The present study examines the combination of humor and the knowledge of the special domain. Humor in online communities has been studied before (e.g. Baym 1995; Hübler & Bell 2003), but using humor in communicating the knowledge of the special field has been studied much less and there is especially few studies of it in the online communication settings. That is probably

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because humor and communicating exact information of the special field have generally been regarded as contradictory areas.

2. Humor

This chapter begins with the most abstract level of humor, namely the different theories behind humor that explain what the humor is and where it emerges from. When humor is used in a communication situation it has various communicative functions concerning an individual using humor or the group that he belongs. The different types of humor represent the concrete form in which the use of humor emerges. The humorous intent of an utterance can be signaled to the receiver through communicative cues, which represent the most concrete and visible level of humor in communication, and through which the use of humor can be identified on the textual level.

2.1. Theories of humor

The commonly accepted principal theories of humor can be divided into three groups: incongruity, superiority and release/relief theories (Attardo 1994: 46–47). In the incongruity theory, humor is based on the mismatch between two ideas (Attardo 1994: 48). The amusement is derived from unexpected elements or feelings (Shelley 2003: 352; Perks 2012: 120).

In the superiority theory, which is also called aggression or hostility theory, amusement emerges from elevated feelings of self-worth. Laughter is brought about by feelings of superiority over another or by elation at another's misfortune. (Attardo 1994: 49–50; Shelley 2003: 352) Aggressive humor is also known as "exclusive" humor, since it excludes the target of the humor (Attardo 1994: 50).

In the relief theory amusement comes from the release of built-up emotion. Humor releases tensions and nervous energy after a struggle, tension or strain and also releases one from inhibitions, conventions and laws. (Attardo 1994: 50; Perks 2012: 120)

2.2. Functions of humor

The use of humor has various communicative functions. At the individual level the appropriate use of humor is important in group socialization process in a new environment (Schnurr & Mak 2009: 140). Humor helps the potential new members to build a rapport with the group and to gain approval (Robinson & Smith-Lovin 2001: 141–142). Humor can help an individual to raise his own status and gain attention and popularity. The performer of a successful joke shows cleverness and gains prestige and power to the audience. Humor requires extra processing and therefore producing and understanding it connote cleverness. (Attardo 1994: 324; Bauman 1975: 305) Joking thus conveys the speaker's intelligence, character and goodwill, which in turn influences the audience's receptivity towards the message (Hübler & Bell 2003: 293). By laughing at the same joke, individuals can identify with each other and share a kind of affinity. In these cases humor is based on shared knowledge or mutual shared background. Making oneself the butt of a joke in turn shows goodwill. (Hübler & Bell 2003: 281; Attardo 1994: 324–235) According to previous research, participants in computer-mediated communication situation rated the interaction partners using humor as more likable, responded in a more polite and friendly manner, and reported greater cooperation. The result concerns only "innocent" humor, which does not express aggressive or derisive meanings. (Morkes, Kernal & Nass 1999: 403; 419)

Humor can also function as protecting a face and as a strategy to conveying a negative or critical message in an appropriate form (Holcomb 1997: 4). Issues that might be too threatening to be handled overtly can be negotiated by means of humor. The deniability of the humorous mode allows the speaker to deny the responsibility for what he is saying by claiming that he is only kidding. (Attardo 1994: 325–327)

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At the group level humor relies upon shared meanings and by referencing to common knowledge it can strengthen the shared basis which the group is built on (Baym 1995). Jokes can also function as informal means of social control. Predominant conventions and social norms are reinforced by means of a joke embarrassing those who violate them. Joking can thus function as a part of defining boundaries and create a base for communicative rules. (Attardo 1994: 323; Holcomb 1997: 9) People can be divided in into hierarchically differentiated groups by the means of humor. Laughing at something that the other person does not implies that participants of the conversation belong to two different groups. In aggressive humor the other person is the target of the humor, which is usually perceived insulting. (Attardo 1994: 323; Holcomb 1997: 4) Humor can work against other groups by making them ridiculed. This kind of humor can have two coincident functions: on the other hand it strengthens the solidarity of the dominant group, but on the other hand it does that on the expense of excluding some other group. (Holcomb 1997: 14) Humor targeted against other groups increases the joking group's cohesion (Robinson & Smith-Lovin 2001: 141–142).

According to its function, humor can be divided to reinforcing and subversive humor. *Reinforcing humor* maintains and reinforces the prevalent situation. It divides up to two subclasses: humor which reinforces existing solidarity relationships and humor which reinforces existing power relationships. Both types maintain the prevalent situation or group norms. The humor that reinforces solidarity emphasizes friendly relationships between the participants. (Holmes & Marra 2002: 66, 71)

Subversive humor in turn challenges and subverts the status quo. Its target may be individual, group, or the wider society. When targeting an individual, subversive humor may undermine the power or status of an individual in the group. Humor may also isolate individuals, identifying ways in which they do not fit into the group or conform to group norms. (Holmes & Marra 2002: 72) Humor targeting a group in turn challenges or criticizes the relevant values, attitudes or goals of the group. At the societal level humor can question the ideology of the community, and often broader institutional and societal values. (Holmes & Marra 2002: 73–74)

2.3. Types and signals of humor

Conversational jokes, also called spontaneous jokes, are humorous utterances, usually witty, off-the-cuff remarks occurring in conversation. They typically comment on the conversational setting itself and therefore have strong contextual ties. (Attardo 1994: 321; Holcomb 1997: 4) Also the figurative forms of language, which can convey multiple meanings with a single expression, can be used as humor. Eight types of nonliteral language can be identified that have emerged in the psychological literature and that according to Roberts (1994: 159) seem to form the basic categories of nonliteral language: hyperbole (exaggeration), understatement, metaphor (implicit comparison), simile (explicit comparison), idiom, indirect request, rhetorical question and irony. (Roberts 1994: 159) Previous research has shown that speakers can use an idiom, a simile, hyperbole or irony in order to be humorous (Roberts 1994: 162).

In idiom, a statement's meaning is not obtainable from a literal interpretation (Roberts 1994: 159). *Metaphors* and *similes* are based on shared properties and similarity between two things. *Irony* instead is based on a difference or a contrast. (Giora, Federman, Kehat, Fein & Sabah 2005: 24) In irony, speaker's intended meaning is something other than what is literally said and what is usually associated with the utterance (Hancock 2004: 447–448). Gibbs (2000: 12–13) classifies different types of irony as sarcasm, understatement, hyperbole and rhetorical questions. In *sarcasm* the speaker means the opposite than he says in order to convey a negative attitude, in *understatement* the speaker expresses less than is the case and, *hyperbole* the speaker exaggerates the situation and in *rhetorical questions* the speaker ostensibly asks a question in order to express an attitude but do not expect an answer. (Gibbs 2000: 12–13) *Satire* refers the use of humor, irony, exaggeration, or ridicule which exposes and criticizes people's stupidity or vices, particularly in the context of contemporary politics and other topical issues (Oxford Dictionaries2013).

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The speaker can signal his ironic intent by using a diverse range of communicative cues, which can be divided up to paralinguistic, contextual and verbal cues. Paralinguistic cues include for example tone of voice and facial expressions. Contextual cues include for example discrepancies between the utterance and the circumstance in which it is uttered. Verbal clues include adverbs and adjectives that amplify an utterance's evaluative intent. (Hancock 2004: 448–449) Burgers, van Mulken and Schellens (2013: 46) divide cues signaling the use of irony to four categories. The first category is different kinds of tropes, for example hyperbole and rhetorical questions. The second category is schematic markers, such as repetition and the change of register, third is morpho-syntactic cues, such as interjections and tag questions, and fourth typographical cues, such as question marks and emoticons. (Burgers et al. 2013: 46) Also co-textual cues appearing in the textual environment of the ironic utterance can imply to the recipient of the forthcoming ironic utterance. Previous ironic utterances and tropes can work as co-textual cues. Cues related to atmosphere include for example the change of register and cynicism. (Burgers et al. 2013: 63)

2.4. Humor in online communities

Playful behavior and joking are important features in communities, because they create immediate atmosphere and support getting acquainted with other members (Heinonen 2008: 152). Also in online communities humor is important (Baym 1995). Research shows that there is a significant amount of playfulness and humor in electronic communication (Morkes ym. 1999: 402). Online communities are usually based on a common interest, which increases rapport and helps understanding the humor (Hübler & Bell 2003: 279). Humor often references to common knowledge, which can be related to the topic of the online community or the earlier discussions of the group. The target of the humor and also its aims often rise from the topic of the discussion. Also the group identity and the feeling of solidarity emerge from the topic. (Baym 1995)

Paralinguistic and extra-linguistic cues, which usually are associated with laughing, such as smiling, clapping hands and tone of voice, are missing from the text-based communication. Computer mediated cues of the humor include for example abbreviations, punctuation marks, emoticons, and vocalization. (Hübler & Bell 2003: 279–280) The humor of online communities differ from spoken discourse also in spontaneity, as there is more time for understanding and expressing humor. Humor can easily be prolonged and developed. Messages are saved on the discussion boards, so humoristic messages can be followed for weeks and even for months. (Hübler & Bell 2003: 279)

Previous research has found evidence that irony and sarcasm are used more often in computer-mediated than in face-to-face settings. This phenomenon has two explanations. Irony is "a risky form of language", and speakers may be less concerned about their social impression in the face of addressees if they do not expect to meet face-to-face. In another explanation irony may be used as a compensatory strategy to overcome the lack of nonverbal cues that are normally used to express relational information. (Hancock 2004: 458–459)

3. Research data and methods

The special field chosen for this study is domestic heating and especially heat pumps. Heat pumps have recently increased their popularity in domestic heating and generated a lot of discussion in Finnish online communities (see e.g. Lampopumput.info 2013). *Heat pumps* are devices that transfer heat from natural surroundings such as air, water or ground to buildings such that the heat flows from a lower to a higher temperature (Official Journal of the European Union 2010: 19). Heating system is a big purchase in many people's life both financially and because of the effects on the buyer's everyday life. Heating system can thus be regarded as a kind of purchase that requires a lot of information seeking by the buyer: the purchase is expensive, bought infrequently, risky, and also in a way self-expressive or tied to the buyer's personality (see, e.g. Kotler 1997: 190–192).

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The research data consist of 300 message threads related to heat pumps. The data were gathered from two Finnish discussion boards dealing with domestic heating and especially heat pumps. The discussion boards selected are *Lampopumput.info* and *Suomi24*, where participants discuss for example choosing, installing, using and fixing heat pumps. Suomi24 is one of the most popular websites in Finland (TNS Gallup 2013), and there is almost innumerable range of discussion topics. Lampopumput.info in turn is specialized in heat pumps. It requires registration from participants whereas Suomi24 allows them to write messages without registration and be completely anonymous.

In this study humor is defined as an incongruous comment that is recognized by the receiver as an attempt to amuse (see Morkes ym. 1999: 403). Also language play is included in humor. Humor supposes shared knowledge between humorist and audience. It is always possible that humor is not understood, because the recipient is ignorant of the suppositions underlying the message. Especially in fine irony, the recipient does not always understand whether the message is seriously intended or not. (Nash 1985: 4; 153) Thus it is also difficult for an analyst to identify some instances of humor and the result depends eventually the analyst's interpretation.

The method applied for the study combines theory-based and data-based approaches. The data was analyzed by reading carefully through all the opening messages of the data. The categories in the Fig. 1 were used as a tool for the analysis. The categories have been formed on the basis of the theories and literature described in the chapter 2. Paralinguistic cues were left out from the analysis because they are missing from the text-based communication.
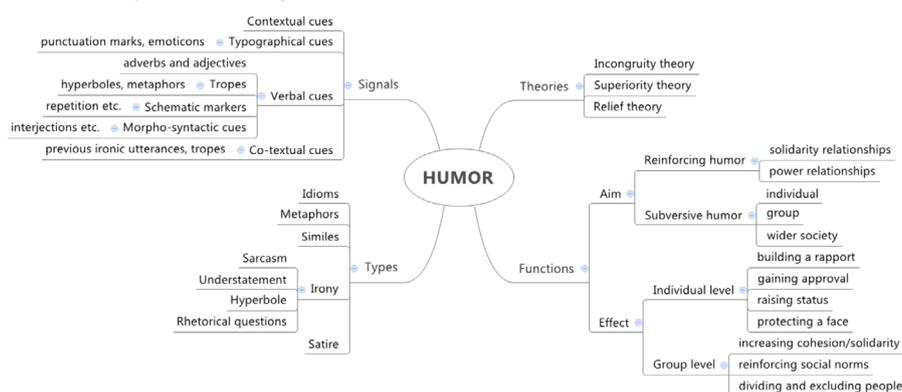
Figure 1: The categories for the analysis of humor

At the first stage the messages including humor were identified. The various signals of humor were utilized in identifying the instances of humor in the research data. At the next stage, the messages containing humor were analyzed in order to identify the type of humor used and the function of the humor in the message. The different theories of humor were applied in identifying the instances of humor and their functions. The messages were classified according to the function of the humor to reinforcing and subversive humor. Also functions on the individual and group levels were identified.

4. Findings

This chapter introduces examples of using humor in the opening messages of the research data. The chapter begins with examples of reinforcing humor that aims at building a rapport, giving a friendly image of the writer and gaining good relationships to other participants. The next sub chapter scrutinizes examples of subversive humor that aims at questioning or criticizing the prevalent situation. Humor was used in 61 opening messages of the total 300, which means one fifth of the messages (20 %). There was no difference between the two discussion boards in the amount of humor in opening messages (Lampopumput.info: 30, Suomi24: 31).

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4.1. Reinforcing humor

Reinforcing humor has a function of maintaining and reinforcing the prevalent situation. It typically aims at building a rapport, giving a friendly image of the writer and gaining good relationships to other participants. In example 1, self-deprecating humor creates a polite image of the writer. It shows that he appreciates the experts on the discussion board and their knowledge. The examples have been translated from Finnish to English. Punctuation is marked according to the original texts.

(1) **Ultimate 5500 + Böro 320 sufficiency?** *(Newcomer, 2 messages)*

Hi, I'm writing here for the first time and I don't really have any deeper knowledge about these devices. [the question]

I have tried to read a little bit about the subject, but I can't get all kinds of gas loops etc. into my head 😊 [...]

The writer is a newcomer on the board, which emphasizes his need to get approval. There is a special term "gas loop" in the message and otherwise it is written in standard language. A winking emoticon is used as an extra-linguistic cue of humor. The humor of the message emerges from the commonly known fact, that the technology related to heat pumps is complicated and not usually comprehensible to a layman. In example 2, the writer also makes himself the butt of a joke.

(2) **Curtain track casing beside the indoor compartment** *(Newcomer, 1 message)*

[…] The pump was installed on the wall, where there is a kind of a casing up by the ceiling, which is about 15cm deep and about 20cm high. […]

Yesterday I started in the traditional Finnish way doing first and thinking later..

[the question]

The humor in the message is based on common cultural knowledge, according to which especially Finnish people tend to start doing without thinking, which in turn may lead to mistakes.

Also irony was used in the opening messages of the research data. In example 3, the writer describes the house he has bought and states that he wants to lower the heating costs by means of additional insulation and air source heat pump.

(3) **Air source heat pump to a hillside house** *(Unregistered user)*

Greetings, so I just bought a hillside house of about 192 square meters with electric heating built in 1990.. Oh, I will enjoy the electric bills so much, but anyway*, I would now like to lower the heating costs already in the moving stage (within 2 months), so besides additional insulation I thought about an air source heat pump, where can I get _up-to-date_ information about which ASHP would be suitable for my house? […]

* Original in English

The writer states ironically that he will enjoy the electric bills. It is obvious that the writer means exactly the opposite he says, as based on the other parts of the message it becomes clear that the electric bill will be high, which causes the payer more probably harm than pleasure. The humor is based on the fact known within the special field that the type of buildings described in the message consume a lot of energy and on the other hand the commonly shared experience of the annoyance caused by high electric bills.

In example 4, the humor is based on the common experience that the loud noise from the neighbor can be very irritating, which in turn can in some cases lead to big conflicts between neighbors.

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(4) **How long has the compressor endured?** *(Newcomer, 8 messages)*

> I would be interested to know how long the compressor in an awhp* has endured? I have a 3,5 year old Ulti 9000E (Copeland compressor?) squealing so that it had to be shut down to prevent a neighborhood war. […]
>
> * Air–water heat pump

Here a hyperbole is used as a means of humor, for the sound of the broken compressor is very unlikely to be loud enough to start a big conflict.

4.2. Subversive humor

Subversive humor typically aims at questioning or criticizing the prevalent situation. In example 5 the writer questions the installers of the air source heat pumps.

(5) **(outdoor)air radiator a.k.a. Do-it-yourself-ASHP …** *(Registered user)*

> ... but can be changed to cool down the interiors in the summer. [the description of the device] the device wishes farewell to the ASHP-installation mafia? […]

The questioning is done by referencing to the installers of the air source heat pumps with the expression "ASHP-installation mafia". By juxtaposing the installers to the mafia, the writer creates an image of them as a unified group, organization or conspiracy, which aims to gain profit in questionable means.

In example 6 the target of the humor is *The Geological Survey of Finland* and its project, in which it starts mapping the best geothermal areas in Finland.

(6) **Searching for a top-COP*** *(Active user, 861 messages)*

> GTK** starts mapping the best geothermal areas in Finland. Accordingly, the top performance is influenced by devices,adjusting,heatingnetwork,adjusting, discussion board,excel,adjusting,basiccube,minimuminsulation,adjusting and what everything there still is besides adjusting, also where in Finland the croft happens to be located! ;)
>
> [link to news]
>
> * Coefficient Of Performance
>
> ** The Geological Survey of Finland

As a cue of the humor the word "adjusting" is repeated several times and there is also a winking emoticon in the end of the clause. The humor is based on unexpected and incompatible things. The factors affecting to the top-performance that the writer has listed include unexpected elements, such as "discussion board", which give a humoristic impression, because they are incongruous with the reader's expectations. By the means of humor and comic the writer thus questions the sensibility of the project in question.

In example 7, humor is based on the fact commonly known on the board, that certain type of messages may be moved to so-called "hothead section". It refers to a special discussion area, which is made for the discussions that easily lead to fights, so that other discussions on the board would stay appropriate.

(7) **geothermal in apartment house, does it make any sense?** *(Active user, 1127 messages)*

> I'll try this here at first but it doesn't matter if this goes to the hothead section, the most important thing is that we talk about it 😁😁😁 […]

As a cue of the humor there are three subsequent "grinning" emoticons. The writer implies by means of humor that his message is somehow controversial and may thus irritate some readers causing a heated dispute. Humor also works as lightening the atmosphere and thus makes bringing up a potentially controversial topic more acceptable and safe.

In example 8, the writer describes his experiences of a geothermal heating system that has been installed in his apartment.

(8) **Geothermal heating was installed in a terraced house.** *("Disappointed", Unregistered user)*

> Now I know why switching to geothermal is economical. For two weeks now we have watched telly wearing quilted suits and hot water is as hot as 40 degrees in celsius.
>
> It pays off to get geothermal heating so you save a whole lot on electricity.

The writer uses irony, which shows in the mismatch between the different parts of the message. The writer's pseudonym "disappointed" describes his real state of mind. The expression *"For two weeks now we have watched telly wearing quilted suits and hot water is as hot as 40 degrees in Celsius"* is in line with the pseudonym, because the writer describes in it the apparent reasons for his disappointment. At the end of the message the writer states: *"It pays off to get geothermal heating so you save a whole lot on electricity"*, as if he was recommending geothermal heating, which is in conflict with his disappointment and the situation that he describes. The writer thus means exactly the opposite that he says.

Some of the opening messages attacked other groups. The humor targeted to other groups used for example the means of satire. In example 9, the writer pretends to be an owner of an exhaust air heat pump (EAHP) and in that way gets the exhaust air heat pump users seem ridiculous.

(9) **Face in the soot, but November ...** *PILPpppaaja ("EAHPuser", Unregistered user)*

> may just go under 1000kWh!! The fireplace has been blazed and we have been showing off to the neighbor that we're going merely with the EAHP* compressor ;c) Must light the fireplace always when the neighbor is at work, so that I won't get caught on lying. Direct-electric-neighbor is pissed off, because as much as 1300kWh was reputedly already spent this month.
>
> EAHP is an excellent gadget, as long as the face is in the soot and firewood is burning in the fireplace :c)
>
> * Exhaust Air Heat Pump

The writer for example portrays EAHP-users as liars that heat their house secretly with firewood, so that the poorness of their heating system would not be revealed. Also in example 10, the target of the humor are the owners of the specific heating system, in this time the users of the air source heat pumps (ASHP).

(10) **A horrible nightmare** *("Stephen Ping", Unregistered user)*

> I woke up in the morning to the rattle of the garbage truck,got off the bed and put on my thick wool socks that my wife made for me and walked silently to the living room,checked the thermometer, -15 outside and +18 inside,swearing I figured out that the ASHP was dead,no wonder I got to sleep until the visit of the garbage truck,muttering I put on the coat and dragged hot water in a bucket outside, poured the water on the ASHP outdoor compartment that had turned into an ice cube,I went back inside and turned on the ASHP and the familiar wailing noise rang out.I thought that I might turn up the floor heating but then I recalled the cost of electricity and gave up such a radical resolution. With numb fingers I loaded the fireplace full with firewood and lighted it,just when I was making coffee dark smoke started to push into the house from the fireplace, damn the WHRU-machine froze again and it began

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> melting by turning off the supply air fan, I opened the entrance door and the coming of the smoke stopped,I thought in my mind that I shouldn't have turned off those electric resistors from the WHRU machine, after half an hour WHRU was melted again.
>
> At last I got to enjoy the morning coffee and just then the alarm clock of the mobile phone started buzzing and I had time to think......I woke up and sat on the edge of the bed, gave a laugh and went to make the morning coffee, wasn't that a formidable nightmare fortunately I chose geothermal heating after all.

The writer uses satire and has put his statement of the heating system in a form of a narrative. The writer's pseudonym "Stephen Ping" refers to a famous horror novelist, Stephen King, and the heading "Horrible nightmare" also refers to horror stories. By using elements of a horror story the writer juxtaposes the life as an ASHP-user with a horror story or a nightmare. As a cue of the humor the writer uses hyperbole concerning the misfortunes and difficulties described in the message. At the end of the message the writer states: *"wasn't that a formidable nightmare, fortunately I chose geothermal heating after all"*, which makes clear his opinion and the message of the narrative. Satire is used also in example 11.

(11) **There is still neighborhood harmony** *("Neighbor support", Unregistered user)*

> My neighbor who has electrical heating sat on the stairs of his cabin looking sorrowful on an autumn day. When fetching the newspaper I asked him, where such a melancholy stemmed from: Well, he said that the electricity company had raised the electricity price and the increase would also concern the transmission charges so he wouldn't necessarily survive the upcoming winter. One bill had even gone to a debt recovery process because cubic meters of free firewood hadn't been burned daily.
>
> I myself have geothermal heating so I promised to help the neighbor in heating costs. I myself have so little heating costs that I promised to help in fetching free firewood and chopping them to the storage.
>
> The best thanks were though when the neighbor said that I had saved him from freezing to death. Free firewood is so rare anyway elsewhere but on the suomi24-discussion board.
>
> Let's take care of our neighbors and not just dig our own belly buttons!!!

The writer shows himself as a compassionate neighbor, who offers help to his neighbor, when he is gotten into trouble because of a poor heating system. In this way the writer emphasizes the superiority of his own heating system. As a cue of using humor is a hyperbole. The consequences of the heating system are exaggerated by stating for example that the neighbor was saved from *"freezing to death"*. At the end of the message the writer states that *"free firewood is so rare anyway elsewhere but on the suomi24-discussion board"*, which refers to the earlier messages on the discussion board.

In example 12 the targets of the humor are the opponents of heat pumps.

(12) **facts about compressor** *(Unregistered user)*

> i have followed with interest the discussion about heat-pumps and their compressors. the opponents of heat pumps appeal to the poor durability of the compressors and frighten others with expensive repairs. the fact is however that compressor has been invented already in the late 19th century and the apparatus is reliable nowadays. it just came to my mind that do the people that question the compressor store their food in a hole on the ground or if they dare to buy a refrigerator?

The writer aims at getting the opponents of heat pumps look ridiculous. At the end of the message he juxtaposes heat pump with refrigerator and suspicion of heat pumps with storing food in a hole on the ground. In this way he implies that opposing heat pumps is as outdated and uncivilized as storing food in a hole on the ground.

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5. Discussion

The opening messages of the research data included both reinforcing and subversive humor. Reinforcing humor was user in order to show goodwill and politeness towards the readers, establishing a common ground and building a rapport. The types and means of reinforcing humor included funny tropes, idioms and personification of technology. Also self-irony and self-depreciation were used. Many messages referenced to shared knowledge and experiences in order to establish common ground and build a rapport.

Subversive humor was used for questioning and criticizing things and attacking against other groups. It worked as conveying a feeling of superiority over another group or on the other hand conveying a negative or critical message in more appropriate form. The types of humor included for example juxtapositions, irony and satire, used for example in a form of a narrative.

Opening messages of the discussion boards usually aim at getting answers from the readers. Using humor in the opening message can serve this purpose and thus humor may have an instrumental function in the interaction of online community. Reinforcing humor may help to create a friendly and sympathetic image of the writer which in turn may increase the readers' motivation for answering the message. Subversive humor in turn may help to provoke discussions about controversial topics.

The humor in online discussions about a specialized technical topic is strongly tied to a topic of the discussion: almost all instances of humor in the research data were related to the specialized technical topic of the discussion. In these discussions humor is intertwined with the knowledge about the special field: understanding humor requires some knowledge about the topic and the aims of the humor also rise from the topic. In this case humor and communicating the information of the special field cannot be seen as contradictory areas, but humor instead has a role in conveying the knowledge of the special field.

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LSP of tourism: Ways of lexicographic description

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Abstract. The article presents an attempt to systematize the main parameters of the lexicographic description of tourism terminology. The analysis of the existing English printed and electronic dictionaries of tourism was carried out with special reference to lexicographic needs of various groups of users. The dictionaries were examined from the perspective of word selection criteria, possible ways of language material presentation in the corpus and characteristics of their mega-, macro- and microstructure. Investigation of a wide range of special texts on tourism belonging to different genres made it possible to build up external and internal logical-conceptual schemes of the domain under study as well as to describe semantic, syntactic and pragmatic characteristics of tourist terms to be fixed in the dictionary. The user perspective survey helped to define the information categories that potential consumers of lexicographic products – specialists in the tourism sphere, professionals-to-be, translators and interpreters – would like to find in the dictionary. The results of such a multi aspect study served as a basis for elaboration of the fundamental principles to compile a new dictionary of tourism.

Keywords. Dictionary of tourism, entry, languages for special purposes, logical-conceptual modeling, LSP of tourism, specialized discourse, term, terminological dictionary, tourism domain.

1. Introduction

The professional context in which the language of tourism is employed was not defined clearly until quite recently. This fact influenced the late acceptance of this language as LSP. Actually, the status of tourism itself as a separate field of academic research was established in the 70-s of the XXth century, and even now there is some ambiguity in its definitions and concepts. However, the existence of LSP of tourism as a professional language, different from any other LSP, is currently recognized, and there are a lot sufficient linguistic, economic, pedagogical and historical reasons to justify it.

Tourism is one of the world's largest generators of wealth and jobs, getting billions of dollars in revenue each year. Due to its importance for global economies, it is essential, from a pedagogical perspective, to provide the work-force with first-class professional training. And in this respect language is the key issue.

From a historical point of view, tourism activities are as old as time. Modern tourism, as we see it now, dates back to the second half of the XXth century. But travellers have always existed, and thus there has always existed a necessity for bilingual glossaries and dictionaries. There has always been a need for certain specific terminology; it began with the specialized terms related to travel and transport to a wider demand ranging from accommodation and facilities terms, to more specific vocabulary related with many subcategories (health, art, tourism management, law, geography, marketing, sport, climate, catering, entertainment, insurance, etc.). This vocabulary has not been stable throughout the history but has evolved at the same pace as the tourism industry, adapting to developments and to the discourse community needs. Specialized dictionaries and glossaries have also been adapted to these demands.

Tourism activities are essentially performed through communication, the tourist and the service provider being its two main participants, and the interpreter/translator being a mediator when necessary. In this respect the language is, on the one hand, a key that could open the doors to effective communication and, on the other hand, it might create an obstacle in the understanding of the specialized discourse.

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Understanding the type of language used in tourism business is a real challenge for the uninitiated – newcomers to the industry, students of tourism, or outsiders. It can be explained by both the vocabulary amounts (terminology, abbreviations, clippings, codes, professional jargon) and the difficult formal structures that are often created in numerous tourism genres, such as contracts, procedures, bookings, complaints, and guiding. (Speckens 2011: 133)

Scientists have been trying persistently to structure the given subject area. Lexicographic description of tourism terminology requires a thorough investigation both in the sphere of functioning and in the sphere of fixation. The first printed dictionaries of tourism date back only to the end of the last century; they are usually monolingual, encyclopedic texts that include definitions of central concepts of the subject field. Online tourism dictionaries appeared later as pdf-documents or web pages that gave simple lists of terms as well as their translations into one or more foreign languages. All these facts certify a wide demesne for lexicographers.

2. Sources of terminological dictionaries of tourism

It is a well-known fact that one of the primary tasks set before a terminological dictionary compiler is to specify possible dictionary sources. Traditional ones have long been the already existing reference books and written texts of the given domain. Special texts must meet certain requirements. While selecting texts, it is absolutely necessary to stick to the principle of complete and adequate coverage of special vocabulary of the subject field, as well as that of authenticity and chronology. Besides, types of texts must be user-oriented, and the communicative situation must be taken into consideration.

As established practice confirms, the sources of tourism terminological dictionaries are special textbooks, study guides and manuals, as they contain most of the key terms and their definitions. An important place in tourism terminology formation belongs to written documents of international tourism organizations (publications, conference proceedings, projects, statutes and charters). Nowadays there is a wide range of official websites of various tourism organizations (*World Tourism Organization; Travel & Tourism Research Association; World Travel & Tourism Council; National Tour Association*, etc.) which can enhance the possibilities for term selection.

Encyclopedic texts are provided in specialized encyclopedias, for example, Johri's *Encyclopedia of Tourism in 21st Century*; Speake's *Literature of Travel and Exploration: an Encyclopedia*; Pizam's *International Encyclopedia of Hospitality Management*; Fritze's *Travel Legend and Lore: an Encyclopedia*, etc.

Together with an increasing interest to tourism as a separate branch of knowledge there has considerably grown the number of periodicals on the topic. Special thematic journals that appeared in the 70-s of the last century (*Journal of Travel Research, Annals of Tourism Research, Tourism Management, Tourism Recreation Research, The Journal of Tourism Studies*) and online journals of today (*Tourism Review; Travel Daily News*) provide authentic texts on tourism – scientific articles, reviews and commentaries.

Tourist brochures, booklets, traditional printed and multimedia travel guides, official tourism portals of various countries and blogs that unite tourism-lovers are additional but by no means less significant dictionary sources.

Investigation of such a variety of special texts of different genres having their own stylistic peculiarities makes it possible to build up a logical-conceptual scheme of the domain as well as to describe to the fullest semantic, syntactic and pragmatic characteristics of tourism terms to be fixed in the dictionary. Since the quality of a dictionary is directly subject to the range of sources it is based on, it is absolutely necessary to provide a terminological dictionary with a list of sources that might help the user to estimate terms authoritativeness and currency.

Unanimously recognized criteria for term selection are those of frequency of their use, precision/ unambiguity of the term meaning, and combinatorial stability.

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3. Logical-conceptual modeling of tourism domain

Logical-conceptual analysis of a certain sphere of scientific knowledge is an obligatory condition to reduce subjectivism in dictionary making.

Inclusion of a logical-conceptual scheme as an appendix into the dictionary megastructure is gradually but persistently becoming a must for terminological dictionary compilers, a fine example of that kind being the work of Finnish terminographers. It might help to enlarge the user's knowledge of the professional sphere and to estimate the dictionary quality.

Traditionally, two types of logical-conceptual scheme are distinguished: external based on the linkage of the given subject field with other domains and internal used to show interrelations between various subsections within the given subject area. Logical-conceptual schemes make it possible to evaluate the sphere that will be covered by the dictionary, its volume, and the quality of information presented in it.

Logical-conceptual modeling is necessarily accompanied by consultations with qualified specialists in the sphere, practitioners, teachers of 'International Tourism' courses at the universities, etc.

The external logical-conceptual scheme (Fig. 1) is built up to show that allied sciences and applied activities have a certain impact on the described domain. Tourism can never exist in isolation from other spheres of human activity. Thus it interacts with Economics, Politics, Advertizing, Publishing, Culture Studies, Education, Ecology, Sociology, to mention just a few.
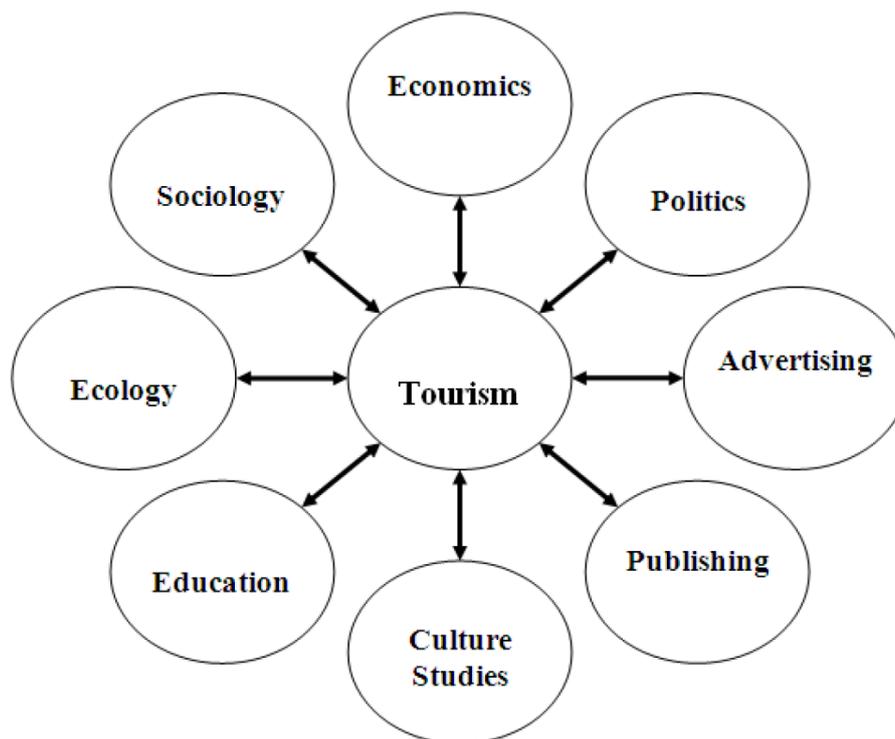
Figure 1: External logical-conceptual scheme of tourism domain

While elaborating an internal logical-conceptual scheme (Fig. 2), that helps to outline the borders of the lexis under study for its further lexicographic description, we proceed from the assumption that there are three main components in the structure of the tourism industry, namely subjects (specialists in tourism industry, providers of tourist services), objects (those to whom the subjects' activity is directed, i.e. consumers of tourist services, tourists, tourist groups) and contents (tourism industry with its services and products).

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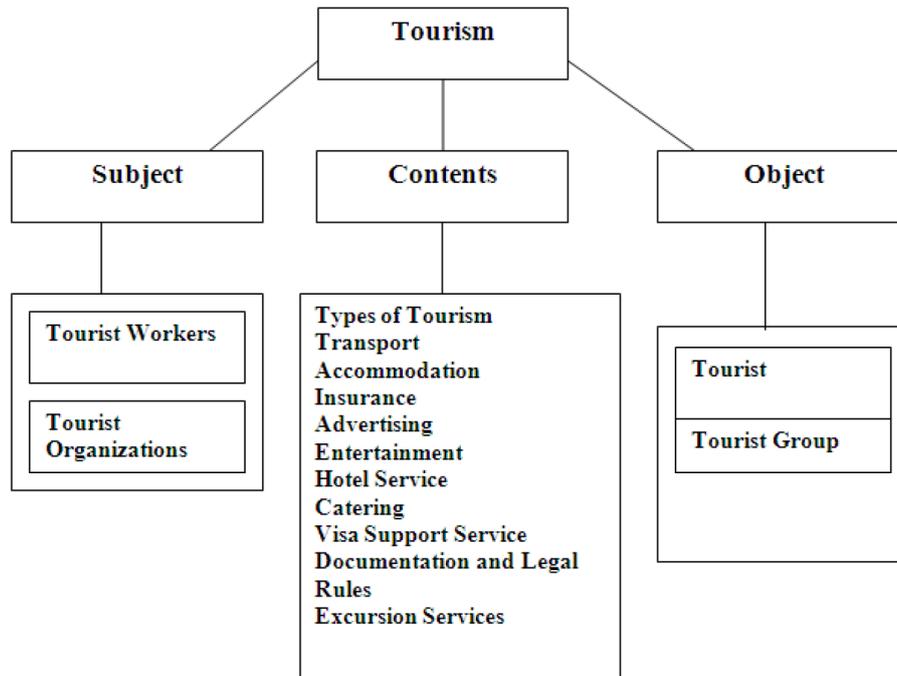
Figure 2: Internal logical-conceptual scheme of tourism domain

The internal logical-conceptual scheme can also be built up on the traditional principle of satellite modeling (Fig. 3).
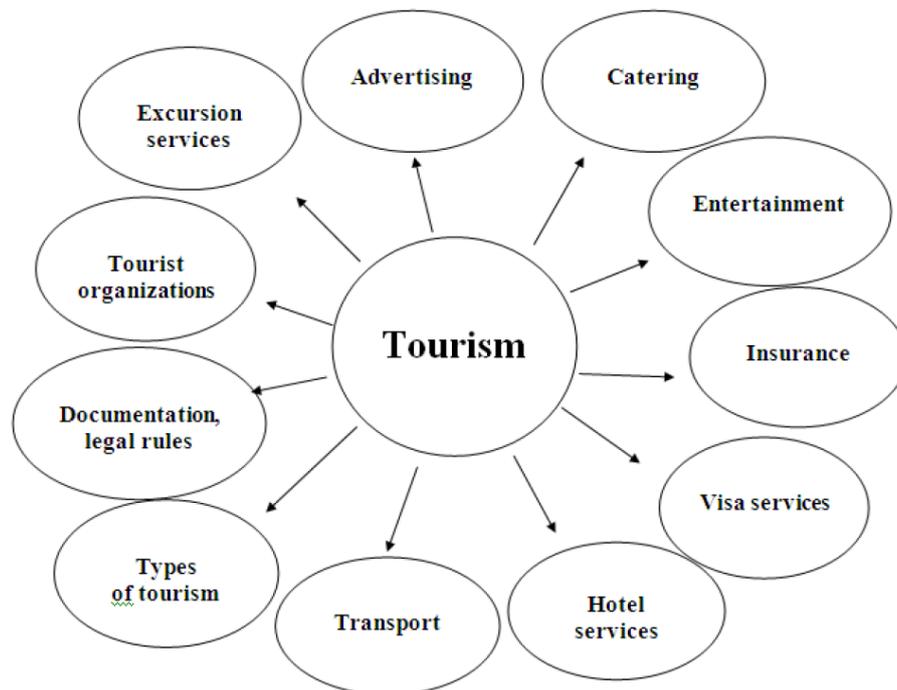
Figure 3: Internal satellite logical-conceptual scheme of tourism domain

The internal logical-conceptual scheme lets us make a conclusion that tourism lexicon consists of highly specialized vocabulary and words and expressions belonging to the general core vocabulary of the language but frequently employed in the given specialized field with an added specific sense.

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4. Prospective users of tourism dictionaries

Talking about prospective users of tourism dictionaries, we can easily single out four distinct groups:

- ○ specialists in the sphere (i.e. service providers),

- ○ translators/interpreters,

- ○ would-be professionals (i.e. students taking 'English for Tourism' or 'International Tourism' courses),

- ○ tourists as service consumers.

The first two groups mostly resort to terminological explanatory dictionaries that contain descriptive articles on travel and tourism concepts which cover a great spectrum of topics within the subject field (accommodation, visa service, insurance, transport, catering, etc.) as well as a wide list of appendixes. Since there are a great many of governmental and official bodies that lay down laws, rules and regulations applicable to tourism, dictionaries meant for professionals usually identify these organizations and professional associations (sometimes providing their contact information), sketch out their main functions and describe related terminology.

Some of the existing tourism dictionaries are designed to support the learning process in the wide-ranging nature and variety of tourism courses offered nowadays. Besides definitions accompanied – if needed – by graphic illustrations (pictures, diagrams, charts), they offer a repertoire of different labels (phonetic transcription, grammatical, functional, stylistic and regional markers), examples of contextual use of the word intended to help students to use the language in an appropriate way. Learner's dictionaries benefit from all sort of appendixes included in the dictionary megastructure: substantial listings of brands, acronyms and abbreviations that always cause problems for laymen, geographical information, models of documents and letter samples.

A-Z Handbooks as a certain lexicographic "genre" are perfect companions for students. Fully up-to-date, as a rule, they provide the latest information in a very user-friendly format. Basic terms are explained very clearly, fuller explanations of more ambiguous concepts help in doing homework and coursework assignments, detailed lists of key terms assist in test revision. Such handbooks resemble very much of a workbook with a vocabulary review section, a link area to interesting web pages, a grammar practice area and a systemic real-like situation tasks segment.

Both new entrants to tourism sphere and specialists in the professional area appreciate web-sites that can be featured in the entry of modern tourism dictionaries and a bibliography section containing an extensive list of reference sources enabling users to get more information on the topic.

Most of the existing lexicographic references on tourism are a fine example of combination of different dictionary types that can be helpful for all the above mentioned user groups regardless of the level of their proficiency in the sphere.

Tourists represent another – very specific – kind of dictionary users. This target group's needs differ to a great extent from those of professionals in the tourism industry. There are a number of sources lexicographically structured to satisfy their needs. These are mostly tourist guides with integrated glossaries, phrase books, online glossaries and dictionaries. All of these tools are pragmatically designed and offer the user specific assistance in certain social situations. They mainly aim at providing concise and understandable information on thousands of travel items and touristic places and might be effective for ordinary people when planning their vacation, choosing a hotel to stay at or an airway company to fly with.

Now we have a chance to witness the rise of a new tendency in treating tourism which is regarded as a powerful tool to promote knowledge. More and more people are seeking for tourism based on values, not on consumer services. A term "substantive tourism" appeared a short time ago,

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bearing the idea that tourism has an important potential to convey substantive information about cultural heritage to target audiences. New attitude to tourism gives birth to brand new types of user oriented dictionaries. In their want to obtain in-depth knowledge, tourists start searching for encyclopedic, intercultural and interlingual information. This necessitates compiling a novel type of dictionary, namely, "information-referential". (Alekseeva, Karpova 2010)

Compiling a dictionary for an industry as complex as tourism is an extremely challenging undertaking. However, there have been many attempts and some of them have turned out very successful. Within the limits of this article only some of the printed and electronic English language dictionaries can be mentioned with the aim to provide a reliable user-guide for both specialists in the sphere and would-be professionals.

- ○ Beaver, Allan (2005). *A Dictionary of Travel and Tourism Terminology* (2nd ed.). Oxon: CABI Publishing.

- ○ Collin, Peter (1994). *Dictionary of Hotels, Tourism and Catering Management*. Teddington: Peter Collin Publishing.

- ○ Dervaes, Claudine (1994). *The Travel Dictionary*. Tampa, Fl: Solitaire Pub. Inc.

- ○ Harris, Emma, & Bateman, Heather, & McAdam, Katy (2006). *Dictionary of Leisure, Travel and Tourism* (3rd ed.). London: A & C Black Publishers Ltd.

- ○ Harris, Robert, & Howard, Joy (1996). *Dictionary of Travel, Tourism and Hospitality Terms*. Melbourne: Hospitality Press.

- ○ Karpova, Olga (ed.) (2009). *Florence in the Works of European Writers and Artists: Encyclopedic Dictionary for Guides and Tourists: Project of a Dictionary*. Ivanovo: Ivanovo State University.

- ○ Medlik, Slavoj (2003). *Dictionary of Travel, Tourism and Hospitality* (3rd ed.). Oxford; Boston: Butterworth-Heinemann.

- ○ Metelka, Charles J. (1990). *Dictionary of Hospitality, Travel and Tourism* (3rd ed.). Albany, N.Y.: Delmar Publishers.

- ○ Nigam, Chandra (2006). *Dictionary of Tourism*. Delhi.

- ○ Torkildsen, George (1994). *Leisure Management A to Z: a Dictionary of Terms*. Harlow: Longman.

- ○ Youell, Ray (2003). *Complete A-Z Leisure Travel and Tourism Handbook*. London.

- ○ *The Tourism Dictionary Online* // URL: http://www.tourismdictionary.com (accessed 10.10.2013)

- ○ *Travel Industry Dictionary* // URL: http://www.hometravelagency.com/dictionary (accessed 10.10.2013)

5. Results of tourism dictionaries lexicographic analysis

The performed analysis of the existing English language printed and electronic lexicographic references from the perspective of the word selection principles, peculiarities of their mega-, macro- and microstructure let us systematize the main parameters of the lexicographic description of tourism terminology.

It's a noticeable fact that the majority of dictionary makers are neither professional lexicographers nor linguists at all; they are mostly specialist in tourism sphere, both practitioners and theorists.

Tourism dictionaries mostly explain common terminology used in the professional sphere and covering a wide spectrum of topics within the domain, such as transport, types of travelling, ticketing, hotels and staff, catering, health and safety, insurance, entertainment, visa support service and many others. Most of the terms are characteristic of English-speaking countries which can be easily explained by the beginning of a global bilingualism era and the fact that the

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English language knowledge becomes an indispensible component of a successful professional career; moreover, English is adopted as a working language of most international tourism bodies. However, tourism terminology is inevitably affected by other cultures as it is used by various linguistic communities to provide effective professional communication. Lots of non-English words are commonly used by tourism practitioners in Britain, North America and Australasia as tourism is inherently diverse, its laws, customs and practices varying greatly in each country. That is why major terms of non-English origin are obligatory for lexicographic description.

As the dictionary analysis (known as dictionary criticism in the world lexicographic practice) shows, priority is put to tripartite dictionary structure (introduction, corpus and appendixes) and traditional alphabetical order of entries. The compilers mainly focus on term definition, undeservingly narrowing down the repertory of possible labels. The most typical markers are orthoepic (phonetic transcription) and grammatical (part of speech indication) while stylistic, functional and regional are rather rare, if not random at all. Only a few dictionaries provide illustrative examples to the entry word, which is very important for those studying English as a foreign language since it contributes to better understanding of contextual use of the word. Some examples are given below.

(1) **guide** /gaɪd/ TOURISM *noun* **1.** somebody who shows tourists round a site or house ○ *Our guide took us into the castle chapel.* ○ *The guide to the museum spoke so rapidly that we couldn't understand what she was saying.* **2.** a guide book ○ *This is the best guide to the region.* ○ *You can get a small guide to walks round the town at the tourist information office.* ■ *verb* to show tourists round a site

(Dictionary of Leisure, Travel and Tourism, 2006)

(2) **add-on** US term for optional items that can be bought with a tour or other travel arrangements. For example, it may be as little as travel insurance or can be the rail or air fare to get to the start point of the main arrangement, such as a cruise.

(A Dictionary of Travel and Tourism Terminology, 2005)

(3) **fresh off the boat.** *Slang.* Just arrived in the country. A derogatory way of referring to a recent immigrant or any foreigner. Sometimes abbreviated FOB and used as a noun.

(Travel Industry Dictionary, 2009)

Many compilers include nomenclature units, i.e. names of various organizations or programmes, as well as toponyms, names of physical and political geography phenomena, words and word combinations describing cultural realities such as names of national dishes, holidays and traditions of certain countries.

(4) **Notting Hill Carnival** /ˌnɒtɪŋ ˈhɪl/ *noun* ENTERTAINMENT a big carnival held every year in August in Notting Hill, in the west of London ○ *Thousands of people take part in the Notting Hill Carnival every year.*

(Dictionary of Leisure, Travel and Tourism, 2006)

Sometimes cultural and encyclopedic notes are inserted which prove the general tendency for encyclopedization of the dictionary entry.

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Some dictionaries include terms from the sphere of leisure and sport, and even titles of these lexicographic references reflect it (*Dictionary of Leisure, Travel and Tourism*; *Leisure Management A to Z: a Dictionary of Terms*), treating sport as an integral part of leisure time.

In fact, word selection into the dictionary corpus depends on many factors, target audience and compilers' own preferences being among them. However, the latter seems doubtful as it leads to an unjustified enlargement of the dictionary corpus.

Acronyms and abbreviations are a stumbling block for non-professionals in the tourism industry. Each separate sphere of tourism business has its own set of conventionalized abbreviations that require special lexicographic description.

(5) **GDS.** *Abr.* Global Distribution System. *See also,*
      CRS, computerized reservation system.
      (Travel Industry Dictionary, 2009)

(6) **pppn** *abbreviation* HOTELS per person per night
      (Dictionary of Leisure, Travel and Tourism, 2006)

There is a new tendency about modern tourism dictionaries to include basic IT-terms into the corpus which can be explained by the introduction of certain innovations in the promotion of tourist products activity caused by revolutionary achievements in the IT-sphere.

(7) **application packages** Computer programmes tailored to handle the user's particular requirement, for example, preparation of an agent's sales returns. (A general technical term.)
      (A Dictionary of Travel and Tourism Terminology, 2005)

Professional texts are abundant in brands, often used without any indication of the corresponding organizations. They also find their reflection in dictionaries.

(8) **Amtrak** The brand name under which the National Railroad Passenger Corporation operates 265 US intercity passenger trains daily, under contract with individual railroads. Although operating over 22,000 route miles, it only owns
      (A Dictionary of Travel and Tourism Terminology, 2005)

It is considered good practice to include into the microstructure links to thematic Internet sites providing detailed information concerning related concepts.

(9) **APTG** Association of Professional Tourist
      Guides in the UK. *See* www.aptg.org.uk
      (A Dictionary of Travel and Tourism Terminology, 2005)

Most of the analyzed dictionaries clearly reflect the newest tendencies in the lexicography of the XXIst century, namely, creation of a new dictionary format by combination of various types of dictionaries, user's perspective study, and use of electronic data banks for dictionary making.

6. Conclusion

The language of professional communication – and LSP of tourism is by no means an exception – requires constant monitoring of its state, its conformity to the level of information transmission fidelity, and the univocal correspondence between concepts and designating terms. The whole complex of these requirements is ensured by terminology standardization which, in its turn, should draw on the analysis of the modern tendencies in the development of the given subject field.

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We cannot but admit that terminology will always be one jump ahead of lexicography. New times set new rules to dictionary making practices. The dictionary itself must constantly develop and upgrade itself. Its architecture must become more innovative, understandable, attractive, and friendly for the prospective user. It is worth mentioning again and again that lexicographic data must be specifically adapted to the user needs and competences. The factual, linguistic and even cultural competences of the intended users can greatly affect the way in which concepts should be explained and represented in dictionaries. Unfortunately, many existing dictionaries fail to provide the necessary help in communicative situations for many different reasons, one of them being the fact that they do not take into consideration that domain specific meanings can be culture- and structure-dependent. So there is still much to be done to fill in the gap in the lexicographic panorama of tourism domain.

The macrostructure of a new tourism dictionary offers the following approaches to the vertical organization of the middle matter of the dictionary. It must contain separate sections in accordance with autonomous aspects of the terminological field. Thus we can avoid the overload of the dictionary microstructure (i.e. each horizontal terminological entry) with information concerning the term aspectual attribution. The word-lists within the thematic sections are to be organized alphabetically.

The megastructure should present general information about the dictionary, its authors, and sources of terminology included in the dictionary corpus. The introduction must contain detailed, clear and at the same time very laconic verbal and graphic representation of logic-conceptual system of the described domain that will demonstrate the interplay of its autonomous parts as well as its connections with various allied disciplines. The main purpose of such inclusion is, on the one hand, to identify the place of tourism and its terminological system in the structure of the humanities knowledge and, on the other hand, to justify the thematic organization of the dictionary macrostructure. Lexicographic description of tourism domain in detail along with its logic-conceptual modeling makes it easier to establish the basic systemic connections in its terminology.

The microstructure should contain at least the following minimum of labels specified by the potential dictionary users as desirable: phonetic transcription; a grammatical marker to indicate the part of speech; a functional marker to point out a particular sphere of tourism industry; a regional marker to signal that a word is limited in use to one of the countries of the English-speaking world; a stylistic marker to show that a word is not part of the standard vocabulary of English. Verbal illustrative examples are to be supplied with the source of their borrowing which could be a link for further reading.

All in all, a tourism dictionary of a new generation must be more encyclopedically informative, more purpose- and user-oriented.

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Structure et temps verbaux des *Rapports Annuels* du *Médiateur de la République* française et du *Difensore civico* italien

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Abstract. This paper analyzes the structure and the verbal tenses of six *Annual Reports* (ARs) of the *Médiateur de la République* and of the *Difensore civico.* In particular, we will first focus on the two institutions with special attention to their legal context and their domain of action, in France and in Italy, respectively. We will then give a definition of the AR and highlight the similarities and the differences that emerge from the reading of this official document. ARs belong to a specialized official discourse since their author is an expert in law, their approval depends on an authority and their aim concerns the annual activity of an institution. The analysis of the verbal tenses of the six ARs of the corpus – two by the *Médiateur de la République* and four by two regional *Difensori civici* – demonstrates that the present tense is the most used verbal tense, with different and varied values. Finally, a detailed investigation of the present tense values will be integrated with a comparison of the real aims and targets the two institutions are addressed to when writing their AR.

Keywords. Médiateur de la République, Difensore civico, annual report, verbal tenses, present tense values, specialized discourse, popularizing discourse.

1. Introduction

La situation de crise économico-financière actuelle à laquelle doivent faire face plusieurs pays et plusieurs démocraties d'ancienne et de nouvelle constitution s'accompagne souvent d'une crise des valeurs. Celle-ci oblige à repenser l'État, mais aussi les institutions qui devraient protéger le citoyen, souvent victime d'une situation qu'il ne peut lui-même contrôler ni résoudre.

Cette contribution aborde le discours de la médiation, dont son objet, l'activité de médiation, s'inscrit dans le domaine plus général de la conciliation préventive. Celle-ci est gérée par plusieurs acteurs, parmi lesquels nous choisirons l'institution française du *Médiateur de la République* (MR) et son homologue italien, représenté par le *Difensore Civico* (DC). Ces deux institutions, dont l'origine remonte à l'*Ombudsman* des pays scandinaves du début du XIXe siècle, sont assez récentes. Plusieurs différences caractérisent ces deux figures, qui partagent cependant le rôle commun d'interlocuteurs, de tiers, entre les citoyens français/ italiens et l'administration publique.

À la fin de chaque année d'activité, les deux institutions sont chargées de rédiger un *Rapport Annuel* (RA) et de le soumettre à une autorité en vue de son approbation et de sa publication. Or, notre intérêt portera sur l'analyse de cette typologie de texte dans six RA, publiés en 2008 et en 2010. En particulier, nous étudierons la structure générale des RA et leur organisation interne, en nous concentrant sur le rôle rempli par les temps verbaux qui y figurent. Nous nous proposons ainsi d'identifier une typologie discursive du RA, pour vérifier si à la même dénomination générale de RA correspond une même typologie textuelle. Pour cela, nous irons à la recherche de possibles traits d'homogénéité entre la structure interne des RA et les temps verbaux employés, au-delà des distinctions importantes qui touchent au statut des deux institutions. Quant à l'analyse des formes verbales, outre un calcul fréquentiel, nous opèrerons une étude ponctuelle des valeurs sémantiques les plus récurrentes du présent de l'indicatif dans les différentes sections des RA. En effet, il est à notre avis possible d'isoler, au sein de chaque RA, des sections qui reviennent et

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qui nous font pencher pour la présence d'un modèle auquel le MR et le DC doivent se conformer pour rédiger leur RA. Enfin, à partir de cette analyse, nous essaierons d'inférer le type de relation qui existe entre le citoyen français/italien et le MR/ DC, autrement dit nous voudrions mesurer leur « distance » et la manière dont les deux institutions cherchent à la combler.

2. La Médiation institutionnelle au sein de l'UE et au niveau national

Au sein de l'Union Européenne, la figure d'un Ombudsman européen est prévue depuis 1979, mais n'a été instituée que par le Traité de Maastricht de 1992 et ensuite confirmée par l'article 228 du Traité sur le fonctionnement de l'Union Européenne de 2009. Ce médiateur supranational, depuis le 3 juillet 2013 en la personne de l'irlandaise Emily O'Reilly, est chargé d'améliorer les relations entre les citoyens et les institutions de l'UE, pour assurer que les citoyens et les résidents de l'UE connaissent et exercent leurs propres droits. À côté et au-dessous de cette institution, la plupart des pays membres de l'UE se sont dotés de médiateurs/ défenseurs civiques au niveau national. Au-delà des spécificités de chaque pays, ce type d'institution est toujours représenté par des sujets indépendants et impartiaux, qui, par le biais de la loi constitutionnelle qui est le propre de chaque pays, sont chargés de gérer les plaintes des citoyens sortant du cadre du mandat direct du Médiateur Européen, notamment contre l'administration nationale. Les médiateurs nationaux exercent un service gratuit et rapide, par saisie directe ou indirecte, efficace et en équité, respectant ainsi les principes de l'UE, inscrits dans la *Charte des médiateurs du service public*[1]. En outre, la présence d'un médiateur national auquel le citoyen peut s'adresser pour dénoncer un cas de mauvaise administration est une condition indispensable pour les nouveaux pays candidats à entrer dans l'UE. Une exception est cependant à signaler : l'Italie est le seul pays à être dépourvu de cette institution centrale. Il s'ensuit que cette spécificité italienne fait de ce pays un cas unique au sein de l'UE en matière de médiation, ce qui se répercute sur les institutions qui, dans ce pays, couvrent la figure du médiateur national.

2.1. Le *Médiateur de la République* et le *Difensore civico*

Le MR remonte à la loi française du 3 janvier 1973, qui instituait le cadre juridique de cette institution. Représenté par une personne physique, inamovible, le MR est nommé par décret du Président de la République et est aidé, lors de son travail, par une équipe de collaborateurs au niveau local. Ses missions concernent l'examen de l'inadaptation de textes ou de procédures et la proposition de solutions *ad hoc*, voire de réformes de fond, s'il en est besoin. Bref, il s'avère être un pont entre l'administration française et le citoyen et, de par sa mission réformatrice, il joue également "un rôle préventif et catalyseur de changement au sein des institutions ou des entreprises" (*Charte des médiateurs du service public*).

Suite à la révision constitutionnelle de 2008, le législateur a décidé d'insérer le MR au sein d'une institution plus vaste et au statut unique, celle du *Défenseur des droits* (DD). Dès le début de son mandat, le DD est chargé des missions qui étaient jadis le propre de plusieurs institutions, dont le MR : le Défenseur des enfants, la Commission nationale de déontologie de la sécurité (CNDS), la Haute autorité de lutte contre les discriminations et pour l'égalité (Halde), la Commission nationale de l'informatique et des libertés (Cnil).

Côté Italie, comme nous l'avons annoncé, une figure unique de médiateur national n'a pas été instituée, bien qu'un projet de loi existe depuis 2008. Pour cela, comme Sgueo (2010) le remarque, "l'esercizio delle funzioni di mediazione è declinato attraverso i diversi gradi dell'amministrazione pubblica, moltiplicando il numero di difensori civici per quanti sono i livelli territoriali di amministrazione" (p. 560). Ainsi outre le niveau régional des DC existent-ils au niveau des collectivités territoriales italiennes, les *province*. Cependant, pour la présente étude nous ne considérerons que les DC au niveau régional, qui figurent dans 14 régions italiennes sur 20. D'un point de vue législatif, la Toscane a été la première région italienne à se doter d'un DC, en 1974. Tout comme pour ce qui relève du MR, le DC, quel que soit son domaine d'intervention (régional ou *provinciale*), est "un auxiliaire qualifié en droit administratif, qui joue le rôle de

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médiateur entre citoyen et bureaucratie" (Conenna, De Gioia 2012 : 92). Nommé par le Président du Conseil régional ou *provinciale*, le DC est donc chargé de trouver une solution de conciliation entre deux parties.

Les traits des deux institutions que nous venons de présenter mettent en évidence que, derrière les spécificités du MR et du DC, nous avons affaire à un tiers entre deux parties, à un acteur de la vulgarisation, qui permet de passer du discours des spécialistes (l'administration publique) à celui du grand public représenté par les citoyens français/ italiens, pour qui il doit arranger son discours en le leur rendant accessible. Bien entendu, cela n'implique pas une propension du MR et du DC envers l'un ou l'autre pôle, puisque leur mission est exercée en termes d'impartialité et de neutralité, mais leur but principal est et reste la défense du citoyen contre tout abus ou dysfonctionnement de la part de l'administration publique.

3. La médiation et son discours

D'une manière générale, Fauche (2002) constate que, bien que le terme de médiation puisse être ambigu, "il a l'avantage de privilégier l'idée de « négociation » entre d'un côté, les savoirs scientifiques et techniques, et de l'autre un large public très divers" (p. 1). Or, dans le cas qui nous intéresse, les savoirs scientifiques et techniques coïncident avec la terminologie opaque et parfois cryptique des administrations, voire sont la source de malentendus et de confusions, alors que le public très divers est représenté par tout citoyen pouvant avoir éprouvé un sens de dépaysement ou de mise à l'écart, de négligence et d'erreur vis-à-vis d'une bureaucratie de plus en plus complexifiée. C'est pourquoi, de ce point de vue, la médiation devient un discours intermédiaire s'interposant entre un discours premier, émis par une source autoritaire, et un discours second qui en est la réénonciation. C'est au sein de ce passage qu'apparaît le médiateur, "« troisième homme » […] qui s'interpose entre le spécialiste et le public à seule fin de rendre possible la communication." (Jacobi 1985 : 2).

Dans le paragraphe qui suit et pendant tout l'article, nous essaierons de montrer que le MR/ DC joue exactement ce rôle, en reformulant des discours premiers et en les adaptant au citoyen français/ italien. À cet effet, le MR/ DC peut exercer son activité de communication et de reformulation en vue d'une explication par le biais des documents qu'il publie, dont le *Rapport Annuel* (RA) est sans doute le plus important par but et par cible(s) visée(s).

4. Le *Rapport Annuel* du MR et du DC

Le RA est un document officiel qui a le but de mettre en évidence le travail de médiation du MR/ DC pendant une année de référence. Il est pour cela soumis à une autorité avant son approbation et publication sur le site du MR/ de la région concernée pour chaque DC.

Relativement au RA du MR, il est rédigé par le MR et par ses collaborateurs au niveau local ; le MR doit l'envoyer, le 31 mars de l'année successive à l'année de référence du Rapport, au Président de la République. Ce dernier est chargé d'évaluer et d'approuver le travail de médiation de l'institution du MR et, donc, le RA, afin qu'il puisse être ensuite publié et devenir accessible sur le site du MR. Étant donné la fusion du MR au sein du DD, dont on vient de faire état, le dernier RA du MR date de 2010. Pour ce qui est de son contenu, le MR y est chargé de faire le point sur son activité annuelle, en détaillant ses axes d'action et en envisageant des mesures pour l'avenir à partir de l'actualité.

De même, chaque DC doit rédiger un document officiel spéculaire, dont le domaine d'application est cependant restreint à une région ou à une *provincia* italiennes. Par conséquent, le RA du DC régional est adressé au Président du Conseil régional, qui, de même que le Président de la République pour le MR, doit le valider avant de permettre sa publication sur le site de la région concernée. Les contenus de ce RA sont ainsi plus restreints que celui du MR du fait d'un domaine d'action plus limité, mais, au sein de son RA, le DC coordonne son activité avec le réseau des *Difensori civici* nationaux et avec le réseau européen, dont il fait partie. Les sujets

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abordés par le DC au sein de son RA portent sur son activité annuelle, sur ses domaines d'action au sein de la région/ de la *provincia* concernée.

Les traits généraux que nous venons de présenter vis-à-vis des RA du MR et du DC permettent sans doute de rapprocher ce document d'un discours scientifique officiel (Desmet 2004). Plusieurs facteurs concourent à pencher pour cette classification : de même qu'un texte de loi, le RA du MR /DC est rédigé par un spécialiste (dans notre cas, du droit) ; il est soumis à vérification par une autorité avant d'être approuvé et est constamment appuyé sur la loi. En outre, il s'agit d'un document à consultation libre : le portail du MR, désormais DD, tout comme celui de la région où le DC opère, permettent en effet de consulter, mais aussi de télécharger gratuitement l'intégralité des RA de l'institution. Or, le fait d'encadrer le RA au sein d'un discours scientifique officiel prouve que ce document est pourvu d'une langue spécialisée, "parlée par des locuteurs identifiables à leur rôle social par des éléments reliés à leur compétence" (Condamines, Rebeyrolle 1996 : 425). À cet effet, notre travail cherchera à rendre compte de ce caractère spécialisé du RA et à vérifier si et de quelle manière le MR/ DC s'en servira ou essaiera de le déchiffrer.

5. Le corpus

Notre corpus se compose de six *Rapports Annuels* concernant les années 2008 et 2010. En particulier, nous avons choisi des RA récents des deux institutions française et italienne, qui nous serviront comme échantillon pour appuyer des phénomènes macro- et micro-textuels. Parmi les six RA sélectionnés, deux relèvent du MR, les quatre autres des DC italiens. À ce propos, étant donné que l'institution du DC italien n'est pas unique, autrement dit nationale, mais qu'elle peut se référer soit aux régions italiennes soit au niveau *provinciale*, parmi les RA des DC régionaux, nous avons sélectionné ceux de deux régions italiennes. Il s'agit d'une petite région du Sud d'Italie, la Basilicate, et d'une région du Nord d'Italie, l'Émilie Romagne. Nous étudierons les RA des DC de Basilicate et d'Émilie Romagne de 2008 et de 2010, dans le but de comparer deux réalités locales italiennes et la réalité nationale française.

Les six RA ont été téléchargés dans leur version intégrale, depuis les sites hébergeant les deux institutions. La longueur des RA diffère d'une institution à l'autre : en moyenne, les RA du MR sont longs, chacun, de 80 pages, alors que les RA des DC italiens ont une longueur moyenne, chacun, de 150 pages environ. Quant aux critères employés pour le dépouillage des formes verbales au sein du corpus, notre examen a été limité aux formes verbales fléchies des textes des susdits documents.

La structure des RA du MR et des DC présente des traits similaires et d'autres qui sont le propre de l'institution concernée. Il est possible de résumer les principales sections des RA du MR et du DC comme suit :

RA MR	RA DC
Sommaire	Sommaire
Institution	Institution
Éditorial du MR	/
/	Présentation du RA et de l'activité du DC
Année en chiffres (activité MR)	Année en chiffres (activité DC)
Dossiers	Dossiers
Cas pratiques	Cas pratiques
Avis du MR	/
/	Activités complémentaires du DC
Gestion administrative et financière de l'année	/

Tableau 1: Structure des RA du MR et du DC

En termes généraux, au-delà du statut des deux institutions et des spécificités qui tiennent à leur contexte d'apparition, les six RA partagent une activité fondamentale, commune à tout Rapport

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Annuel : le fait de rapporter. Ce qui est témoigné, entre autres, par la dénomination même de
« Rapport ». Or, dans le cas des RA du MR et des DC, nous avons affaire à un compte-rendu
de l'activité de l'institution pendant une année de référence, dans lequel le MR/ DC montre son
action et son attitude vis-à-vis des affaires traitées pour obtenir l'approbation du susdit document
de la part de son autorité de contrôle. À cet effet, les deux institutions ont tendance à appuyer
toute action présentée par leur encadrement juridique, le renvoi à la loi étant pour elles une
preuve ultérieure de leur rattachement au droit et, par conséquent, de leur objectivité à l'égard
des affaires traitées.

Or, suivant la distinction bakhtinienne, reprise par Branca-Rosoff (1999), entre genres
« premiers », relevant de l'activité quotidienne, et genres « seconds », qui portent en revanche,
entre autres, sur l'activité sociopolitique, nous pouvons considérer les RA comme des genres
seconds. Pour ce qui est du classement des types de textes figurant dans chaque RA, tout en
rappelant que tout texte est a priori informatif, nous adopterons la répartition d'Adam (1992 ;
2005). L'auteur propose les cinq typologies suivantes : le narratif ; le descriptif ; l'explicatif ;
l'argumentatif ; le dialogal/ conversationnel, que nous essaierons de rapporter aux sections des
RA examinés.

Quant à l'examen des temps verbaux des six RA analysés, après avoir présenté un calcul réparti
par RA examiné, nous nous pencherons plus en détail sur le présent de l'indicatif, que nous
étudierons au sein des sections des RA.

6. Les temps verbaux des RA du MR et des DC

Le tableau 2 présente la répartition des temps verbaux (TV) des RA du MR et des DC et leur
calcul total par rapport aux RA de chaque institution.

	RA MR (2008 et 2010)	*RA DC* (2008 et 2010)	TOTAL
Présent	3169	2167	*5336*
Passé composé	806	930	*1736*
Imparfait	195	173	*368*
Plus-que-parfait	69	49	*118*
Passé simple	11	9	*20*
Passé antérieur	\	1	*1*
Futur simple	96	65	*161*
Futur antérieur	3	2	*5*
Conditionnel simple	103	66	*169*
Conditionnel composé	14	15	*29*
Présent (subjonctif)	148	234	*382*
Passé (subjonctif)	11	28	*39*
Imparfait (subjonctif)	1	43	*44*
Plus-que-parfait (subj.)	\	1	*1*
Aller + infinitif	11	\	*11*
Impératif	27	8	*35*
Total	*4664*	*3791*	*8455*

Tableau 2: Occurrence des TV des RA du MR et des DC

Les résultats du *parsing* quantitatif des temps verbaux des RA du MR et des DC font émerger
la présence ou, au contraire, l'absence de certaines formes verbales dans les deux langues
considérées. C'est le cas du manque, par exemple, d'occurrences de la périphrase futurale réalisée
par *aller* en italien, où en fait une périphrase en tout comparable à celle-ci n'existe pas. De
même, les temps du passé du subjonctif sont beaucoup plus fréquents en italien qu'en français,
étant donné que l'italien continue à se servir régulièrement des quatre temps appartenant à ce

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mode verbal, contrairement au français, qui tend désormais à réduire le subjonctif au présent et au passé. Au-delà de ces quelques remarques très générales, on peut constater que le « maître-temps » des RA est le présent de l'indicatif, dont la fréquence est de presque 60%, suivi du passé composé et du présent du subjonctif.

6.1. Le présent dans les RA du MR et des DC

Bien qu'il soit intéressant d'étudier la fréquence et les valeurs de chaque temps verbal dans les RA du corpus, pour la présente recherche nous devons restreindre notre domaine d'analyse au présent de l'indicatif. En particulier, nous mettrons en relief la manière dont il est utilisé dans les différentes sections des RA du MR et des DC et les différentes valeurs qu'il y remplit.

La première section qui retiendra notre attention porte sur la présentation de l'institution, qui figure, pour tous les RA recueillis, aux premières pages des susdits documents. Il s'agit d'un texte explicatif-informatif, qui présente la figure du MR/ du DC en rappelant sa création et ses fonctions. Pour ce faire, le MR/ le DC s'appuie constamment sur un cadre législatif de référence, dont la loi qui encadre ces institutions. C'est pourquoi la seule personne verbale qui figure est la 3ème, surtout du singulier, et le temps verbal presque unique y est le présent, dans une fonction atemporelle :

(1) […] [L]'institution du Médiateur de la République **est** une autorité indépendante qui **met** gracieusement ses compétences au service des citoyens […]. Il **traite** les litiges au cas par cas, **vérifie** si l'organisme d'une plainte s'est ou non conformé à la mission de service public dont il a la charge, **relève** les dysfonctionnements et **rétablit** les droits du requérant. (RA MR 2008 : 1)

(2) La Regione **assicura** al Difensore civico, non sottoposto ad alcuna forma di dipendenza gerarchica o funzionale, lo svolgimento della sua attività in condizioni di autonomia, libertà, indipendenza, efficacia e **provvede** a dotare gli uffici competenti delle adeguate risorse umane e strumentali. (RA 2010 ER : 8).

Comme ces deux exemples en témoignent, le MR/ DC se limite à citer ce que la loi émane quant à sa création et aux charges qui lui sont attribuées. Le texte apparaît donc extrêmement objectif et dépourvu de tout nuancement ou commentaire, puisqu'il est émis et réglé par une voix autoritaire, la loi. Cela est valable aussi bien pour le français que pour l'italien.

La deuxième section analysée concerne un texte des seuls RA du MR : l'éditorial du MR. De même que tout autre éditorial figurant au sein d'un journal, nous avons affaire à un texte à prévalence argumentative, dont le but est de faire émerger le point de vue de celui qui le rédige en termes de commentaire, voire de critique, vis-à-vis d'un événement d'actualité que l'auteur veut approfondir. Dans le cas des RA du MR, celui-ci part d'une situation qui l'a frappé dans le cadre de ses fonctions de médiation pour y réfléchir et exposer son opinion. Encore une fois, c'est le présent de l'indicatif qui prime sur tout autre temps verbal. Cependant, contrairement à la section précédente, ce temps est cette fois employé pour parler de l'actualité et du point de vue du MR vis-à-vis de l'événement énoncé. Pour cela, nous avons affaire à ce que Vet (2012) appelle l'interprétation par défaut du présent, que l'on peut relever dans l'exemple suivant :

(3) Notre contrat social **n'est pas** un contrat de services mais d'engagement. Or, aujourd'hui la citoyenneté **décline** des deux côtés : celui qui **paie** l'impôt a perdu la dimension citoyenne de l'impôt et, s'il y consent encore, **s'estime** néanmoins lésé. De même, celui qui **bénéficie** de la solidarité publique a perdu le sens de cette solidarité et, ne recevant pas assez, **se sent** humilié. […] Nous **devons retrouver** le sens de l'engagement, de la solidarité de proximité, du partage mais aussi du respect de l'Homme. Chaque citoyen **doit pouvoir être** coproducteur du futur. De même qu'il **faut éduquer** l'enfant en lui montrant son amour par le sens de l'interdit, il **faut éduquer** un peuple non par la satisfaction de ses désirs mais par le sens des responsabilités. Notre société **doit retrouver** le chemin des valeurs, sinon ses tensions internes seront suicidaires. Elle

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sera complètement bouleversée dans les quinze années qui viennent. (RA MR 2010 : 2).

À bien y voir, ce type de texte présente des séquences qui relèvent même de l'injonction, comme l'emploi des modaux *devoir* et *falloir* en témoigne. Cela est également prouvé par l'emploi des personnes verbales, qui sont la première du pluriel et la troisième du singulier, qui prend également la forme de l'impersonnel. Pour cela, il semble que, par ce texte, le MR veuille pousser à agir et indiquer la voie à suivre, en se servant, pour ce faire, du ton de l'ordre et d'une visée future, sous une formule du type 'agir dès le présent pour l'avenir'.

L'alternance entre un présent atemporel et un présent d'actualité caractérise une section que l'on ne retrouve que dans les RA italiens : la présentation du RA du DC. Par ce texte, le DC détaille l'organisation du RA : ainsi se sert-il de passages procéduraux, par lesquels il explique son activité de rédaction du RA. Nous avons donc affaire à un texte à visée explicative, où apparaissent également des renvois au cadre législatif de référence du DC. Le présent est donc utilisé dans sa valeur atemporelle lorsque le DC parle, en troisième personne pour se référer à la loi, des praxis établies qu'il a suivies lors de la rédaction de son RA. Quant, en revanche, à sa véritable manière d'opérer, le DC passe à la première personne du singulier :

(4)   **Presento** la relazione sull'attività svolta dall'ufficio nell'anno 2008 e da me direttamente seguita a partire dalla nomina del 22 maggio.

Art. 11 *Relazioni e pubblicità delle attività*

1.Il Difensore civico **invia** *entro il 31 marzo di ogni anno al Presidente del Consiglio regionale e al Presidente della Giunta regionale una relazione sull'attività svolta, corredata da osservazioni e proposte.*

La relazione **consiste** nella succinta trattazione dei punti in sommario indicati corredati, punto per punto, delle osservazioni e proposte ritenute opportune. La relazione stessa è integrata, a maggiore illustrazione, da allegati. (RA 2008 ER : 1).

Une autre section, commune à tout RA analysé, est représentée par l'énonciation des cas pratiques, par lesquels nous entrons dans le vif du travail du MR/ DC. En effet, on a ici affaire à un texte narratif avec une composante explicative, visant à mettre en évidence les actions menées par le MR/ DC en termes de médiation entre les citoyens et l'administration. En effet, le MR/ DC présente des cas de retards, de discriminations, de demandes non écoutées, d'impossibilité de communication, voire de non-action de l'administration vis-à-vis du citoyen, dans le but de rapporter une situation face à laquelle plusieurs individus pourraient se trouver. De ce fait, le MR/ DC élève le cas présenté à symbole de médiation, de manière à ce que le dysfonctionnement signalé ne se vérifie davantage. En outre, le MR/ DC a tendance à se servir de temps verbaux appartenant au discours plutôt qu'à l'énonciation historique (Benveniste 1966) pour relater ces événements, de manière à ce que le cas présenté devienne actuel. Le présent sera ainsi utilisé dans sa valeur historique, plongeant le fait raconté dans un présent fictif. Ce type de présent est cependant beaucoup plus fréquent dans les RA du MR que dans ceux des DC, qui tendent plutôt à utiliser des imparfaits avec une fonction narrative/ historique (Grevisse, 1986).

(5)   En 2009, un jeune homme **effectue** un changement d'adresse sur le site de Pôle Emploi. Il **respecte** strictement la procédure demandée en toute confiance. Pourtant, sa nouvelle adresse **n'est pas prise** en compte. Résultat, il ne **reçoit** plus ses indemnités. Pire : il **découvre** que n'ayant pas répondu à du courrier important, il **est radié** de Pôle Emploi. (RA MR 2010 : 40).

Les RA du MR présentent, après l'énonciation des cas pratiques, une section concernant l'avis du MR, où, suite à l'énonciation des problèmes dans lesquels les citoyens ont encouru vis-à-vis de l'administration, le MR identifie des pratiques erronées de la part de l'administration. En les dénonçant, il cherche ainsi non seulement à s'approcher du citoyen, mais surtout à lui inspirer de la confiance, par le biais d'un « consensus implicite ». Pour cela, le texte présente

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des sections explicatives et argumentatives, où le présent est utilisé pour rendre compte d'un dysfonctionnement signalé et critiqué par le MR, qui propose des modifications pour favoriser le citoyen. Ce présent est donc plongé dans la stricte actualité :

(6)   Un certain nombre d'élus, y compris des élus locaux, n'ont pas pris conscience du fait qu'ils **sont** porteurs du pouvoir de respecter la loi et de la faire respecter mais en aucun cas d'un pouvoir d'imposer leur loi. Le véritable enjeu, pour la société actuelle, **est** que tous ceux et celles qui **sont** porteurs d'une autorité **doivent prendre** conscience du fait que cela **n'est pas** un gage de supériorité mais de responsabilité. Aujourd'hui, la dimension statutaire de leur autorité **ne vaut rien** pour l'acceptation de cette autorité. C'est au contraire la dimension morale, exemplaire, éthique de cette autorité qui **fait** que les gens l'acceptent. C'est à ces conditions de respect de la loi par les élus qu'il y **a** un consentement à la loi par les citoyens. […] (RA MR 2010 : 31).

Enfin, nous nous intéressons à une section qui n'apparaît que dans les RA des DC: les activités complémentaires du DC. Comme cette dénomination en témoigne, ces textes sont consacrés à l'énonciation du DC d'activités ou d'événements auxquels il a contribué, tels que des documents législatifs supplémentaires ; des colloques ou séminaires auxquels il a participé ; des relations avec d'autres institutions au niveau local, national, européen et international ; des publications du DC. Cette section réunit ainsi des textes à visée surtout explicative-informative, qui ont le but de rapporter certaines actions et activités ayant eu lieu pendant l'année de référence du RA. Pour cela, nous assistons, outre l'emploi récurrent de la voix passive pour exposer ces événements, une utilisation du présent atemporel là où le DC s'appuie sur le cadre législatif de référence (alors que c'est au passé composé de relater les événements qui sont survenus), comme il résulte de (7) :

(7)   PROPOSTA DI REGOLAMENTO DELLA CONFERENZA NAZIONALE DEI DIFENSORI CIVICI REGIONALI E DELLE PROVINCE AUTONOME

Art. 1 Composizione

  1. **Fanno** parte di diritto della Conferenza nazionale dei Difensori civici delle Regioni e delle Province autonome i difensori civici regionali e i difensori delle Province autonome di Bolzano e di Trento.

  2. **Fanno** altresì parte della Conferenza Nazionale dei difensori civici un Difensore civico provinciale e due Difensori civici comunali per ognuna della seguenti aree: Nord-Ovest, Nord-Est, Centro, Sud e isole, coincidenti con le circoscrizioni elettorali del Parlamento Europeo. […] (RA DC Bas 2008 : 75).

7. Discussion et remarques finales

Nous avons présenté une analyse linguistique et contextuelle de la structure de six RA du MR et du DC, en nous concentrant sur l'emploi et la valeur des temps verbaux qui y figurent, et en examinant en détail le présent de l'indicatif, « maître-temps » de notre corpus. Le choix des RA a été basé sur leur publication récente et sur la possibilité de comparer deux institutions aux statuts différents mais aux fonctions similaires. L'analyse des RA susmentionnés a confirmé que cette typologie textuelle fait partie, d'après la classification de Desmet (2004), des discours officiels spécialisés. En effet, par typologie textuelle, un RA est un document législatif ; par auteur, il émane d'un spécialiste du droit, le MR/ DC ; par cible officielle visée, il est adressé à une autorité qui doit l'approuver et en permettre la publication. En outre, il est librement accessible par tout usager du web sur le portail du MR, désormais DD, et du Conseil régional de la région concernée pour ce qui relève des DC italiens. En termes généraux, sa consultation aisée et son intention de renseignement et d'accroissement des connaissances des usagers du web font du RA un texte adressé à un public hétérogène. Sa visée est surtout explicative-informative, bien que, comme nous l'avons mis en évidence, certains passages montrent une composante

argumentative et narrative. En effet, la répartition des textes des RA analysés a permis de relever que plusieurs textes et sections composent ces documents, qui sont parfois communs aux deux institutions, parfois spécifiques des RA du MR ou du DC.

Quant à nos intentions initiales, vouées à la recherche et à l'étude des temps verbaux des RA de notre corpus, nous avons constaté que le présent de l'indicatif est le temps le plus employé dans la plupart des sections du RA. Il s'agit également de la forme verbale la plus riche en valeurs remplies, comme nos exemples l'ont mis en évidence. Outre son interprétation par défaut (Vet 2012), par laquelle le présent signale l'actualité, avec ou sans marqueurs temporels *ad hoc*, par rapport aux RA analysés, ce temps verbal peut signaler une référence temporelle passée, tenant ainsi lieu d'un passé simple ou d'autres temps de l'énonciation historique, voire ne signaler aucune relation temporelle (présent atemporel). Ainsi l'emploi du présent au sein des deux types de documents est-il assez homogène, à quelques exceptions près, comme c'est le cas du présent historique. En effet, cet emploi est plus fréquent dans les RA français qu'italiens pour raconter des cas pratiques que le MR choisit d'élever à symboles de médiation, les rendant ainsi chronologiquement et psychologiquement (bien que fictivement) plus proches des citoyens français. Au contraire, c'est l'imparfait narratif qui semble prévaloir en italien relativement à cette même section. De plus, nous avons identifié des sections qui sont le propre des RA du MR et qui relèvent de l'argumentation, contrairement au but présumé d'un RA. Celui-ci viserait en effet à rendre compte de l'activité et des actions menées par une institution pendant une année de référence. Des séquences argumentatives apparaissent dans l'éditorial publié par le MR, qui figure aux premières pages du RA, et dans les encadrés appelés « Le regard du Médiateur », qui rapportent l'opinion du MR à propos d'un cas particulier de mauvaise administration en vue de trouver une solution au problème envisagé. Or, c'est au sein de ces deux sections que le présent d'actualité se teint de nuances ultérieures, oscillant entre la dénonciation et l'injonction. En effet, comme il résulte des exemples (3) et (6), le MR se sert du présent pour parler d'une situation présente qu'il est urgent de repenser, voire de modifier, en vue de l'améliorer. Des cas tels que ceux-ci signalent non seulement le fort engagement dont le MR se sent investi, mais surtout sa cible privilégiée, qui ne peut pas être identifiée seulement par le Président de la République, mais qui relève sans doute de l'ensemble des citoyens et de tous ceux qui peuvent accéder au RA. D'où une distinction fondamentale entre le RA publié par les DC italiens, qui rentre dans le domaine « traditionnel » du compte-rendu d'activité de fin d'année, et celui qui est le propre de l'institution française. En effet, ce document, outre les traits typiques du RA, y mêle des éléments supplémentaires, qui en font un texte beaucoup plus complexe et diversifié. De par ces caractéristiques, on peut enfin avancer que le RA du MR est un texte fortement vulgarisateur, où des sections plus « fermées » (les lois) s'alternent avec des sections entièrement « ouvertes », alors que, dans son RA, le DC ne laisse pas transparaître d'intentions divulgatrices, en présentant ses actions de manière neutre et objective et en donnant ainsi lieu à un texte plutôt « fermé ».

8. Notes

[1] http://media.education.gouv.fr/file/86/7/867.pdf, dernière consultation le 7 novembre 2013.

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Normative Terminologie im russischen Bildungsrecht

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Abstract. The peculiarity of the language of law is that it can be applied to various spheres of human activity. This feature distinguishes it from other sublanguages referring to particular areas (chemistry, geology, etc.) due to the usage of their own special vocabulary, mostly special terms. The essence and clarity of the law is one of the cornerstone principles of its proper application. The judicial text should contain legally, logically and linguistically relevant statements. Only in that case it would be appropriate for all persons whose rights and / or obligations it concerns. The scope of social, political and economic changes in Russia has influenced the development of modern Education law and contributed to certain innovations in its conceptual and terminological systems. Despite some attempts to adjust the terminology describing the Education law in Russia to the international legal practice the thorough analysis of current legislation shows immaturity and inconsistency of the applied conceptual framework, the existence of lacunae of the basic terms. It happens due to the fact that the language characterizing the sphere of Education law is not specialized, and common words frequently function as normative terms. Therefore, to work out the problem the following tasks are to be achieved: to make an inventory and systematize both traditional and new terms, to determine the level of its termhood, to analyze the relations inside terminological system, to limit the number of items in the terminological array, to make a brief classification of definitions, to remove of intersectoral and intrasectoral categorial ambiguity.

Keywords. Definition, education law, structure of definition, term systematizing, terminology.

1. Einleitung

Die Veränderung der gesellschaftspolitischen und Wirtschaftlichen Bedingungen hat die Entwicklung des modernen Bildungsrechtes in Russland beeinflusst und die Veränderungen in seinem Begriffsapparat bedingt. Die Umstrukturierung des russischen Bildungssystems erfolgte auf Grund kritischer Reflexionen zur aktuellen Bildungslandschaft und Notwendigkeit, sich an das europäische Modell anzupassen. Am 1. September 2013 tritt das neue Bildungsgesetz der Russischen Föderation in Kraft, das die Gesetze „Über die Bildung" von 1992 und „Über die universitäre und postgraduale Ausbildung" aus dem Jahr 1996 ersetzt.

Das neue Gesetz bringt Veränderungen in allen Bereichen der schulischen Bildung, der Berufsausbildung, sowie im Hochschulwesen mit. Die moderne Tendenz ist die Angleichung von Universitäten und Fachhochschulen durch den Bolognaprozess. Die umfassenden Gesetzesänderungen haben vor allem terminologische Änderungen nach sich gezogen.

Ziel der vorliegenden Arbeit ist es, die Terminologie im Bildungsgesetz unter dem Aspekt der inhaltlichen und formalen Anforderungen an eine richtig formulierte Definition zu betrachten, denn die Art und Weise, wie die Bestimmungen der verwendeten Termini in den Text des Gesetzes eingeführt werden, spielen eine wichtige Rolle. Die Architektonik der Begriffsbestimmung muss jedem Interessierten die Möglichkeit geben, alles zu verstehen, was für eine konsequente und effektive Arbeit mit einem bestimmten Terminus notwendig ist. Wir haben in unserer Forschung analysiert, wie juristische Kategorien bei der Formulierung von Definitionen sprachlich umgesetzt worden sind und welche Definitionstypen nach linguistischen Gesichtspunkten unterschieden werden können.

2. Definitionsarten im russischen Bildungsgesetz

Aus zahlreichen Arbeiten ist bekannt, dass die Schlüsselelemente des Gesetzes das eindeutige Konzept darstellen und deutlich definiert sein sollen. Dieser Forderung entsprechen völlig die hyperonym-hyponymischen Definitionen, die für Gesetze und normative Dokumente typisch sind, und meistens in der Fachliteratur vorkommen. Dieser Typ der Definitionen kennzeichnet sich durch die Genauigkeit und die Fähigkeit, den definierten Begriff von den ähnlichen und vergleichbaren Begriffen abzugrenzen. In den hyperonym-hyponymischen Definitionen werden Oberbegriff und Unterbegriff angeführt, die die Bedeutung des Terminus identifizieren und erklären lassen:

(1) Каникулы - плановые перерывы при получении образования для отдыха и иных социальных целей в соответствии с законодательством об образовании и календарным учебным графиком; (ст.34.п.11.) [die Ferien sind die planmäßigen Pausen in dem Bildungsprozess für die Erholung und andere soziale Ziele in Übereinstimmung mit dem Bildungsgesetz und dem Lehrzeitplan; (Art. 34.Abs.11.)] (Hier und weiter wird das Bildungsgesetz der Russischen Föderation „Федеральный Закон от 29.12.2012 N 273-ФЗ „ОБ ОБРАЗОВАНИИ В РОССИЙСКОЙ ФЕДЕРАЦИИ" zitiert.)

(2) Образовательная организация обладает автономией, под которой понимается самостоятельность в осуществлении образовательной, научной, административной, финансово-экономической деятельности, разработке и принятии локальных нормативных актов в соответствии с настоящим Федеральным законом, иными нормативными правовыми актами Российской Федерации и уставом образовательной организации (ст.28. п.1.) [Die Ausbildungsorganisation verfügt über die Autonomie, unter der die Selbstständigkeit in der Verwirklichung der Ausbildungs-, wissenschaftlichen, administrativen, finanzökonomischen Tätigkeit, der Entwicklung und Annahme der lokalen normativen Akte in Übereinstimmung mit dem gegenwärtigen Bundesgesetz und anderen normativen Rechtsakten der Russischen Föderation und dem Statut der Ausbildungsorganisation verstanden wird (Art. 28 Abs. 1.)]

Die Analyse der Gesetzartikel hat gezeigt, dass das Merkmal in einigen definitorischen Sätzen nicht durch den Gattungsbegriff, sondern durch einen allgemeineren Begriff ausgedruckt ist. Im 3. Beispiel ist der Begriff „Person" kein Gattungsbegriff, deswegen verliert die Bestimmung an der Genauigkeit:

(3) педагогический работник - физическое лицо, которое состоит в трудовых, служебных отношениях с организацией, осуществляющей образовательную деятельность, и выполняет обязанности по обучению, воспитанию обучающихся и (или) организации образовательной деятельности; (ст.2.п.21.) [die Lehrkraft ist die natürliche Person, die in der Organisation tätig ist, die die Ausbildungtätigkeit ausübt, und die Pflichten im Bereich der Ausbildung, Erziehung von den Lernenden und (oder) der Organisation der Ausbildungtätigkeit erfüllt; (Art. 2.Abs.21.)]

In den Bestimmungen, die durch die verallgemeinernden kategoriellen Begriffe ausgestaltet sind, wird der Anspruch an die Genauigkeit im wesentlichen durch die Anwendung von Umschreibungen oder Aufzählung derjenigen Eigenschaften, die dem Definiendum zugeschrieben werden, was die Definitionen weniger abstrakt und daher möglicherweise leichter verständlich macht:

(4) обучение - целенаправленный процесс организации деятельности обучающихся по овладению знаниями, умениями, навыками и компетенцией, приобретению опыта деятельности, развитию способностей, приобретению опыта применения знаний в повседневной жизни и формированию у обучающихся мотивации получения образования в течение всей жизни; (ст.2.п.3.) die Ausbildung ist ein zielgerichteter Prozess, der die Tätigkeit der Studierenden für den Erwerb von

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Kenntnissen, Fähigkeiten, Fertigkeiten und Kompetenzen, sowie Tätigkeitserfahrung, für die Entwicklung von Fähigkeiten, Erfahrung bei der Anwendung der Kenntnisse im alltäglichen Leben und Entwicklung der Motivation zum lebenslangen Lernen bei den Studierenden organisiert; (Art. 2.Abs.3.)

Zu bemerken ist, dass die hyperonym-hyponymischen Bestimmungen im Text des russischen Bildungsgesetzes selten vorkommen. Die meisten Termini werden durch andere Typen der Begriffsbestimmungen semantisiert, zum Beispiel, durch Part-Whole-Definitionen, in denen Termini durch solche Begriffe wie „Komplex", „Gesamtheit", „Einheit", „Teil" bestimmt werden:

(5) образовательная программа - комплекс основных характеристик образования (объем, содержание, планируемые результаты), организационно-педагогических условий и в случаях, предусмотренных настоящим Федеральным законом, форм аттестации, который представлен в виде учебного плана, календарного учебного графика, рабочих программ учебных предметов, курсов, дисциплин (модулей), иных компонентов, а также оценочных и методических материалов; (ст.2.п.9.) [das Bildungsprogramm ist eine Gesamtheit der Hauptcharakteristiken der Ausbildung (Umfang, Inhalt, voraussichtliche Ergebnisse), der organisations-pädagogischen Bedingungen und für die Fälle, die von diesem föderalen Gesetz vorgesehen sind, der Attestationsformen, die als Lehrplan, Lehrzeitplan, Arbeitsprogramme, Lehrfächer, Kurse, Studiendisziplinen (Module), andere Komponenten, sowie Bewertungs- und methodische Materialien dargestellt sind; (Art. 2.Abs.9.)]

Zu den im Bildungsgesetz besonders häufig vorkommenden Definitionsarten gehören u.a. die beschreibenden Definitionen, die keinen Oberbegriff, sondern die Aufzählung der semantischen Merkmale vom definierten Begriff enthalten. Die beschreibenden Definitionen können auch eine große Zahl der allgemeinwissenschaftlichen und der allgemeingebräuchlichen Wörter enthalten, die den Begriff erläutern. Die beschreibenden Definitionen werden meistens als erweiterte Sätze mit gleichartigen Satzgliedern formuliert. Für diese Definitionsart ist eine freie stilistische Gestaltung typisch:

(6) Инновационная деятельность ориентирована на совершенствование научно-педагогического, учебно-методического, организационного, правового, финансово-экономического, кадрового, материально-технического обеспечения системы образования и осуществляется в форме реализации инновационных проектов и программ организациями, осуществляющими образовательную деятельность, и иными действующими в сфере образования организациями, а также их объединениями. (ст.20.п.3.) [die innovative Tätigkeit ist auf die Vervollkommnung der wissenschaftlich-pädagogischen, didaktischen, organisatorischen, rechtlichen, finanziellen, ökonomischen, logistischen und Kader-Versorgung des Bildungssystems gerichtet und wird in Form von den innovativen Projekten und Programmen realisiert, die von den Bildungsorganisationen und anderen im Bereich der Bildung agierenden Organisationen, sowie ihren Vereinigungen verwirklicht werden. (Art. 20.Abs.3.)]

Im Bildungsgesetz der Russischen Föderation kommen ziemlich oft die aufzählenden Beschreibungen vor, die eine Liste von Beispielen enthalten und Bestandsdefinitionen, in denen alle unter einen Begriff fallenden Sachverhalte angegeben werden:

(7) Государственная регламентация образовательной деятельности включает в себя: 1) лицензирование образовательной деятельности; 2) государственную аккредитацию образовательной деятельности; 3) государственный контроль (надзор) в сфере образования. (ст. 90. п. 2.) [Die staatliche Reglementierung der Bildungstätigkeit schließt ein: 1) die Lizenzierung der Bildungstätigkeit; 2) die staatliche Akkreditierung der Bildungstätigkeit; 3) die staatliche Kontrolle (die Überwachung) in dem Bildungsbereich. (Art. 90. Abs.2.)]

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Im vorliegenden Beispiel (7) hat die Aufzählung zwei Funktionen: erstens, die illustrative Funktion, die gute Vorstellung von dem Begriffsumfang gibt, und zweitens, die bedeutungsunterscheidende Funktion, die verhindert, dass Nichtjuristen die staatliche Reglementierung entweder ausschließlich mit der Kontrolle oder mit der Lizenzierung verbinden.

3. Fehler bei der Definierung der Fachwörter im Bildungsgesetz

Das Begriffssystem des Bildungsrechtes in Russland ist nicht ausreichend geordnet, wovon die unausgefüllten begrifflichen Lücken zeugen, z.B. nicht definierte Schlüsseltermini, wie der Bachelor, der Magister, das einheitliche Staatsexamen, die hervorragenden Fähigkeiten, die Ausbildungsbedürfnisse u.a.:

> (8) Особенности организации и осуществления образовательной деятельности по основным и дополнительным образовательным программам для граждан, проявивших выдающиеся способности, а также граждан, добившихся успехов в учебной деятельности, научной (научно-исследовательской) деятельности (ст.77. п.4.) [Die Besonderheiten der Organisation und der Bildungstätigkeit in den Haupt- und zusätzlichen Bildungsprogrammen für die Bürger, die die hervorragenden Fähigkeiten haben, sowie Bürger, die gute Leistungen im Studium, in der Wissenschaft (Forschung) haben (Art. 77. Abs.4.)

Die Prägnanz und die Verständlichkeit des Gesetzes sind eine der Prioritätsprinzipien seiner Anwendung. Deshalb soll der Gesetztext sachkundige Abfassungen enthalten, die juristisch, logisch und sprachlich richtig formuliert sind. Das ist die unerlässliche Voraussetzung der leichten Fassbarkeit für alle, wessen Rechte und Pflichten von diesem Gesetz bestimmt sind. In der Tatsache aber, verweisen viele Textstellen zu den externen Dokumenten:

> (9) …имеет право утверждать административные регламенты предоставления государственных услуг, если данные регламенты … разрабатываются с учетом требований к регламентам предоставления федеральными органами исполнительной власти государственных услуг и исполнения государственных функций. (ст.7. п.8) [… hat Recht die administrativen Vorschriften zur Gewährleistung der staatlichen Dienstleistungen zu bestätigen, wenn diese Vorschriften … unter Berücksichtigung der Forderungen zu den Dienstordnungen zur Gewährleistung von den föderalen Organen der exekutiven Gewalt der staatlichen Dienstleistungen und der Ausführung der staatlichen Funktionen entwickelt werden. (Art. 7. Abs. 8)]

Einige Definitionsformulierungen des Bildungsgesetzes erfordern eine Verbesserung, denn sie sind auf den Termini basiert, die im Vortext nicht definiert und nicht eingeführt sind, obwohl die Definition bekannte, bereits definierte oder als ausreichend klar angenommene Grundbegriffe enthalten muss:

> (10) При реализации образовательных программ организацией, осуществляющей образовательную деятельность, может применяться форма организации образовательной деятельности, основанная на модульном принципе представления содержания образовательной программы (ст.13.п.3.) [Bei der Realisierung der Bildungsprogramme von der Organisation, die die Ausbildungstätigkeit ausübt, kann die Form der Organisation der Ausbildungstätigkeit auf dem modularen Prinzip der Inhaltsdarstellung des Bildungsprogramms gegründet werden. (Art.13.Abs.3.)]

Zu den weiteren fehlerhaften Formulierungen gehören synonymische Definitionen. Es kommen im Bildungsgesetz Termini vor, die für die Sprachträger schwer zu unterscheiden sind, denn sie werden wegen ihrer Struktur als Synonyme wahrgenommen. So sind die Organisationen, die Ausbildungstätigkeit ausüben, im Gesetz als Ausbildungsorganisationen definiert, die in demselben Gesetzartikel als „nicht kommerzielle Organisation, die auf Grund der Lizenz die Ausbildungstätigkeit als ihre Haupttätigkeit ausübt" (Art. 2.Abs.18.) bestimmt. Die Nuancen der Formulierungen werden von den Rezipienten außer Acht gelassen und es bleibt unklar, wie

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allerdings die Grenze zwischen beiden Begriffen in dem nachstehenden Satz zu ziehen ist:

(11) организации, осуществляющие образовательную деятельность, - образовательные организации, а также организации, осуществляющие обучение. (ст.2.п.20.) [20) die Organisationen, die die Ausbildungtätigkeit ausüben, sind die Ausbildungsorganisationen, sowie die Organisationen, die ausbilden(Art. 2.Abs.20.)]

Die Analyse hat ergeben, dass eine große Zahl der untersuchten Termini durch dasselbe Wort selbst aus dem Lemma erklärt wird, was als Verstoß gegen Forderung der Eindeutigkeit von Begriffsbestimmung zu verstehen ist, da die Tautologie in den terminologischen Bestimmungen als ein Fehler betrachtet wird, z.B.:

(12) федеральные государственные требования - обязательные требования к минимуму содержания, структуре дополнительных предпрофессиональных программ, условиям их реализации и срокам обучения по этим программам, утверждаемые в соответствии с настоящим Федеральным законом уполномоченными федеральными органами исполнительной власти (ст.2.п.8.) [Die föderalen staatlichen Forderungen sind obligatorische Forderungen zum Inhaltsminimum, zur Struktur der zusätzlichen vorprofessionellen Programme, zu den Bedingungen ihrer Realisierung und zur Ausbildungsdauer dieser Programme, die von den bevollmächtigten föderalen Organen der exekutiven Gewalt in Übereinstimmung mit diesem föderalen Gesetz angenommen werden (Art. Abs.8.)

Einige Definitionen sind zirkulär und begrifflich in sich geschlossen, d.h. das, was definiert werden soll (Definiendum), kommt im Material der Definition schon vor, z.B.:

(13) Муниципальной образовательной организацией является образовательная организация, созданная муниципальным образованием (муниципальным районом или городским округом) (ст.22.п.6.) [Die Kommunalausbildungsorganisation ist die Ausbildungsorganisation, die von den Kommunen (von dem Kommunalbezirk oder dem städtischen Bezirk) geschaffen ist. (Art. 22. Abs. 6.)]

Manche Termini werden durch Kommentare erläutert, in denen komplexe Bedeutungen mittels einfacher aufgeschlüsselt sind. Sie verleihen dem Begriff eine bestimmte semantische Schärfe und helfen die terminologischen Grenzen zu klären.

(14) Образовательные организации для обучающихся с девиантным (общественно опасным) поведением (ст. 22. п. 9.) [Die Ausbildungsorganisationen für Lernende mit dem Devianzverhalten (gesellschaftsgefährlichen Verhalten) (Art. 22. Abs. 9.)]

(15) выбор факультативных (необязательных для данного уровня образования, профессии, специальности или направления подготовки) и элективных (избираемых в обязательном порядке) учебных предметов, курсов, дисциплин (модулей) … (ст.34.п.5.) [die Auswahl der fakultativen (unverbindlichen für diese Bildungsstufe, diesen Beruf, das Fach oder die Ausbildungsrichtung) und der elektiven (verbindlichen) Lehrfächer, Kurse, Disziplinen (Module) … (Art. 34.Abs.5.)]

Das neue Bildungsgesetz hat Ziele der Regelung des Begriffsapparats verfolgt und dazu wurden viele Begriffe eingeführt oder neu definiert. So wurde das Bildungsprogramm in normativen Dokumenten als „Gesamtheit der Hauptziele, der Aufgaben und des Inhalts der Bildung eines bestimmten Niveaus" definiert (Решение Межгосударственного Совета ЕврАзЭС http://www.lawmix.ru, 2010), im dem neuen Gesetz geht es von der Gesamtheit der Hauptcharakteristiken der Bildung:

(16) образовательная программа - комплекс основных характеристик образования (объем, содержание, планируемые результаты), организационно-педагогических условий и в случаях, предусмотренных настоящим Федеральным законом, форм аттестации, … (ст 2. п.9.) [das Bildungsprogramm – die Gesamtheit der

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Hauptcharakteristiken der Bildung (Umfang, Inhalt, voraussichtliche Ergebnisse)**,** der planmäßig-pädagogischen Bedingungen und in den Fällen, die vom gegenwärtigen Bundesgesetz vorgesehen sind, Attestationsformen…(Art. 2. Abs.95.)]

Von dem heterogenen und systmatisierungsbedürftigen Charakter der Terminologie im russischen Bildungsrecht zeugen die nichtunifizierten Definitionstypen. Einerseits sind das verschiedene Bestimmungen von den gleichen Terminustypen (Siehe Beispiele 16 und 17), andererseits gleiche Definitionen bei den verschiedenen Terminustypen (Siehe Beispiele 18 und 19).

(17) примерная основная образовательная программа - учебно-методическая документация (примерный учебный план, примерный календарный учебный график, примерные рабочие программы учебных предметов, курсов, дисциплин (модулей), иных компонентов), определяющая рекомендуемые объем и содержание образования определенного уровня … (ст. 2.п.10.) [das Bildungsbasisprogramm - die lehrmethodische Dokumentation (der Grundlehrplan, der generellen Kalenderlehrzeitplan, die Basisarbeitsprogramme der Lehrgegenstände, Kurse, Disziplinen (Module), anderer Komponenten), die Umfang und Inhalt der Ausbildung auf dem bestimmten Niveau festlegt…(Art. 2.Abs.10.)]

(18) профессиональное образование - *вид образования*, который направлен на приобретение обучающимися в процессе освоения основных профессиональных образовательных программ знаний… (ст.2.п.12.) [die Berufsausbildung - die Art der Bildung, die auf Wissenserwerb…gerichtet ist (Art. 2.Abs.12.)]

(19) профессиональное обучение - *вид образования*, который направлен на приобретение обучающимися знаний, умений, навыков и формирование компетенции, необходимых для выполнения определенных трудовых, служебных функций (определенных видов трудовой, служебной деятельности, профессий); (ст.2.п.13.) [Die Berufslehre - die Art der Bildung, die auf Wissenserwerb … gerichtet ist (Art. 2.Abs.13.)]

Die neu eingeführten Termini müssen eng mit dem Begriffssystem verknüpft sein und dessen Ordnung widerspiegeln, indem sie die für den Begriff relevanten hierarchischen Beziehungen verdeutlichen. Wenn es nicht gelingt eine Systematik zu finden, die für Benutzer leicht nachvollziehbar ist, können Probleme bei Interpretation der terminologischen Bedeutung außerhalb des Kontextes entstehen. Im Laufe der Arbeit wurde deutlich, dass einzelne Felder zielgerichteter erarbeitet werden mussten, z.B. im Bildungsgesetz sind „allgemeine Ausbildung", „Berufsausbildung", „zusätzliche Ausbildung" als Bildungsarten definiert, deswegen wird erwartet, dass die inklusive Ausbildung durch gleiche Definition bestimmt wird, indem der Terminus zu anderem Begriffsfeld gehört:

(20) общее образование - вид образования, который направлен на…(ст 2.п.11.) [die allgemeine Ausbildung - die Bildungsart, die auf … gerichtet ist (Art. 2.Abs.11.)]

(21) профессиональное образование - вид образования, который направлен на… (ст.2.п.12.) [die Berufsausbildung - die Bildungsart, die auf … gerichtet ist (Art. 2.Abs.12.)]

(22) дополнительное образование - вид образования, который направлен на…(ст 2.п.14.) [die zusätzliche Ausbildung - die Bildungsart, die auf … gerichtet ist (Art. 2.Abs.14.)]

(23) инклюзивное образование - обеспечение равного доступа к образованию для всех обучающихся с учетом разнообразия особых образовательных потребностей и индивидуальных возможностей; (ст 2.п.27.) [die inklusive Ausbildung - die Ermöglichung des gleichen Zuganges zur Ausbildung für alle unter Berücksichtigung der Vielfältigkeit Ausbildungsbedürfnisse der Ausgebildeten und deren individuellen Möglichkeiten; (Art. 2.Abs.27.)]

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Außer kommen im Text des Bildungsgesetzes wegen der logischen Fehler unklare und schwammige Definitionen vor, die, wie im vorliegenden Fall, Korrektur brauchen:

> (24) Профессионально-общественная аккредитация профессиональных образовательных программ представляет собой признание качества и уровня подготовки выпускников, освоивших **такую** образовательную программу в конкретной организации, осуществляющей образовательную деятельность, отвечающими требованиям профессиональных стандартов, требованиям рынка труда к специалистам, рабочим и служащим соответствующего профиля (ст. 96. п.4) [Die professionell-öffentliche Akkreditierung der beruflichen Bildungsprogramme ist die Anerkennung der Qualität und des Vorbereitungsniveaus der Absolventen, die sich ein **solches** Bildungsprogramm in der konkreten Bildungsorganisation aneigneten, in Übereinstimmung mit entsprechenden Anforderungen der beruflichen Standards, den Arbeitsmarktsforderungen an die Fachkräfte, Arbeiter und Angestellte des entsprechenden Profils dar (Art. 96. Abs.4)]

4. Schussfolgerungen

Zusammenfassend lässt sich sagen, dass – trotz der Versuche die normative Terminologie auf dem Gebiet des Bildungsrechtes unter Berücksichtigung der internationalen juristischen Praxis und der russischen rechtlichen Traditionen zu harmonisieren – viele Formulierungen auf die Probleme hinweisen.

Die Untersuchung der Semantisierungsarten von Termini in den normativen Texten des Bildungsrechtes zeugt davon, dass die vorkommende Begriffsbestimmungen heterogen sind, nicht immer das Wesen des Begriffes und die wichtigsten Merkmale wiedergeben, einige logische Fehler enthalten, und in manchen Fällen eine lexikographische Bearbeitung und Systematisierung brauchen. Notwendig ist die Überprüfung des Terminologiebestandes des russischen Bildungsrechts auf interne Konsistenz und Korrektheit.

Die Analyse des Bildungsgesetzes hat die Widersprüchlichkeit des verwendeten Begriffsapparates des russischen Bildungsrechtes und die Lücken in der Darlegung der grundlegenden Termini gezeigt. In dem Text des Bildungsgesetzes kommen sehr unscharfe Bestimmungen vor, wenn die Semantisierung des Terminus keine umfassende Vorstellung über den Begriff gibt, wenn in der Bestimmung die Genauigkeit und die Kürze fehlen.

Zum Teil ist das damit verbunden, dass das Spezialisierungsniveau des lexikalischen Bestandes der Sprache des Bildungsrechtes verhältnismäßig niedrig ist. In diesem Zusammenhang scheint uns die Lösung folgender Aufgaben aktuell zu sein:

- die Inventur und die Systematisierung der traditionellen und neuen Termini,
- rechtsterminologische Untersuchung und Zuordnung der Begriffe,
- die Bestimmung ihrer Terminologisierungsstufe,
- die Analyse der systeminternen Beziehungen,
- die Ermittlung der abweichenden Varianten,
- die Abschaffung der interdisziplinären kategorialen Mehrdeutigkeit.

5. Literatur

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Translating law into dictionaries, or why one dictionary is not enough

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Abstract. The paper proposes an answer to two faults in the concept of a terminological translation dictionary, designed as a tool for professional translators of legal texts. Such a dictionary should include various categories of information deemed most useful for translators: definitions, references to legal sources, synonyms, hypo- and hypernyms, equivalents of various types, collocations etc. Its first fault lies in the fact that the data in each category is not sufficiently extensive. Secondly, the translator does not always require all categories of information presented in the dictionary: frequently the search is restricted to e.g. definition or collocations, in which case wading through the entire massive entry is a waste of time.

The solution could be a terminographic system: a set of dictionaries of various types, including an explanatory dictionary, a frequency dictionary, a semantic dictionary and a dictionary of collocations, with a translation dictionary including all categories of information in a concise form in the centre of the set. All dictionaries are interconnected by a system of cross-references, common macrostructure and mediostructure. The concept is described on the example of a set of dictionaries for translators of legal texts.

Keywords. Dictionary for translators, legal translation, system of dictionaries, terminological dictionary, translation dictionary.

1. Terminological translation dictionary

Translation dictionary is a dictionary type mentioned by only few scholars and often identified with bilingual dictionary or otherwise singled out only according to the criterion of the presence of foreign language equivalents (see e.g. Swanepoel 2003: 67-69; Zgusta 1971: 294-307; Atkins & Rundell 2008: 25; Hartmann & James 2002: 146; Lukszyn & Zmarzer 2006: 145-146). However, the presence of foreign-language equivalents is not sufficient for the dictionary to effectively facilitate professional translation. In order to serve that purpose, a dictionary needs to assist the translator throughout the whole process of translation as depicted on Fig. 1: helping them understand the original text, find an appropriate equivalent and use it in a correct way. Therefore it should offer explanations (definitions) of the source terms, numerous equivalents accompanied by information which makes it possible to differentiate between them and choose the best one, and finally it should include grammatical, lexical, stylistic and pragmatic information, allowing the translator to use the chosen equivalent correctly.

Figure 1: Stages of the translation process. T1 — source text; L1 — source language; L2 — target language; T2 — target text

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This concept, although it appears to account for all the needs arising in the course of translation, has some serious drawbacks. A dictionary compiled according to such a model must include many categories of extensive data. This is also what the translators generally expect. However, translators do not always need all of the data at once. As Fig. 2 shows, problems in translation do not necessarily occur at all the stages of the translation process: they can occur at one of them, at two or at all three. Depending on the problem complex, various dictionaries can be handy: in the case of the first complex, a monolingual source language dictionary can be sufficient, but also a bilingual dictionary can be used. In the cases 2a and 2b, that is when problems with equivalent choice occur, a bilingual dictionary is necessary. In complex 3a again a mono- or a bilingual dictionary will do, whereas only a monolingual target language dictionary will prove helpful in the last case, where difficulties are encountered only at the production stage of the translation process.

	UNDERSTANDING	TRANSFER	PRODUCTION	DICTIONARY
1	✹			M/B
2a	✹	✹		B
2b		✹		B
3a	✹	✹	✹	M/B
3b			✹	M
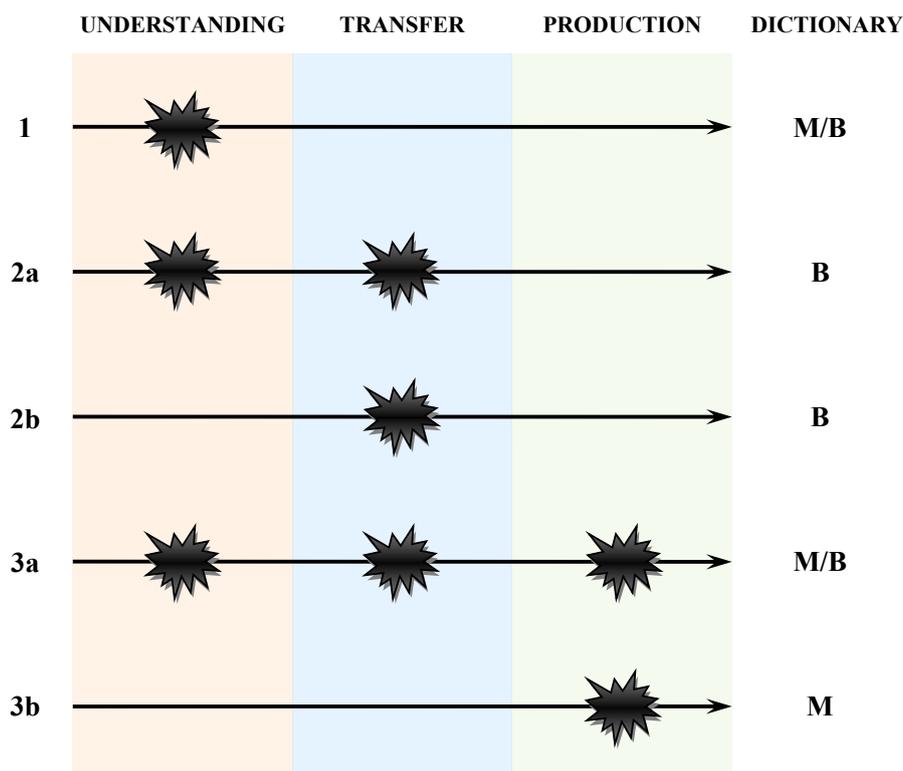
Figure 2: Problem complexes in translation from a lexicographical point of view (Tarp 2005: 37).
M — monolingual dictionary; B — bilingual dictionary

Consequently, translators do not always need all data they might need theoretically. Therefore using a translation dictionary, whose purpose is to provide all this data, means wading through long entries in search of the right category of information and thus wasting precious time. Furthermore, this situation does not occur in isolation. A particular problem complex — that is the translator looks only for one category of information — can prevail over the course of a whole individual text, but also in all texts of a given type or even in a whole thematic field: for instance texts referring to administrative law of a given legal system could be perfectly understandable to the translator, but could pose major difficulties in the transfer into the target language.

On the other hand, the necessity to include numerous categories of data means that for practical reasons the data of each type cannot be as extensive as the translator could wish. This at least is the case in a paper dictionary, which still remains the most frequent form of terminological dictionaries.

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2. System of dictionaries for translators

What could be an answer to this twofold problem is a system of dictionaries for translators. This concept should not be confused with that of the translation dictionary. A dictionary for translators does not even need to include foreign-language equivalents. A dictionary for translators is any dictionary (that is a dictionary presenting any given category of information, e.g. a defining dictionary, a frequency dictionary, a dictionary of collocations etc.) which was compiled specifically for translators; it is meant to cater to their specific needs, having the character of the translation process in mind. And if we agree with R. K. K. Hartmann (1989: 105), S. Tarp (2005: 36), S. Nielsen (1994: 7), R. Gouws (2003: 39) or H.-P. Kromann, T. Riiber and P. Rosbach (1991: 2713) that the user is the most important factor in the compilation of dictionaries, we must agree to assume that a dictionary compiled for a particular user type, e.g. professional translator, will be different from a dictionary compiled for another user type, e.g. expert or learner. It will differ in terms of information category, macro-, medio- and microstructure, corpus etc.

A set of such dictionaries, sharing the same subject matter, designed for the same user, interrelated on many levels, and offering various categories of information, is a system of dictionaries. The most obvious interrelationship is that of the macrostructure — all dictionaries should be based on the same entry list. The form, order, microstructure and mediostructure of the individual dictionaries can differ. In a system of dictionaries each reference work is assigned to a given stage of translation and supposed to solve problems particular to that stage. What dictionaries should become part of the system depends on the particular case, that is the discipline and the language pair in question. Generally we can expect that at the understanding stage the translator will be glad to use a defining or an encyclopaedic dictionary, or possibly a thesaurus or a systematic dictionary. At the transfer stage most useful dictionaries could be a frequency dictionary and a semantic dictionary. When it comes to the production stage, a dictionary of collocations, a phraseological dictionary and a derivational dictionary could prove most practical. Finally, it seems justified to include a translation dictionary in the system. As already indicated by S. Tarp, the translator may encounter difficulties at all stages of the translation process, in which case an all-encompassing reference work would be most useful. Again, the choice of particular dictionaries to be included in the system depends on the character of the given discipline and the language pair. Moreover, observing the principles of a given theoretical dictionary type is not a priority. Each dictionary must be precisely adjusted to the purpose it is supposed to serve, and only that. Fig. 3 depicts an example system with one dictionary per translation stage plus translation dictionary in the centre:
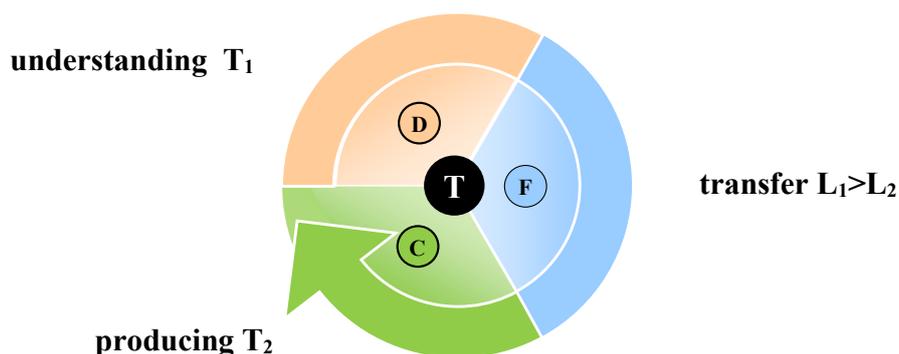
Figure 3: A system of dictionaries for translators. T1 — source text; L1 — source language; L2 — target language; T2 — target text; D — defining dictionary; F — frequency dictionary; C — dictionary of collocations

3. System of dictionaries of law

The concept of the system of dictionaries can be useful in any discipline of knowledge. However, it might be particularly interesting in the case of law, which requires even more expertise from the translators and even more work from the terminographers. The reason for this fact is that, as

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all translators know deep in their hearts, "legal translation is impossible. The very expression *legal translation* seems to be a contradiction in terms, and yet we do have to translate legislation and legal documents". These words by Patrick Chaffey (1997: 69) sound radical, but there is much truth in them. Unlike other branches of knowledge, law is not one reality which can be expressed in (more or less) any language, but as many realities as there are legal systems. The language of the law, therefore, does not merely describe a given, independent reality. It creates the said reality. Legal translation, therefore, is burdened with a particular difficulty, foreign to many other fields of knowledge: it occurs not only between languages, but also between systems — realities. Thus, legal translation involves not only a transition between languages, but also a transition between legal systems.

Consequently, the process of legal translation consists not of three, but of four stages, namely:

1. understanding the source text,

2. comparing the source legal system with the legal system of the target recipient (which from now on will be called secondary legal system),

3. transferring the message from the source language into the target language,

4. producing the target text.

understanding T_1   **comparing $\S_1$ and $\S_2$**

producing T_2   **transfer $L_1 > L_2$**
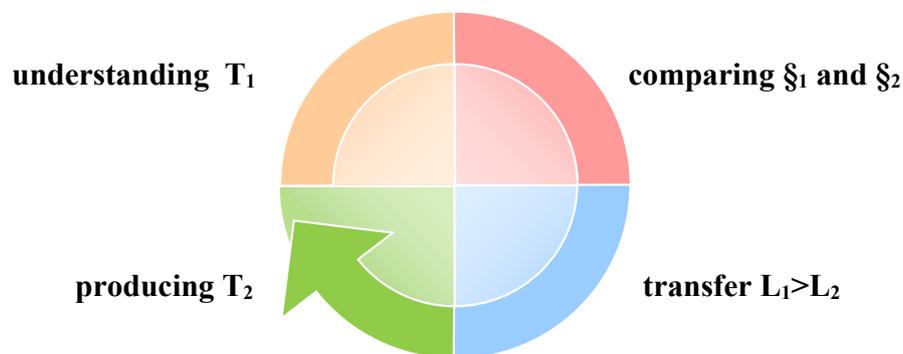
Figure 4: Stages of the translation process of legal texts. T1 — source text; §1 — source legal system; §2 — secondary legal system; L1 — source language; L2 — target language; T2 — target text

The system of dictionaries should be designed accordingly. Firstly, the system should encompass a single branch of law, e.g. only criminal law. The entry list should include all three layers of vocabulary particular to legal texts, as described by e.g. M. Chromá (2004: 15):

○ pure law terminology, not used outside the legal context,

○ legal terminology found in everyday speech,

○ everyday words assigned a special connotation in a given legal context.

Finally, while the dictionaries within the system may be mono- or bilingual, each of them and the whole system can be described as monodirectional and bijural. As we have already said and as has been postulated by scholars such as G.-R. de Groot (1990: 127), legal translation occurs between two specific legal systems: the legal order of the source text and the legal order of the target recipient. It does not mean that the translator should use terms from this secondary legal order, only that they should be aware what legal order it is. If the system of dictionaries is supposed to help the translator compare legal realities, it needs to be clearly stated which realities are taken into consideration, and the comparison of more than two within one reference work seems hardly feasible.

The original entry list should be divided into three categories:

○ terms representing concepts having highly congruent equivalents in the secondary legal system,

     ○   terms representing concepts having partly congruent equivalents in the secondary system, and

     ○   terms representing concepts having no equivalents in the secondary system.

This will be the basis of the modular structure of the relevant dictionaries within the system. They will be divided into three parts, each containing the terms from one of the respective groups. Such a construction of the dictionaries makes it possible for them to reflect the structure of the knowledge in question, here — the relation between the source and the secondary legal system. The mere proportion of the three parts offers the translator introductory information about the relation of the legal systems, and more in-depth studying of each part reveals the fields of similarity and difference.

The system will consist of five dictionaries and an appendix containing an index of headwords and a figure representing the modular structure of the dictionaries. The dictionaries can be named as follows:

     ○   general: translation dictionary,

     ○   stage 1: defining dictionary,

     ○   stage 2: contrastive dictionary,

     ○   stage 3: dictionary of equivalents,

     ○   stage 4: phraseological dictionary.

All the dictionaries but the last one share the same modular structure. The defining dictionary is a monolingual reference work devoted to the source legal system. Each entry should include an explication of the source term, consisting of its intension and extension, in particular its structure and place in the classification, the scope of application and its possible legal effects (Šarčević 1997: 242-246). The place in the classification includes information on full and partial synonyms, antonyms, complimentary terms, hypernyms and hyponyms. The entry should also indicate the source of regulation.

The contrastive dictionary is bilingual and describes the concepts of the secondary legal system in comparison with the primary legal system. The entry list is the same as in the defining dictionary, again divided into three modules according to the degree of congruence between the two legal systems in question. The entries offer information on legal concepts in the secondary legal system comparable to the source concepts, again describing them in terms of intension and extension, and particularly contrasting them with the primary concepts. It might appear questionable whether the third module, containing terms from the source legal system which have no counterparts in the secondary legal system, can appear in this dictionary at all: if there are no even partly congruent concepts in the secondary legal system, there is no subject matter. Such approach would be erroneous, however. Even if the secondary legal system lacks any similar concept, the translator needs to know why that is the case and what other legal instruments are applied instead. Consequently, the entry structure in the third module will differ from that in the first two modules.

As such, the contrastive dictionary can already become a source of equivalents. However, this role is essentially played by the dictionary of equivalents, which can be used on its own if the only difficulty in translation is remembering an equivalent expression or choosing between a few possibilities. Obviously it is bilingual and shares the previous two dictionaries' entry list. It offers all possible equivalents of the following types for each headword:

     ○   equivalents denoting concepts in the secondary system which are highly congruent with the source concepts,

     ○   equivalents denoting concepts in the secondary system which are partly congruent with the source concepts (so called functional equivalents),

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- ○ equivalents denoting obsolete concepts in the secondary system which are highly congruent with the source concepts,

- ○ equivalents denoting obsolete concepts in the secondary system which are partly congruent with the source concepts,

- ○ various categories of neologisms, understood as expressions which do not exist in the secondary legal language (i.a. literal translations, borrowings from other legal languages, borrowings from other languages for special purposes, foreignising neologisms, familiarising neologisms etc.).

All types of equivalents should be marked as such (including various types of neologisms) and accompanied by further information on their frequency, which will help the translator choose the right one for their particular purpose. Finally, if the equivalents of the first two types have synonyms and partial synonyms, they, too, should be offered, with relevant information on the degree of synonymy.

The phraseological dictionary is monolingual and the only element of the system with a haplomorphic, that is non-modular structure. Its separate entry list is ordered alphabetically and consists of all the equivalents (both *sensu stricto* and neologisms) offered in the dictionary of equivalents, including a reference to the original term. The entries include grammatical and lexical data as well as information on the derivation of the given expressions. This dictionary can be called purely linguistic.

Finally, the translation dictionary occupies the heart of the system. It is bilingual and has modular structure. It comprises condensed information of all categories, that is: the source term with a definition and an indication of the source of regulation, its synonyms if applicable, equivalents of all types, accompanied by definitions and synonyms in the case of concepts from the secondary legal system, and grammatical, lexical and stylistic data necessary to use the chosen expression correctly.

Fig. 5 represents the system of dictionaries for translators of legal texts:
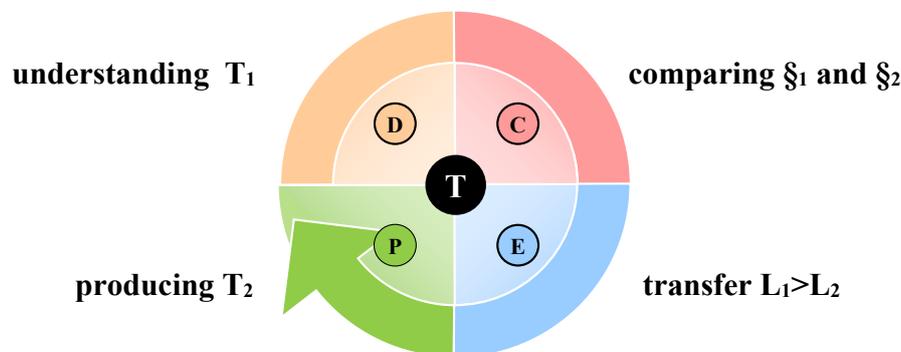
Figure 5: System of dictionaries for translators of legal texts. T1 — source text; §1 — source legal system; §2 — secondary legal system; L1 — source language; L2 — target language; T2 — target text; D — defining dictionary; C — contrastive dictionary; E — dictionary of equivalents; P — phraseological dictionary; T — translation dictionary

4. Conclusion

The main advantage of a system of dictionaries is the possibility to assign the categories of information required by the translator to various dictionaries according to the stages of the translation process. What it means is that when the translator chooses a given piece of the set, they do not need to read irrelevant parts of long entries, as they will generally find only the data they are looking for. Simultaneously, they can count on more extensive information within a particular category, since there will be evidently more room for it in several dictionaries than there is in one volume only. Moreover, the terminographer will have more freedom in using

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various forms, orders and entry structures, thus more precisely adjusting the means to the data and the translator's needs. The terminographer therefore can design a systematic dictionary, which will illustrate the structure of knowledge, an alphabetical linguistic dictionary offering collocations and grammatical information, or a frequency dictionary, presenting how often various equivalents are used. The system can include mono- and bilingual dictionaries, varying in terms of structures and entry lists, each tailored to the user's needs. The individual dictionaries reflect not only the subsequent stages of the translation process, but also the specialist translator's competences.

It is rather improbable that the concepts described in this article and illustrated on the example of a particularly complex discipline, namely law, will be realised in the form of concrete dictionaries in the nearest future. Yet it remains to hope that the idea could contribute to changes in the terminographic practice, propagating both the need to design dictionaries for specialist translators and the possibility of doing so. The model (described in detail in Szemińska 2013) could become a starting point for a discussion on which terminographic solutions are necessary and which are impossible, and consequently — for the creation of modern dictionaries for translators, worthy of the 21st century.

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Questionnaire survey on difficulties encountered in English business meetings at Japanese companies

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Abstract. With the expanding global economy, businesspersons need to attend more English meetings, at which non-native speakers of English encounter communication problems. In this paper, we examined the results of an online questionnaire survey of businesspersons working for large companies in Japan. Approximately 1,000 participants were asked about English business meetings to elicit difficult situations and problems caused by inadequate English skills, and we focused on the data from 227 respondents. The following aspects of English business meetings were examined: 1) meeting purpose; 2) the attendees (inter- or intra-organizational, and language background); 3) the business cycle of a meeting; 4) English proficiency based on the CEFR scale; 5) other factors including mental and psychological factors, and emotional intelligence. Our survey results showed a trend of BELF, Business English as a Lingua Franca, at multinational companies in Japan with ELF speakers accounting for the second majority of meeting attendees. We found problems caused by inadequate English skills, with listening being the most problematic. Further research is required to reach a solid conclusion but our findings suggest that advanced, high-CEFR level speakers of English can overcome the problems and we can target the skills when setting goals for English language curricula.

Keywords. CEFR, communication problems, English business meetings, Japanese businesspersons, online survey.

1. Introduction

1.1. JACET-EBP Survey and Research Committee

Due to increased globalization, Japanese companies are facing a greater need to do business in English. Previous research on business English conducted in Asia or the EU (Khoo 1994; Hagen 1999) suggests that spoken language rather than written language is the most problematic in a foreign language. In particular, reports (Hagen 1999; Koike et al. 2008) show that speaking over

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the telephone, making small talk, and giving opinions at business meetings are difficult. In order to identify difficult communication situations specifically facing Japanese businesspersons at meetings carried out in English, JACET (The Japan Association of College English Teachers)[1] ESP (English for Specific Purposes) Survey and Research Committee was established. The committee started a business-academia collaborative project with IIBC (The Institute for International Business Communication)[2] in 2011. This joint research entitled "English skills for business meetings required at corporations" also involved local ESP SIGs nationwide.

The collaborative project of the two organizations is aimed at contributing to improving English language education in Japan.

1.2. Background

With the rapid expansion of globalization in business fields, many companies in Japan are pressed with the need for more global human resources. However, the shortage of qualified personnel has been a serious problem hindering Japan's international growth. Yet, expanding into high growth overseas markets can help revive Japan's long-stagnant economy. The Japanese Cabinet issued a summary of policy proposals for the development of Japan's global human resources on June 11, 2012. The requirements for global human resources listed in this summary are: good communication skills in foreign languages; positive attitudes in global settings; and cross-cultural understanding. The summary also presents a scale for global human resources in terms of English communication skills: Level 1 through Level 3 are English for general purposes such as English used for overseas trips, daily living, and general tasks in the workplace, while bi-lateral and multi-lateral business talks/negotiations are referred to as Level 4 and 5, respectively. The summary states that Japanese businesspersons have made progress in Levels 1, 2, and 3. However, Japanese companies need to develop and expand human resources with English proficiency of Levels 4 and 5, which is essential for Japanese economic and social growth.

In fact, a number of needs analysis of business fields have revealed that bi-lateral and multi-lateral business talks and negotiations are frequent in business situations (Khoo 1994; Barbara et al. 1996; Hagen 1999). Koike et al. (2010) conducted a detailed questionnaire of 7,354 Japanese businesspersons and found that many Japanese businesspersons feel uncomfortable and stressed in business discussions and negotiations in English. Tsuji & Tsuji (2012) carried out a large-scale investigation of 1,000 businesspersons in manufacturing companies in Japan and the results suggest the need for systematic support to improve English skills of these businesspersons to function well in business interactions. Many recent discourse analysis studies examine negotiations and interactions at meetings (Nickerson 2005; Bargiela-Chiappini, Nickerson, & Planken 2007), indicating that much of business communication is carried out at business meetings. Handford (2010), through the compilation of a spoken corpus of one million words, provided a detailed description of the business meeting genre. However, to the best of our knowledge, there has not yet been a large-scale questionnaire survey focusing solely on business meetings.

Our project group conducted a large-scale survey to examine English business meetings at Japanese companies as the participants see them. Considering the fact that bi-lateral and multi-lateral business talk/negotiations are difficult for the Japanese, our aims were (1) to find the cause of communication difficulties and problems at business meetings, and then (2) to explore for possible solutions.

2. Methods

2.1. Online survey on English use in business meetings

We conducted an online survey on English use in business meetings in multinational companies based in Japan, from February 5th to April 30th, 2013. The survey period was divided into two

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terms: from February 5th to March 31st and from April 1st to April 30th, 2013.

Requests to respond to the questionnaire were sent by email and the respondents voluntarily answered online. During the first term of the survey period, 2,934 people from IIBC's client companies and 168 acquaintances of the JACET members received our requests, and 337 businesspersons responded to the questionnaire. After data cleaning, we found the data for 277 respondents to be valid for our analysis. During the second term, as many as 267,228 members of IIBC's internet service were sent our questionnaire. After data cleaning, the data for 632 out of 749 respondents were found to be valid for our analysis.

From a statistical standpoint, the above-mentioned groups of 277 and 632 respondents are two different kinds of data because of the difference in sampling methodologies. They were labeled as "closed" and "open" because we could directly and personally contact all the respondents from the "closed" group of 277 businesspersons. In this paper, we discuss the data from this "closed" group.

With respect to the survey questions, the unique point is that we addressed the questions to business leaders and executives, who were to give answers about the members of the department to which they belonged and not about themselves.

The survey consisted of 30 questions: 19 closed questions, 2 open questions, and 9 questions on respondent attributes as follows:

Questions	Contents
Q1~Q6	Years of English use, business areas, number of people in the department, number of English users, ration of English use in business
Q7~Q8	Current level and goal of English skills in business meeting
Q9~Q14	Business meeting frequency, number of participants, forms of communication, mother tongues, purposes, asked separately according to the relationship of speakers
Q15~Q20	Difficulties according to purposes, situations, speaking and listening skills, English abilities, psychological and mental factors, and open question on the difficulties
Q21	Open question on problems of the business communication in general
F1~F9	Attributes of the company

Table 1: Survey questions

The average respondents had used English for business for 10 to 15 years with about four years of overseas experience. The ratio of English use in their business environment was about 30% with the ratio of English use in their business meetings about 20% of all the meetings. In a month, they have 6.2 internal meetings, 2.7 meetings with contracted partners, and 3.4 meetings with members from outside the company. As for the respondents themselves, 60% were 40 to 54 years old, with 80% being over 40. Almost all were in a management position and 80% had used English for more than five years.

3. Results

3.1. Using English as their lingua franca for the meeting

We found that the so-called BELF environment had spread beyond our anticipation (Kankaanranta & Planken 2010). The meeting participants were classified into four groups by mother tongue: Japanese speakers, native speakers of English, people who use English as the second language (ESL), and people who use English as a foreign language (EFL, excluding people whose first language is Japanese). In an average case, a meeting has about 40% participation from Japanese, a fourth from native speakers of English, and a third from ESL and EFL speakers. This means that about 75% of the meeting participants are non-native speakers of English.

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3.2. The average CEFR level of the respondents

The two graphs below show the average CEFR level of the respondents in the closed group: Figure 1 shows the average CEFR level by business field and Figure 2 shows them by department. The horizontal axis shows their current CEFR level and the vertical axis shows the level they are expected to reach in the near future. The average current CEFR level is "B1" and the average expected CEFR level is "B2.2."

Consequently, Figure 1 shows a gap between the goal and the reality and Figure 2 shows a clear difference in the CEFR level between departments. For example, the group at a high CEFR level includes departments of legal affairs and product planning. On the other hand, the CEFR level of staff of the general affairs department is not very high.
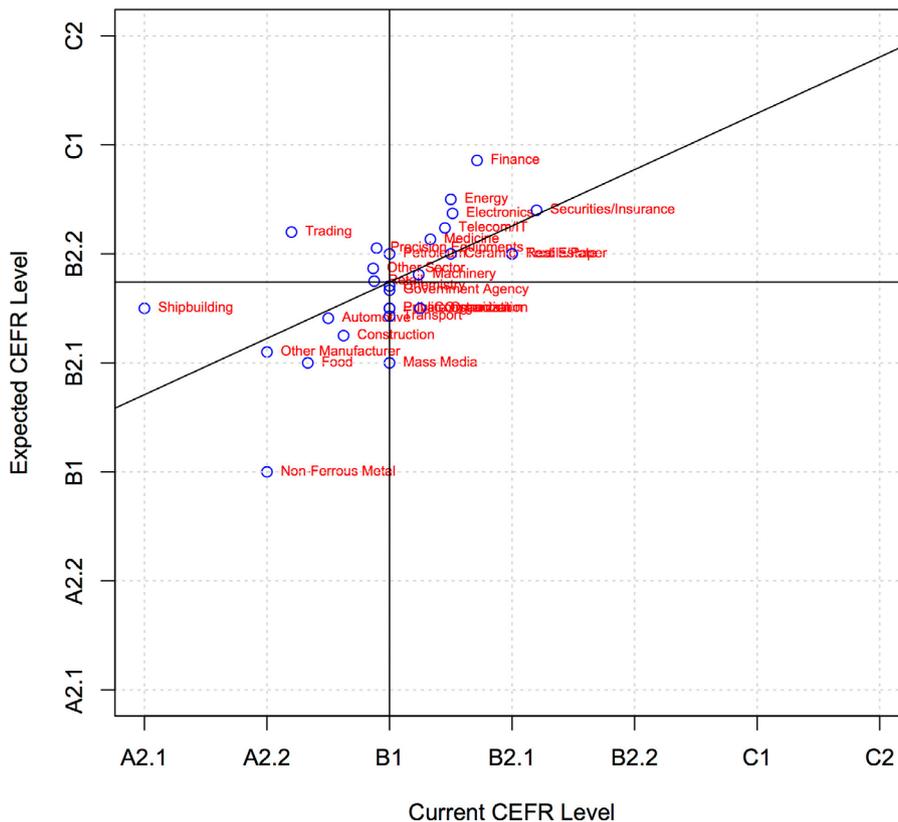
Figure 1: Average current- and future-CEFR level of respondents in the closed group by business field

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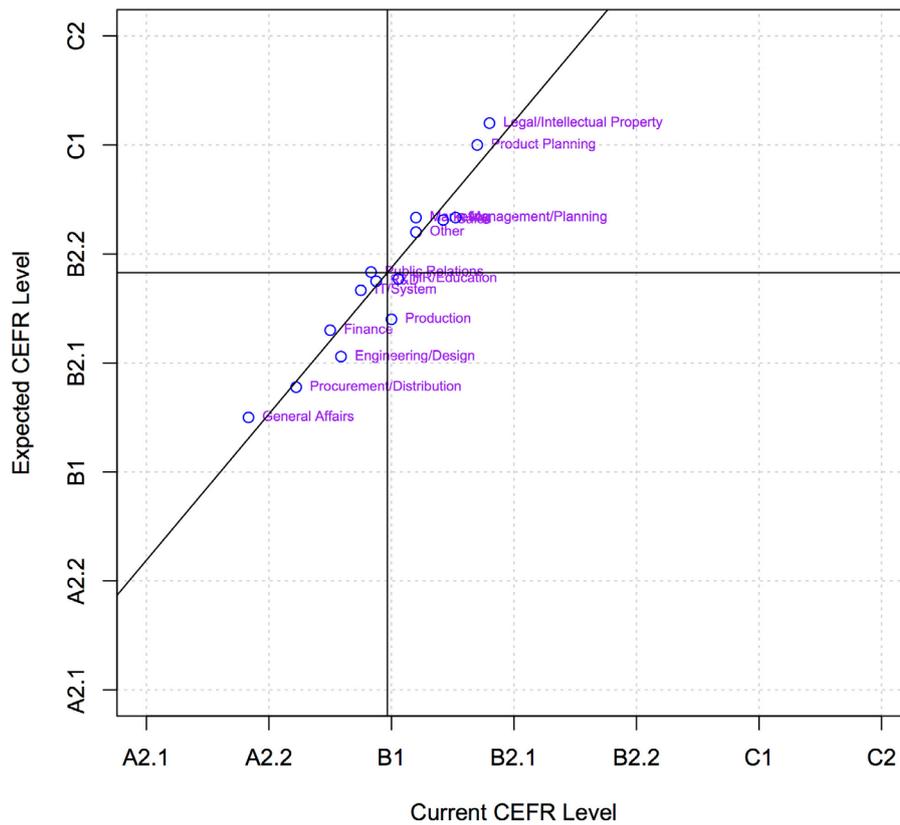
Figure 2: Average current- and future-CEFR level of respondents in the closed group by department

3.3. Difficulties by meeting purposes and meeting types

In our survey we focused on "difficulties" by meeting purposes and meeting types. Informed by the meeting classification used in Handford (2010), we classified difficulties into six different purposes: Reviewing; Planning; Giving and receiving information/advice; Task-oriented or Problem-oriented; Buying/Selling/Promoting a product; Negotiation. From another point of view, meetings are categorized into three types such as internal meetings, meetings with contracted partners, and external meetings. Figure 3 shows "Negotiating" and "Task-oriented/ Problem-oriented" are the most difficult of any type of meeting.

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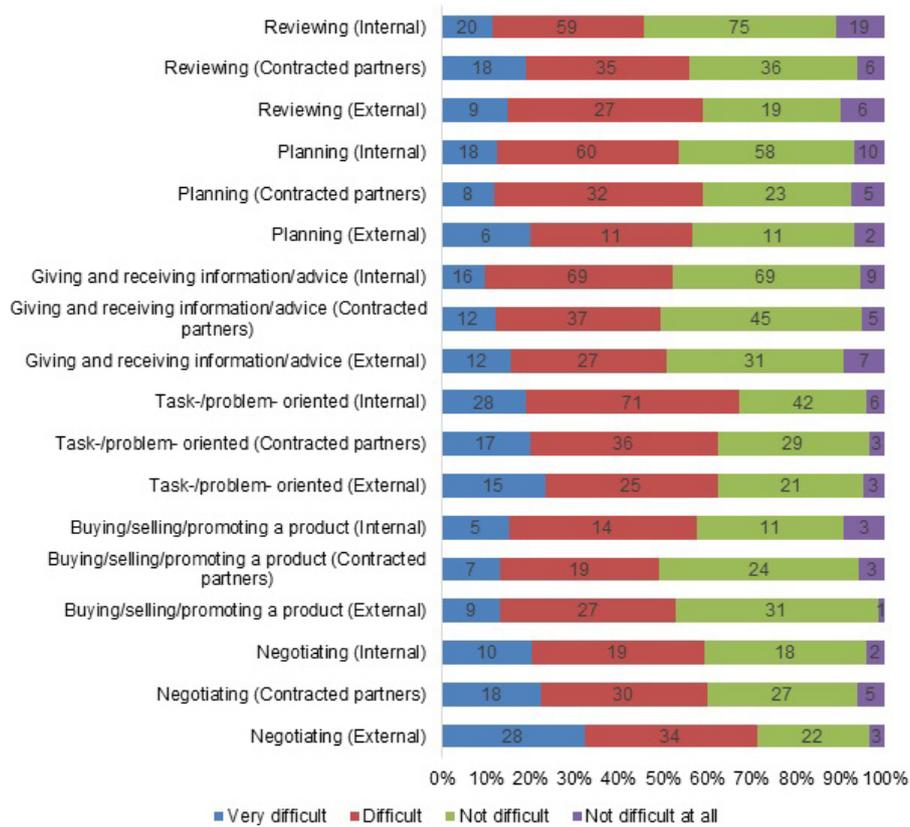
Figure 3: Difficulties by meeting purposes and meeting types

3.4. Task difficulties of the meeting process

In general, businesspersons start a meeting by preparing presentation materials and end the meeting by making decisions. Judging from task difficulties of the meeting process, the survey respondents answered that "Organizing attendee's ideas & Building consensus", "Making decisions", and "Proposing solutions" are the most difficult.
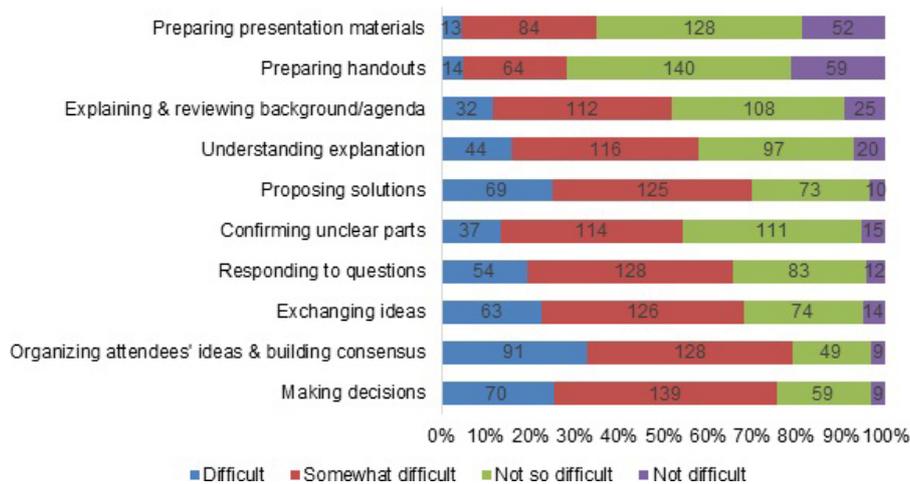
Figure 4: Task difficulties in the meeting process

3.5. Identifying problems: Running a meeting smoothly

We also asked the respondents to identify the problems impeding the progress of the meeting. The most typical problems related to linguistic skills were: "Not conveying subtle nuance," "Not understanding subtle nuance," "Not understanding the details," "Not explaining the details," and "Not explaining with clear points."

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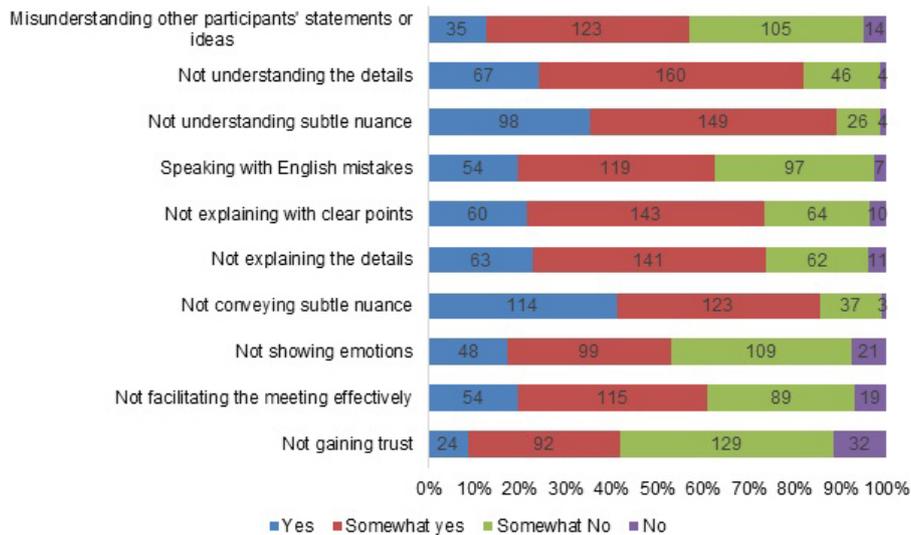
Figure 5: Problems impeding smooth running of a meeting

3.6. CEFR levels and problems

Figure 6 shows the correlation between the CEFR levels and problems that the survey respondents pointed out by way of correspondence analysis. In sum, the linguistic factors were strongly associated with the intermediate levels and emotional factors were strongly associated with the introductory levels.
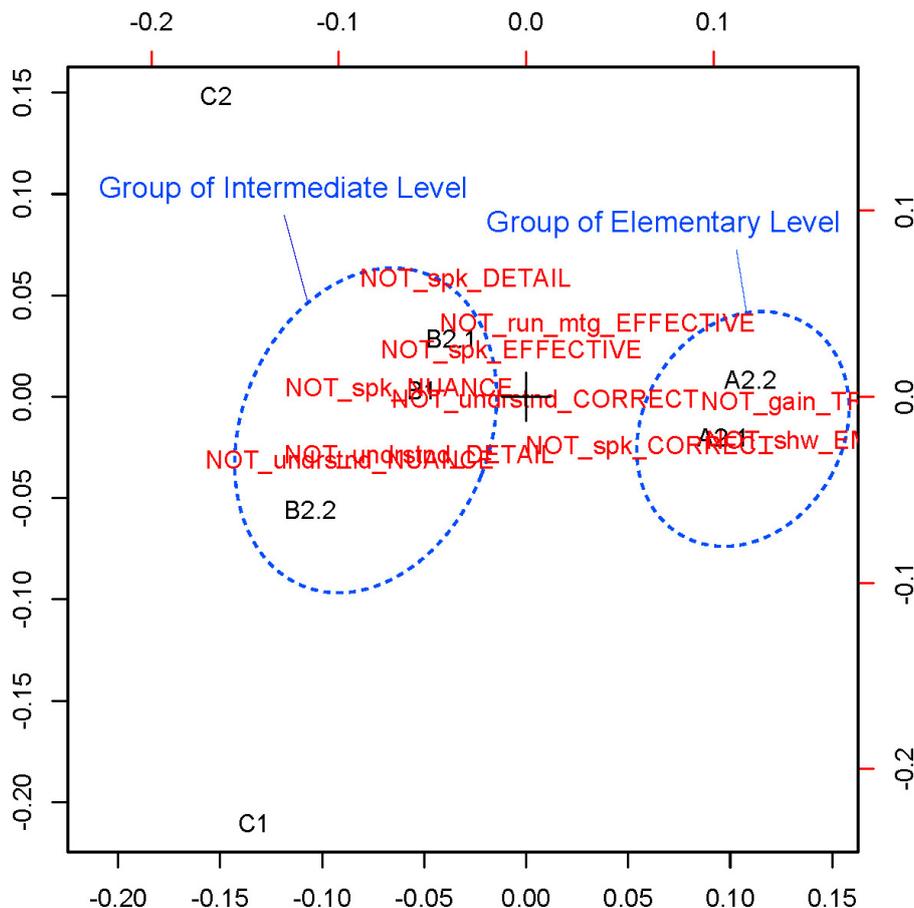
Figure 6: CEFR Levels and Problems

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3.7. Identifying problems: Language factors

Figure 7 shows the problematic language factors. Listening skills are rather challenging. The respondents answered, "Understand English with native speed" and "Understand varieties of English pronunciation" are difficult.
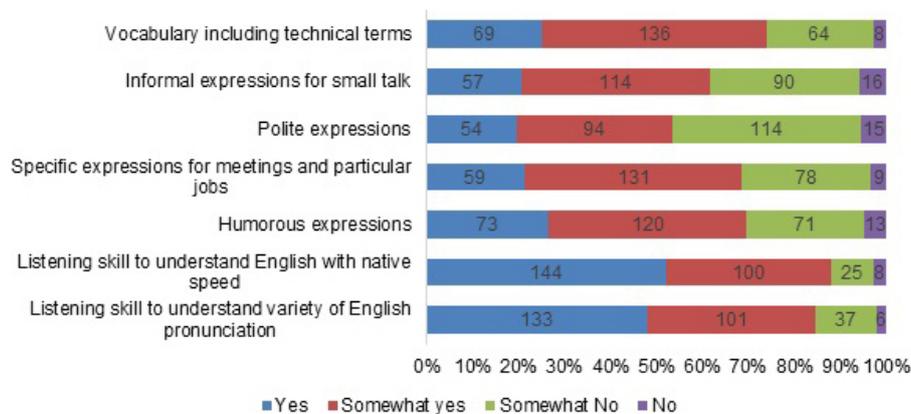
Figure 7: Problematic language factors

4. Conclusion

As our research is a multi-year project and is still on-going, we need to conduct further research to reach a solid conclusion. Thus far, our findings suggest the following:

- Firstly, we can see the trend of ELF or BELF, Business English as a Lingua Franca, at multinational companies in Japan. ELF speakers, or English speakers of Outer Circle and Expanding Circle, according to Kachru (1985), compose the second majority of meeting attendees following the group of people whose first language is Japanese.

- Secondly, listening is the most problematic issue. It is difficult to understand when a speaker talks too fast and/or uses native dialect. Our findings suggest that advanced, high-CEFR level speakers of English can overcome these problems. Thus, improving listening skills is required to be more competitive in today's global market.

- Thirdly, judging from the meeting process, problems with English at meetings are "Clarifying the point," "Building consensus," "Making a decision," and "Reaching a conclusion." Our findings suggest that advanced, high-CEFR level speakers of English could overcome these problems and thus we should target these skills as a goal of English language curricula for students, and business majors in particular.

In the next stage, we will conduct detailed interviews with businesspersons. We will also continue our analysis with the aim of proposing countermeasures for problems caused by inadequate English skills for non-native speakers of English, and consider how to overcome difficult situations and problems caused by differences in culture, business customs and meeting strategies between countries. A detailed report will be issued in 2014.

5. Acknowledgements

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6. Notes

[1] JACET was founded as an independent organization in 1962. As of August 1, 2013, the academic society comprises 98 supporting organizations/companies and 2,531 individuals. JACET was established in a time of educational reform in order to improve the state of English language education. Those involved were strongly convinced of the need to solve university-level problems related to teaching at all levels in the educational system.

[2] IIBC, founded in 1986, promotes the development of global human resources through various activities including the administration of the TOEIC® test, TOEIC Bridge® test and TOEIC® Speaking and Writing tests. To implement its mission to promote smooth communication in the global community, IIBC works with Japanese major corporations and universities to improve Japanese English skills through the administration of the tests.

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Persian language planning: Abbreviation

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Abstract. One of the challenges facing translators, terminologists and language planners in some countries, including Iran, is the English abbreviated forms which increasingly enter textbooks and academic discourse. In Iran there is no general agreement on how to deal with abbreviated forms and the issue continues to be the focus of discussion to the present day. The Academy of Persian Language and Literature pursue the coinage of Persian abbreviated forms as equivalents for English ones.

The main objective of this study is to determine the applicability of abbreviation in the Persian language and the outcomes of the Academy of Persian Language and Literature are the source of data gathering.

The investigation reveals that Persian employs its own method for shortening terms and appellations which is in harmony with the morphosyntactic and phonological structure of the language as well as the psycholinguistic paradigms of the language community.

This study does not abandon the use of abbreviation in Persian but indicates that Persian language planners can play a valuable role in streamlining abbreviation in the language to reduce the disadvantages of abbreviated forms and to make the outcomes more intelligible for the language community. In order to attain this goal language planners need to consider all existing Persian-specific word/term formation methods and the language community's psycholinguistic factors.

Keywords. Language planning, abbreviation, Persian, The Academy of Persian Language and Literature.

1. Introduction

Abbreviation is considered as a powerful method of word/term formation in some languages, like English and German, and the number of abbreviated forms in such languages is rapidly increasing in business, scientific, and technical language, as well as in everyday use. However, the review of abbreviated forms in the Persian language reveals the limited recognition of abbreviation as a dynamic word/term formation method. The infrequency of abbreviation in Persian is widely considered as a problem which is not yet solved (Kafi 1991, Mansouri 2007, Zahedi and Sharifi 2009, Mokhtari-Memar 1998, Zakei 2001). There are even some official efforts undertaken to accelerate the coinage of this method by the Academy of Persian Language and Literature.

Extensiveness of English academic abbreviated forms on the one hand, and the lack of a strategic direction on how to deal with them in Persian on the other hand, lead to decision-making on a case by case basis. This procedure is time consuming and expensive for authors and translators as well as terminology committees and councils at the Academy of Persian Language and Literature.

This study focuses on the abbreviation policy introduced by the Academy of Persian Language and Literature and its outcomes. The main objective is to determine the applicability of abbreviation in the Persian language. The main audience of this paper is language planners, terminologists, translators and textbook compilers.

The abbreviated forms approved by the Academy in different fields of knowledge are the source of data gathering for this study.

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This paper is structured as follows: section 2 is a historical summary of the issue; section 3 presents a study of efforts in this field conducted by the Academy of Persian Language and Literature and the results; section 4 is a discussion, and section 5 summarizes and concludes the paper.

I need to mention that while acknowledging that a number of different definitions for and categories of abbreviation designations exist, in this paper I mainly follow ISO documents. Therefore, abbreviated form is used as a superordinate term for short forms, clipped terms, abbreviations, initialisms, acronyms, and the like (ISO 704- 2009).

2. Background

It is believed that the need to convey more information in less space and the difficulty of engraving on coins, seals and inscriptions induced the application of abbreviated forms in Old and Middle Persian. New Persian, which is the natural continuum of Old and Middle Persian, is the Persian language spoken from the time of the Arab conquest of Iran in the 7th century and which is written with the Perso-Arabic script. No abbreviated forms were used in early new Persian scientific books, including those by the influential philosophers Avicenna and Abu Rayhan Biruni, while at the same time, abbreviated forms were common in the Arabic religious and philosophic books of the time including those authored by Iranians (Kafi, 1991).

In contemporary Persian, the number of abbreviation designations is not considerable. The number of abbreviated forms in Persian is estimated to be less than 1,000. Zahedi and Sharifi (2009) found about 400 in dictionaries, articles and advertisements. Mokhtari-Memar (1998) extracted about 500 abbreviation designations from different Persian texts and shop signs, and the Committee for Abbreviation (2000: 11) at the Academy of Persian Language and Literature reported about 900 in its report. Abbreviated forms are chiefly used in dictionaries, encyclopedias, and the appellations of organizations and institutions.

Interestingly, Persian abbreviation designations in army terminology are probably historically and quantitatively at the top of the list. Ahani (2010) suggests the necessity of observing the principles of security and cryptography as well as the importance of rapid transfer of messages in military forces are the reasons behind this phenomenon. Another opinion is that military education with the assistance of American advisors during and after the Second World War was the cause of the rather extensive use of abbreviated forms in Persian military terminology.

On the other hand, Abolhassani and Pooshaneh (2011) studied the increasing rate of abbreviated forms from 1960s to 1990s by contrasting the proportion of clipped forms, acronyms and blending, with other word/term forms in Persian political journalism. The result is not promising because the incidence of clipped forms and acronyms increased only 3% over the period and blends showed only a slight difference.

Those in favour of abbreviated forms believe abbreviation makes scientific and non-scientific texts explicit and elegant; and moreover that they save time and text. Hence, abbreviation methods should be encouraged in the Persian language (Ahani 2012, Ghiasi Rad and Abolhassani 2005, Kafi 1991, Mokhtari-Memar 1998, Zahedi and Sharifi 2009, Committee for Abbreviation 2000, Zakeri 2001). Kafi (1991) posits that in the modern age, the lack of abbreviations indicates insufficiency in a language. He argues the necessity of encouraging abbreviation in two ways: 1) Persian is widely used to transfer information in the language community. Therefore, it should be concise, clear, quick, economic and easy-to-transfer, and 2) if Persian abbreviations are not encouraged, then non-Persian ones will penetrate instead which result in damage to the language. He notes that there is no serious obstacle in Persian abbreviation processes and advises their coinage and usages as soon as possible. Mansouri, physicist, explains that physics PhD dissertations in Iran are written completely in Persian. Mansouri continues that he regrets the lack of a solution for abbreviation processes in Persian as a language of science (2007: 68). As a solution, Mokhtari-Memar (1998) introduces a number of existing and potential Persian

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abbreviated designations to encourage people to use them.

An alternative approach is made by Majd (2009, 2011) who examined a small number of abbreviated designations coined by the Academy of Persian Language and Literature. He claims abbreviation, or in his own words causeless omission of letters, is not applicable in the Persian language as it does not convey any meaning for Persian speakers.

Admittedly, abbreviation in Persian has received much attention in recent decades. Nevertheless, publishers, authors and translators of scientific books employ different strategies to address foreign abbreviated forms; including substitution by Persian equivalent's full form, adoption in its original alphabet, or transliteration into Persian. These chaotic methods of translation continue to be used arbitrarily to the present day.

Therefore, while there is no general agreement on how to deal with abbreviated forms introduced to Persian a number of new examples enter the language every day, especially from English as the global language, the language of science and technology and the primary form of international business communications.

The Academy of Persian Language and Literature decided to take the first official step to solve the problem in 1996. Historically, there were two other academies in Iran. The Academy of Iran was active from 1935 to 1941 and the Iranian Academy of Language was founded in 1970 and ceased all the activities after the Islamic Revolution in Iran in 1979. The two first Persian academies did not engage in abbreviation. Their chief concern was to coin Persian equivalents for imported terms. The Academy of Persian Language and Literature (the third Academy), as the highest authority responsible for language planning in Iran, was established in 1991 to preserve and improve the Persian language. The Academy, that itself frequently encounters English abbreviated forms as it constructs equivalents for non-Persian terms, could not simply employ an arbitrary style as individuals and publishers have. Hence, it founded the Committee for Abbreviation at the Terminology Department in 1996 to examine present abbreviated forms in Persian and develop a strategy to address the issue.

The Committee for Abbreviation was primarily composed of two linguists, one engineer in electronics, one expert in librarianship and information science and one researcher in terminology. After about three years and the examination of 23 dictionaries, encyclopedias and biographical encyclopedia, the Committee released its conclusions in a final report in 2000.

The Committee concluded that abbreviations are vital for the enjoyment of easy communication and quick transfer of information. In terms of practical recommendations, the report advised the coinage of abbreviated forms for: 1) the ministries and organizations with multiple word appellations, and 2) university textbook terminologies. The Committee also recommended that it was necessary to standardize the abbreviated forms in dictionaries, encyclopedias and biographical encyclopedias. Although the Committee for Abbreviation ceased to be active in 2002, the issue continues to be the focus of discussion in terminology committees and councils at the Terminology Department to the present day.

3. Abbreviation planning in Iran

One of the main activities of the Academy of Persian Language and Literature is to make equivalents for non-Persian terms which enter into Persian terminologies. The policy is implemented by the Terminology Department that began its activity in 1996 and presently is comprised of over 70 terminology committees across different fields of science, arts and humanities.

One of the challenges facing the Terminology Department from the beginning of its activity is the English LSP abbreviated forms which increasingly enter textbooks and academic discourse. Hence, abbreviation in Persian is a very familiar issue for researchers and the members of terminology committees and councils who devote much time to discussing it. The policy of the Department, as it was outlined in the report of the Committee for Abbreviation, is to pursue the coinage of

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Persian abbreviated forms. The outcomes of the Committee for Abbreviation, as well as the experiences gathered via making equivalents for English terms (including abbreviated forms) at the Terminology Department, resulted in a revised version of The Principles and Regulations of Terminology being issued by the Academy of Persian Language and Literature in 2009. This resource categorizes Persian abbreviated forms as follow: 1) Single-letter abbreviations, 2) Multi-letter abbreviations (Initialisms), 3) Truncated forms, 4) Contracted forms, 5) Blended forms, and 6) Acronyms.

In keeping with this categorization, in this section I investigate the two proposed fields for abbreviation as recommended by the Committee for Abbreviation: 1) the appellations of ministries with multiple word appellations, and 2) academic terminologies. The first has been followed up by neither the relevant bodies nor the Terminology Department, and the latter has remained the main mission of the Department to the present time. The main objective of the first examination is to understand the natural and unplanned behavior of Persian and the second part attempts to evaluate the potential for Persian abbreviation to move forward as quickly as in English.

3.1. Abbreviation for ministries with multiple word appellations

The Committee for Abbreviation advised the coinage of abbreviated forms for the ministries with multiple word appellations, that is, 13 out of 18 Iranian ministries. Investigations show none of them but one has ever officially used any of the six abbreviated forms named in The Principles and Regulations of Terminology. However, all 13 ministries already enjoy a method of abbreviation which is not formalized in the mentioned resource. They use an abbreviated method that uses fewer words to designate the same concept, a result known as short form (ISO, 2009: 52). An English example is Security Council as a short form for Security Council of the United Nations. All short forms are formulated through natural and unplanned processes by ordinary Persian speakers and are commonly used in spoken and written Persian; the same way that many of abbreviations and acronyms in English are created.

Interestingly enough, the Ministry of Sport and Youth Affairs which is founded in less than two years ago received its short form from its establishment by Persian speaking community and appeared in media and everyday usage.

The only ministry possessing an acronym form is the Ministry of Science, Research and Technology. To obtain a phonologically pleasant acronym, it is transliterated into English as ATF while OTF corresponds to the phonology of the relevant full form and this makes decoding the acronym more problematic. In any case, The acronym form is not yet a workable substitute for the short form so far and is unfamiliar to the community.

The other five ministries have single word appellations and obviously have no need to be shortened.

Thus, if the Academy of Persian Language and Literature does officially recognize short forms as a Persian abbreviation method, not only it will enjoy one of the most practical term formation methods but also will avoid some difficulties, such as interference of the potential abbreviated forms with the existing ones, that is, the short forms.

3.2. Abbreviation in academic terminologies

In order to investigate the potentiality of abbreviation in Persian, data has been gathered from approved terms after the implementation of abbreviation planning for academic terms.

The Academy of Persian Language and Literature has approved about 35,000 equivalents for non-Persian terms to date and has published them in 9 volumes. The collection of all approved terms during the period of 2008 to 2011 was selected as the material for this study, that is, volumes 5, 6, 7 and 8. Subsequently, English and coined Persian abbreviated forms were

extracted for analysis. Finally, English and Persian abbreviated forms were contrasted to see: 1) to what extent it was possible to coin Persian abbreviated forms for English ones, and 2) which of the six abbreviation methods named in The Principles and Regulations of Terminology were employed more frequently.

During the period of 2008 to 2011 the Academy of Persian Language and Literature approved 16,800 Persian equivalents for English terms from a wide range of fields. As Table 1 shows, 293 of the English terms have abbreviated designations, and after several discussions in terminology committees and councils, 84 of them acquired Persian abbreviated equivalents.

Admittedly, the results from this recent period are based on the knowledge and experiences of the Department in the field of abbreviation gathered during its several years of experience with the issue, forming a valuable basis for implementing its abbreviation plan. Despite this extensive experience however, only 84 out of 293 English abbreviated forms attained Persian equivalents, namely 28.6%.

Year	Approved Terms	English Abbreviated forms	Persian Abbreviated equivalents	Persian Abbreviated forms
2008	5000	118	12	0
2009	4200	115	5	0
2010	3700	34	38	4
2011	3900	26	29	3
Total number	16800	293	84	7

Table 1: Number of approved terms by the Academy of Persian Language and Literature

Another striking result is that Persian abbreviated designations are barely coined for the English terms with no abbreviated forms; that is, in only 7 cases. Thus, it may be reasonable to assume that in almost all cases the mere existence of English abbreviated forms initiated the coinage of Persian abbreviated equivalents, rather than a need for filling a gap deriving from the Persian language. A closer look at the data shows that it seems no other criteria, such as term length or frequency, played a role in selecting term candidates for abbreviation.

In addition, the examination indicates that in constructing the majority of approved abbreviated forms, combinations of the six abbreviation methods named in The Principles and Regulations of Terminology—alongside some undefined methods—were employed to obtain phonologically pleasant acronyms.

4. Discussions and results

In this section, I discuss 1) both the natural and the planned behavior of the Persian language in dealing with abbreviation, based on the results obtained in this study, and 2) whether the infrequency of abbreviation in Persian is a matter of regret. Finally, I will provide some basic issues for language planners to resolve, which may shed some light on the subject and fill a gap in Persian terminology, translation and especially language planning.

4.1. Abbreviation in Persian: Unplanned versus planned

Kafi (1991) investigated Webster's New Collegiate Dictionary and estimated nearly 10% of English words and compounds are abbreviated forms; or in Zhou's words around 5,000,000 (2012: 102-103), while the previous studies on abbreviation, using the existing materials, reported maximum 900 Persian abbreviated forms (Committee for Abbreviation, 2000). These statistics reveal that the applicability of abbreviation methods in Persian and hence the number of abbreviated forms, in comparison with English, is paltry in comparison. In spite of this fact, the above-mentioned studies, that supported abbreviated forms, principally abbreviations and acronyms in English, concluded that the Persian language is potentially capable of making abbreviated forms likewise.

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However, the results of this study provide more nuanced information for assessing the applicability of abbreviation in Persian than merely encouraging it or seeking ways to increase the number of abbreviations and acronyms. The Persian speaking community enjoys its own strategies for shortening terms and appellations; first and foremost short forms. In addition, as Table 1 shows, employing an official plan which ignores the most feasible alternative for English abbreviated forms (short forms) seems to be fulfilled in only a small percentage of cases (less than 30%). It should be noted that the chance of the acceptance of the coined abbreviated forms by Persian speaking community is another question which needs a separate psycholinguistic study.

4.2. Infrequency of abbreviation: Regret or satisfaction

This study does not probe the reasons for infrequency of abbreviation in Persian but it evaluates the situation in order to develop a more practical plan for abbreviation. The actual situation is that Persian planners encourage abbreviation (other than short forms), both in theory and in practice. However, as it is explicitly mentioned in the report by the Committee for Abbreviation, abbreviation processes are not commonly accepted by the language community and full forms are repeatedly used in spoken and written Persian without being acknowledged as a source of annoyance (2000: 2). Although it is not noted in the report, it should be indicated that wide usage of short forms, pronouns and some other strategies, play an important role in avoiding annoying repetitions. Therefore, it seems the Persian speaking community does not see a lack and hence does not welcome abbreviation methods warmly; seemingly with the exception of short forms. The report by the Committee confirms this notion by suggesting that while the majority of abbreviations are chiefly used in dictionaries, encyclopedia, and some geographical dictionaries, they are rarely used in other scientific texts and even if they do appeared in such texts, they are mostly expressed as full forms (Committee for Abbreviation, 2000).

It may be reasonable to infer that Persian employs its own method for shortening terms and appellations which is in harmony with the morphosyntactic and phonological structure of the language as well as the psycholinguistic paradigms of the language community.

Admirers of abbreviations and acronyms adduce the principle of least effort and the economy principle in support of it. Nonetheless, as Leopold argues: "Linguistic development follows not one tendency, but two opposing ones: towards distinctness and towards economy. Either of these poles prevails, but both are present and alternately preponderant." (Leopold, 1930: 102) The results of this study show Persian speaking community tends towards the middle of the spectrum and employs the construction of short forms as prevailing abbreviation method. This method not only meets the economy principle and the principle of least effort in a moderate manner but also avoids some problematic consequences of abbreviations and acronyms; such as:

- increasing homonymy and ambiguity,
- intransparency of terms,
- phonological variants,
- enlarging the gap between generations, among professionals from different disciplines and between professionals and non-professionals,
- forming a barrier between industry and academia, and
- imposing extra expenses for publishing abbreviation dictionaries and the time spent looking up and decoding an encrypted language in the same language.

4.3. Future prospects for abbreviation planning

The realization of a practical plan requires resolving some theoretical issues:

1. As every language presents different characteristics, the question is whether the Persian language is morphologically capable of constructing abbreviated forms?

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2. Even some supporters of abbreviation who regret the infrequency of abbreviated forms believe that the Persian language is capable of communicating properly even at higher and more specialised levels (Mansouri 2007, Committee for Abbreviation 2000). Therefore, a fundamental question is whether rapidly increasing abbreviated forms in English creates intimidation and turns abbreviation into a highly intriguing topic in Persian or whether it heightens the need for enhanced abbreviated forms.

3. As this study shows, on the one hand short forms are the most common abbreviated forms in Persian and on the other hand some other abbreviated forms which are advocated by the Academy of Persian Language and Literature are not widely used by the language community. The question is, as the Academy ignores short forms and insists on its own coined abbreviations, what psycholinguistic response the language community will have to the coined abbreviated forms. Another question is whether language planning is more fruitful if it behaves like genetic engineering or like gardening.

Even after resolving the above-mentioned issues, the key issue remains open to question, that is, whether abbreviation plays a role in efficient communication, and the development of languages, science and economy.

5. Conclusion

Prior works have stressed the necessity of increasing abbreviation in the Persian language. However, these studies have either focused on the extensive number of abbreviated forms in English or stressed on the principle of least effort and the economy principle. In this study I examined the plan by the Academy of Persian Language and Literature which supports abbreviation and names single-letter abbreviations, multi-letter abbreviations, truncated forms, contracted forms, blended forms and initialisms as Persian abbreviation methods.

The first investigation in this study examined the ministry appellations which were suggested to gain abbreviated forms by the Committee for Abbreviation in order to test the necessity of abbreviation forms in the suggested scope and understand the unplanned behavior of the Persian language. The results showed that all the appellations already enjoy short forms, and the potential abbreviated forms can hardly substitute them. The only problem is that short forms, in spite of their frequent occurrence in the language, for an unknown reason are not officially recognized as abbreviated forms by the Academy.

The second part of the study examined the approved abbreviated forms to assess the potentiality of abbreviation in Persian based on the extent to which the Academy's abbreviation plan has met its intended aims. According to the findings it seems that in less than 30% of the cases it was possible to coin abbreviated equivalents for English abbreviated forms. In other words, apart from the fact that term coinage does not necessarily imply its acceptance by the language community, the plan is still far from obtaining the desired results. The reason lies beneath this basic question that if the plan is aimed to fill a gap in Persian, or as Fishman argues, "Language planning – when engaged in under auspices of modernization and with modernization as the goal, generally results in making languages even more capable of translating American life, even when suffusing the translations with the aura and the pretense of greater or lesser degrees of indigenization. (2000: 50)

This study does not abandon the use of abbreviation in Persian but indicates that Academy's policy and plan towards abbreviation requires reconsideration. Persian language planners can play a valuable role in streamlining abbreviation in the language through delimiting the scope of usage and application as far as possible to reduce disadvantages, and defining abbreviation and its methods clearly so that the outcomes will be more intelligible for the language community and enhance communication in general and professional contexts. The Academy needs to consider all existing Persian-specific methods as well as the language community's psycholinguistic factors in order to increase the likely success of its strategies.

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Italian for social sciences and humanities at tertiary level in Serbia: Challenges and prospects

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Abstract. Tertiary FL education is regarded as an integral component of university studies as it provides linguistic and communicative competencies indispensable for students' academic and professional development. The importance of teaching foreign languages not for general, but for specific, discipline-oriented purposes has already been acknowledged as a necessity worldwide. However, a survey of the pertinent literature indicates that most of the theoretical and empirical research conducted within this context has focused, understandably, on English, as the *lingua franca* of international communication, whereas other languages have been considered to a much lesser extent.

This paper aims to provide an overview of current situation in teaching Italian for social sciences and humanities to non-language students at Serbian universities as regards different aspects of this undergraduate university course (learners' needs and motivation, level of language and subject matter proficiency, teaching and learning methodology, learning outcomes, material design, evaluation and other curriculum development issues. The theoretical perspective taken in this study includes a view of tertiary language instruction as learner-centered, contextualized, collaborative, personalized as well as an increasingly autonomous process.

Keywords. Italian for Specific Purposes, tertiary language instruction, social sciences and humanities.

1. Introduction

1.1. Tertiary FL education

It is a well known fact that foreign language teaching at university level is an integral part of scientific education of any member of academic community. Acquiring adequate linguistic and communicative competencies has always been and now is, more than ever, a prerogative for any individual wishing to pursue a carrier or simply participate in the dynamics of expert community and the information flow within it. Furthermore, learning a number of different languages, all useful (to a greater or to a lesser extent) in various spheres of modern life, is in accordance with multilingual and pluricultural educational language policy of Serbia, Europe and the whole world.

Not only is the foreign languages ability important for the modern individual, but it is now more accessible than it used to be. Evidence gathered from recent groundbreaking developments in technology, science, educational practice, standards and assessment reveal that learning different languages can be more effective, faster, more available and purposeful than it used to be. Each individual who sets foot in the realm of foreign languages is given a variety of learning choices and is expected to take responsibility and a more proactive approach in planning his/her learning, according to personal preferences, learning styles and language needs.

1.2. FL learning as LSP learning in tertiary education

As far as learning foreign languages at tertiary level of education is concerned, a number of issues and dilemmas may still arise, concerning most of all questions such as: What sort of language are university students supposed to learn? At what level of study and for how long would it be best to learn foreign languages? How intensive should such a course be? What are the most desirable learning outcomes of such a language course?

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First of all, let us consider the sort of language non-philological students should learn at university. There seems to be a consensus in the most recent literature that foreign languages at tertiary level cannot and should not be taught as general language courses. What's more, no language text or utterance used in academic or professional settings can be neutral or insensitive to the particular context in which it is realized. Instead, certain elements of specialized languages of the student's field of study should be incorporated into university foreign language curricula.

Students should have an opportunity to acquire skills and competences necessary for their academic and future professional lives. In order to enable them to master this particular aspect of the foreign language of their choosing they need to get familiar with a number of specific linguistic and stylistic choices, typical of subject-specific communication at different levels of complexity and expertise (from divulgative scientific language to expert- to- expert communication means).

Thus, the introduction to the LSP offered at university becomes an introduction into the scientific and discourse community, which carries also a significant sociolinguistic value, as pointed out by Balboni (Balboni 2007: 51): students learning LSP at university level acquire basics of rhetoric-formal style of scientific language skills indispensible for their personal and professional growth.

2. Tertiary FL education in Serbia

2.1. A brief historical overview

Foreign language education for specific purposes has had a long tradition in our country. Ever since the foundation of first vocational schools and colleges in Serbia in the second half of the XIX century foreign languages taught for special purposes had their rightful place within the hierarchy of school subjects (Ignjacevic 2006: 87).

Immediately after the World War II, Serbian universities introduced a foreign language as mandatory subject for students of all disciplines. Each faculty was autonomous in deciding which foreign languages to include in their programs of study, what status the foreign language instruction will have, at what level foreign languages will be taught, what class load will be suitable etc.

For decades, only four foreign languages were widely taught at university level in Serbia: English, Russian, French and German. Italian was another foreign language offered, ever since 1961, but only at one faculty, whereas Spanish was introduced only much later, in 2001. Students learnt the foreign language they chose, mostly for the first two years (four semesters) of their studies. Even than the language taught was not meant for general but for specific, vocational and academic, purposes. Throughout the second part of the XX century LSP at tertiary level in Serbia was taught, analyzed and researched, the proof of which could be found in numerous papers, textbooks and conference proceedings dealing with tertiary LSP instruction and teaching in Serbian context.

However, with the reform brought about by the Bologna process, when Serbian universities faced drastic changes in curricular organization, a strange trend appeared. Due to a number of newly offered subject-specific courses, the space planned for LSP instruction seemed to become occupied by other, non-linguistic subjects pertinent to students' programs of study. Strangely enough, in Serbia, where foreign languages policy was oriented towards multilingualism even long before the claim for linguistic diversity in Europe has gained ground, the reform induced by Bologna process caused a falling trend in the number of foreign languages offered at universities, as well as in class load, status and position of this once important university subject. More in danger have been and still are foreign languages other than English. Thus, in the academic year of 2005/2006, research shows that 40% of Serbian faculties offered only English courses (Ignjacevic & Brdarski 2006: 154). Understandably, English has survived the impact of reform changes, thanks to its status of *lingua franca* of international scientific and professional

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communication, and remains the major foreign language for specific purposes taught and studied at tertiary level in Serbia.

Nevertheless, there are still numerous voices contrary to reducing a fairly rich choice of languages offered at university level to English exclusively. Within Foreign Language and Literature Association of Serbia, there is a very active section, LSP Special Interest Group, concerned with questions of status of LSP as university subject. Regardless of undeniable supremacy of English as the language of science and profession, there are still many disciplinary areas in which other languages (such as French, German, Russian, Spanish, Italian) can boast pertinent, relevant and unavoidable literature, worthy of consulting. Italian, for instance, is a must for any art historian researching Renaissance, while some of the most valuable works on classical philology is written in German, not to mention the importance of reading in original greatest philosophers of all times who wrote either in German or French, and these are but some examples).

To sum up, recent developments in language learning area have confirmed the unique position of English as a mandatory foreign language in any field of expertise, but this does not mean that other foreign languages are obsolete or useless. Students should all know and use English language at a satisfactory level, but they will enrich learning resources by becoming familiar with other foreign languages during their course of study.

2.2. Italian for Specific Purposes at tertiary level in Serbia

The Italian is, together with English, French, Russian, German and Spanish one of the six official languages, taught as foreign language in Serbian schooling system. It was first officially introduced in elementary schools in 2001, and in high schools even before, as experimental instruction, as early as 1997.

As far as tertiary level is concerned, Italian Language and Literature Seminar was founded in 1930, which originated into Italian Language and Literature Department, enrolling for years now a great number of Italian major undergraduate, master and doctoral students, second only to English Department (Vučo 2006: 148). At the Faculty of Philosophy, University of Novi Sad Italian language is taught as compulsory course for students of Romance languages and optional course for students of other Departments. Italian language is also taught as mandatory subject at some non-philological faculties of Serbian university such as Faculty of Philosophy in Belgrade, Faculty of Philosophy in Novi Sad, Faculty of Drammatic Arts in Belgrade, Academy of Arts in Novi Sad, Faculty of Music in Belgrade, and Faculty of Philology and Arts in Kragujevac.

Ever since private universities have been founded in Serbia in the 1990s, Italian language has been taught as compulsory subject at Alfa University (Faculty of Management, Faculty of Trade and Banking, Faculty of Entrepreneurial Management, Faculty of Foreign Languages), at European University (Faculty of International Management, Faculty of Business and Marketing), at Union University (Faculty of Law), at Singidunum University (Faculty of Informatics and Management, Faculty of Tourism and Hotel Management). Looking closely at the above mentioned faculties offering Italian in their study programs we can conclude that in Serbia the subject areas regarding Italian as relevant for their specific purposes are: social sciences, humanities, business, marketing, banking, tourism and law.

2.3. Italian for social studies and humanities at the Faculty of Philosophy

The Department for Foreign Languages at the Faculty of Philosophy was founded back in 1961. The courses of English, French, Russian, German and Italian were at that time incorporarated in social sciences and humanities programs of study. This fact corroborates the multilingual orientation of the Faculty of Philosophy which has for more than 50 years stood for high quality LSP instruction as an integral part of tertiary education within the above mentioned fields.

From the very beginning the Italian language course at the Faculty of Philosophy has cherished

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a particular sort of LSP instruction bearing in mind specific purpose of learining a foreign language while studying at university. In the spirit of the early research and theoretical assumptions regarding LSP, back in the sixties, the first learning goal was concerned with mastering terminological system of disciplines of students' interests. However, as the LSP research headed towards a more complex and wider understanding of LSP learning goals, Italian language curriculum has included mastering general academic and scientific discourse as well as acquiring pragmatic and socio-cultural competencies indispensable for pursuing students' academic and professional career.

Regardless of numerous changes the organization and development of Italian language curriculum at Faculty of Philosophy has undergone in the past decades (and in the past years, for that matter) the basic principle of foreign language study has remained unchanged: dedication to disciplinary sensitive language instruction with LSP components incorporated from the beginning. The language that students should learn at university level is language in function of science and profession, language as a useful tool for a professional, rather than an end in itself. What was subject to change was methodological approach to language teaching, which followed general trends and tendencies in foreign language teaching methodology towards a less frontal, more learner-centred and needs analysis-based LSP teaching.

3. Italian for Specific Purposes: course description

Students enrolled in the Faculty of Philosophy majoring in Philosophy, Sociology, History, History of Art, Education, Classics, Anthropology, Psychology or Archaeology can all choose Italian to be a compulsory subject during the first two years of their studies. The course is divided into two two-semestral modules, Italian Language 1 (2+0 hours per week, 6 ECTS credits) and Italian Language 2 (2+2 hours per week, 8 ECTS credits). The Italian Language curriculum in question, as an introductory LSP course, aims at developing all basic language skills (reading, listenin, speaking and writing), with special regard to discipline-oriented language usage. The vast majority of our students have no previous knowledge of Italian language, so we start form level A1 according to the CEFR. As already mentioned, along with the basics of Italian language system a number of different morpholexical, syntactic, pragmatic and stylistic components of LSP are introduced.

3.1. Course objectives and learning outcomes

In line with Richards (Richards 2001: 120) course objectives are defined with special regard to students' needs and interests as university students and future members of disciplinary discourse communities. The primary goal is to enable students to deal with subject-specific texts upon a four semester instruction and learn how to consult relevant literature written in Italian for their academic and professional needs. As for the learning outcomes, after the biannual Italian course we expect our students to be able to (a) understand/interpret subject specific texts, (b) recognize discourse patterns pertinent to the subject area and use Italian within this field of study.

Evidently, the goals set are rather ambitious and it would be extremely difficult to succeed in such a highly set task if it were not for our students' intrinsic motivation and their fluency in at least one more foreign language or more than one, as well as some but gradually increasing knowledge of their field of study. These three factors help us overcome most difficulties encountered on our way to achieving our goals.

3.2. Skills and competences

Tertiary foreign language education involves acquiring a great variety of skills and competences indispensable for using foreign language functionally, as means of entering the world of the disciplinary area chosen.

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Reading proficiency, not only in foreign languages but also in L1 is undoubtedly crucial to academic success. If students need guidance and practice in order to become efficient LSP readers in their own mother tongue (Hancock 2007:26) it is only natural that the first and the most relevant skill they are to acquire in order to become competent readers in languages other than L1 is LSP reading comprehension skill. It is developed gradually by learning and practicing how to build vocabulary, find main ideas, read for global understanding, read for detail, draw inferences, read critically etc. All the mentioned elements fall into the domain of textual competence (Colombo 2002: 61) which is not an innate ability, but a competence developed gradually, in the course of reading, studying, developing the expectance of coherence and textuality etc.

Although the accent is on receptive competences, when it comes to their written production, students need to learn how to take notes and tackle different types and forms of reproductive writing (reformulation, summary, report, plan, essay, project etc.) as well as how to apply various strategies for text reception and production.

Oral and written production skills (oral presentations, oral commenting on the texts they read, note taking, written synthesizing and text reformulating, the basics of oral academic/professional interaction) are targeted mostly within our second year program. Evidently, the majority of the skills mentioned are not strictly related to any particular subject area, but are widely applicable as general academic skills.

Additionally, LSP teacher has to deal not only with language-based methodology issues but also with more general, and, as it seems to be, rather poorly developed general study skills, such as managing time well, making effective study plans, searching for learning resources and so on. When dealing with a complex LSP text, students with moderate Italian language knowledge have to rely on their cognitive and metacognitive competences as well as on their knowledge of the world and of the subject area. Hence, we deem very important skills such as: making use of contextual clues, using word structural knowledge, using signal words, understanding organization patterns, understanding tone and purpose etc.

On their road to mastering foreign language for such a specific purpose students are expected to acquire understanding of different communicative acts typical of the LSP in question (naming, defining, describing, explicating, comparing, assessing, interpreting, presenting, quoting etc.). Students get familiar with different textual typologies, learn how to recognize and discern their structure and pragmatic function, master different techniques of reading and apply the adequate one in each situation.

Furthermore, while getting equipped for consulting literature in foreign languages students can also broaden and deepen their subject matter knowledge. In order to ensure that, a certain form of cooperation between language teacher and subject matter teacher is crucial, not to mention the value of interdisciplinary approach proposed. If the students are presented with adequate learning material directly connected with issues already familiar to them from subject matter instruction, both disciplinary and linguistic knowledge are likely to be acquired. Finally, the intercultural component of foreign language learning should not be neglected as intercultural competence is not a prerogative of general foreign language instruction but has its impact in LSP teaching and learning as well (Hyland, 2000:22).

3.3. Course contents

The contents of the Italian for Specific Purposes at the Faculty of Philosophy correspond to the goals set: for Italian for Specific Purposes 1 the content is Italian language system at orthographic, phonological, morphosyntactic and lexical level. Together with the basic contents of Italian language learning proposed by level A1-A2 according to the CEFR, the course contents are adaptable to students' specific needs. Hence, the topics included are, from the start, based on general academic issues (university life and practices, oral and written communication for academic purposes, studying, reading etc.) and are gradually enriched by LSP aspects

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(vocabulary and terminology issues, specific structures and textual patterns, contrastive analysis of certain elements in Serbian, Italian, English and other languages students use etc.). In our case all of this is possible due to the fact that the language of social sciences and humanities is one of the least formalized and least hermetic variants of LSPs, and closest to the general language of a higher register (Arcaini, 1988:42). As far as grammatical content is concerned, the components proven to be frequent in LSP are covered in more detail (e.g. historical present, nominalization, expressing impersonality etc.).

The contents of the Italian for Specific Purposes 2 are selected and proposed with a view to reaching level B1-B2 of the CEFR, but some of the structures the CEFR proposes for even higher levels (infinitive, participal and gerundial constructions, periphrastic structures etc.) are also addressed, as they appear regularly in the specialized texts used and pose substantial understanding problems for students. Authentic LSP texts, introduced at an early stage, stand as the basis for analysis and interpretation of LSP, as well as for the first steps towards oral and written production in Italian.

Topics to be covered are normally not pre-set, rather roughly outlined so they spring from the students' inquiries and interests and are negotiated in the process.

Any language of any subject area is neither a homogenous nor monolith phenomenon: it ramifies in formally, stylistically and content wise diversified textual genres (forms, biographies, citations, reports, abstracts, articles, presentation, summaries), none of which should be neglected when tailoring contents for the course, as it is valuable for students to get to know as many and as diverse discourse models, genres and patterns they are likely to come across in the future.

3.4. Course materials

Bearing in mind heterogeneous disciplinary interests of our students, it is no wonder that a commercial textbook that would cover all the subject fields mentioned, does not exist yet, at least to our knowledge. The only natural solution would be a tailor-made textbook that could address such diversified and often dissimilar needs. However, further difficulties in creating such a material lie in the fact that the exact number of students coming from different Departments is neither predictable nor stable but varies from year to year, so it might just happen that one year there is only one Philosophy student compared to 20 History of Art students, and the next year the situation could turn out to be opposite. This can present substantial difficulties in planning, designing and developing curriculum for our language course. Taking into consideration all this, we have come up with an in-house textbook containing a number of materials for all the disciplines studied at the faculty, so that each year students and teacher together can choose and decide which texts are to be covered in-depth. The basic criteria for text and material selection are: authenticity, representativeness, and up-to-dateness. As most students are informed well enough on the most appropriate topics and literature concerning their fields of study (which could be also checked by subject matter teachers), they take an active part in the selection of texts. They usually opt for literature proposed by their subject teachers, or other texts they consider pertinent for deepening their disciplinary knowledge. Both subject matter teachers and language teachers are at disposal for any kind of suggestions or help. Thus, students' active role in course design has been asserted.

After the texts have been selected a lot of work awaits the teacher: analysis for LSP elements worthy of presenting and using in class, didactization of adequate text passages, devising of various exercises etc. This means a substantial increase in teacher's workload and greater responsibility for the success of the course, but also an incomparable gratification for offering relevant and meaningful materials to meet students' specialized needs. On top of that, a lot of different audio and video materials concerned with the subjects taught are chosen and didacticized for classroom use (audio/video recordings of academic lectures, interviews, TV debates etc.).

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3.5. Methods and didactic principles

Such specific circumstances and goals set accordingly require special attention when deciding on teaching approach to take. The quest for the ideal teaching method has marked the period from the late XIX century till the end of the XX century, when it became widely accepted that no single method, but rather combining more methods, works best. The combined teaching method escapes clear definition; it's secret being exactly flexibility and well-balanced selection, tailoring and the right dosage of various elements (Ciliberti 1994:83). It is also crucial to adapt and bear in mind at all times the pertinance of choices made to the real life situations and practices. It is our strong belief that teaching foreign languages for specific purposes at university requires an integrative and open didactic approach, in which different linguistic, communicative, pragmatic and cultural aspects are intertwined and interrelated. This being said, it is only natural not to be satisfied with what has been accomplished so far, but to continue pursuit for new and innovative teaching techniques and more opportunities of experimenting with them in concrete learning situations.

Certainly, students differ greatly in their academic and linguistic potential. They are equipped unequally with language and non-language competences, their motivation and learning styles are far from similar or uniform. Accordingly, we do not expect them to reach the same proficiency level, but each of them will follow his/her own path to knowledge and competences, in keeping with his or her abilities, interests and efforts. In our methodological framework, progress is always regarded as individualized, taking into account the starting point of each student as well as the growth exhibited. Such a methodological approach allows us to treat more justly and respectfully students who may have started off with less experience in foreign language learning, underdeveloped language awareness, or less opportunities to develop their metacognitive and cognitive competences.

A crucial role is played by individualization and differentiation as methodological key to overcoming instability and heterogeneity of the group. In the past few years a major attention in our university context has been given to semi-autonomous and autonomous learning processes. Fostering self awareness of our students as LSP learners, as well as leading them the way towards a more autonomous approach to language and subject-matter learning, thus opening the door for their future lifelong learning (Jarvis 2007: 134), constitutes another important aspect of our methodological approach.

4. Challanges and prospects of teaching Italian for Specific purposes in tertiary settings

While teaching Italian for social sciences and humanities in the context described above is a rich and rewarding experience, there are some unique challenges involved that influence significantly our decisions regarding the organization and development of the curriculum.

One of the first and most obvious challenges lies in a large number of students (60-80) interested in learning Italian. Due to a lack of organizational solutions for dividing students into smaller groups we end up with a single, very large group of students who, on top of that, study different disciplines. Working in large, heterogeneous groups requires a special approach to creating and developing curriculum. Organizational complexity of the Faculty of Philosophy, comprising ten departments (some of which are disciplinary rather distant) calls for careful and thorough course planning and programming. In practice, this means, that course materials should be equally relevant, informative and useful for all the interest groups: for instance, a specialized text analyzed in classroom should ideally cover all the majors of our students, as we assume that psychology students would have motivation issues if the lesson focused on, let's say Pindar's poetry or excavation reports. There are, however, creative and fulfilling ways of turning the disadvantages of heterogeneous groups into a unique opportunity and challenge of finding texts that would cover more disciplines such as education in ancient Rome, or philosophical, sociological and psychological implications in primitive art.

Additionally, one should not overlook some other potentially challenging circumstances such as: different levels of students' motivation, or their different level of language and subject matter proficiency, or their reluctance to engage in exploring innovative ways of learning (we propose inferencing, activating the pre-existing knowledge of the world, searching for personal learning style etc.). There are no final or easy solutions for these matters. What is needed is rather an open mind and a handful of creative ideas to lessen the risks of failure and enhance the positive effects when possible.

What are the prospects of teaching Italian for social sciences and humanities in Serbian tertiary settings? It is expected that the interest for Italian for specific purposes will likely survive, regardless of the supremacy of English, due to valuable specialized literature in Italian still existing and "on the market". The unfixedness of curriculum issues and readiness to change rapidly and constantly in order to meet students' specific needs as well as learner-centred orientation have potentials to attract more students.

As we continue to research and monitor the new trends in the language of social sciences and humanities discourse communities, we must not forget to refresh continually needs analysis and organizational issues in order to keep an open mind for further adjustments and improvements.

It is our strong belief that teaching LSP is different from teaching general language in so much as learning the language in question is not an end in itself but it is a useful tool and a key to entering the world of science and profession. In order to accomplish the task of teaching students how to use language skillfully and efficiently to serve their means, we need to rely on cognitive and inductive teaching methods, on a better collaboration with subject matter teachers, as well as on fostering broader autonomy in language learning with a view to developing students into reflective professionals.

Learning from our previous experience and taking into account students' suggestions and modern trends in this line of teaching pedagogy, we at the Faculty of Philosophy, hope to remain one of the strongholds of plurilingualism and diversity at Serbian university.

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The language of impeachment in the trial of the Philippine Chief Justice

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Abstract. This paper focuses on the language used in the impeachment of the Philippine Chief Justice. The data, treated here as a power resource, come from the opening statements of the heads of the prosecution and the defense teams in the Senate trial. Drawing on the interdisciplinary perspective of critical discourse analysis, which combines textual and social analysis (Fairclough, 1997; Fairclough and Wodak, 1997), the study focuses on the use of language in the impeachment of the Chief Justice in the halls of the Senate as an instrument of control. It examines how ideological strategies such as positive self- and negative other- presentation as well as strategies of legitimization and delegitimization or derogation are linguistically constructed by the 'power elites' (van Dijk, 1993). It analyzes the linguistic devices to make the opaque aspects of discourse explicit and to show how language is used to influence the minds of the public and indirectly control their actions. The analysis reveals that the discourses of both teams show the struggle for power between the branches of the government, thereby establishing that the language of impeachment is ideological--exposing how the power elites establish power and relationships in the context of Philippine society.

Keywords. Critical discourse analysis, ideological strategies, language of impeachment, positive self- and negative other- presentation, strategies of legitimization and delegitimization.

1. Introduction

The impeachment of Philippine Chief Justice Renato Corona in 2012 has become a history changing event for the country as Corona was the first Chief Justice to have been impeached from his office. The timeline of events leading to his impeachment trial provides a glimpse of a man who was close to the former president and whose appointment to the Supreme Court came under heavy scrutiny and a newly-elected president determined to put an end to his power. This is the context of this study—the struggle for power between the Executive branch of the government versus the Judiciary, as evident in the discourses during the impeachment trial.

This study is premised on the belief that language users accomplish social actions in their interactions, and that every instance of language use can transform society, including power relations (Fairclough and Wodak, 1997).

This interplay of power as constructed in discourse is the focus of Critical Discourse Analysis (CDA). The notion of power, more specifically the social power of groups or institutions, according to van Dijk (2001) is crucial in most critical work of discourse.

Furthermore, CDA sees language as a form of social practice (Fairclough and Wodak, 1997; Fairclough, 1997; van Dijk, 1993; Titscher, Meyer, Wodak, & Vetter, 2000) and discourse is "an inherent part of society and partakes in all society's injustices (van Dijk, 1997). This study on the language of impeachment in the trial of the Philippine Chief Justice examines how power elites establish power and relationships in the context of the Philippine society.

The study draws on the interdisciplinary perspective of CDA. This examines how ideological strategies such as positive self- and negative other-presentation, as well as strategies of legitimization and delegitimization or derogation are constructed by the "power elites" (van Dijk, 1993).

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2. The analysis and interpretation of data

The study looks at various linguistic devices such as topics, implications, presuppositions lexicalizations, as well as style and rhetorical devices to make the opaque aspects of discourse explicit.

2.1. Topics

In terms of topics, the use of "we" in both the discourses of the defense and the prosecution shows a high degree of exclusivity, e.g.:"By issuing such verdict, we took the first step towards the fulfilment of our oath...(Statement 8)" Clearly, the public does not issue verdicts on impeachment.

Tab. 1 interestingly shows that while the focus of the trial is Corona and/or his impeachment, it is outranked by the use of "we" (prosecution), which besides being the most frequent topic, is endowed with much power. In effect, it appears that the trial is about the power of the House, and not about the impeachment of Corona.

Topics	Frequency/Occurrence (1135 words per 1000 words (N))
Prosecution/We/I/*Natin*/ Representative of people	14.9
Chief Justice/Renato Corona/He / Corona's Appointment/Standards/ Pagkatao/Loyalty, loyal servant / Deep indebtedness/Mockery	10.6
Supreme Court/Arellano, Abad Santos/Code of judicial conduct/ Justice/Governing principle/ Acceptability/ Constitution	7.0
Impeachment; impeach/Article	3.5
Filipino people/Power of people	1.7

Table 1: Topics and their associated words in the discourse of the prosecution

The same can be said about the discourse of the defense (more about the power of the Supreme Court).

Tab. 2 shows that in the discourse of the defense, Corona is rarely used as the topic—showing that he is a non-issue in the trial. In the discourse of the prosecution, Aquino is never a topic, in effect saying that this impeachment is neither about the president nor the president's wishes (See Tab.1). Note that this is the opposite in the discourse of the defense—Aquino ranks second among the most frequent topics.

Topics	Frequency/Occurrence (1302 words per 1000 words (N))
Supreme Court/*Hukuman*/Decisions	7.6
President Aquino/He, His/Executive office / Crusading officials	7.6
Defense/We/I/*Ako*/	6.1
Impeachment; articles of/ Those/Complaint/Issues/ Properties	6.1
Prosecution/Complainants/ House of Representatives/ *Sila*, *Nila*	4.6
Chief Justice	3.8

Table 2: Topics and their associated words in the discourse of the defense

It is important to note here that the construction of "we" is a construction of identity, which is linked to power. Both the prosecution and the defense are presented as powerful. The prosecution portrays itself as an agent of change.

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2.2. Lexicalizations

The choice of lexical items and their associated terms implements the ideological strategy of positive self- and negative other- presentation.

Fig. 1 affirms the statements made earlier that the prosecution's use of "we" conveys power. "We," referred to by the other terms such as the prosecution, the legislature, the house, and the representatives of the people, can do so many things such as "uphold the people's will," "of service to the country," and "search the truth," among others.
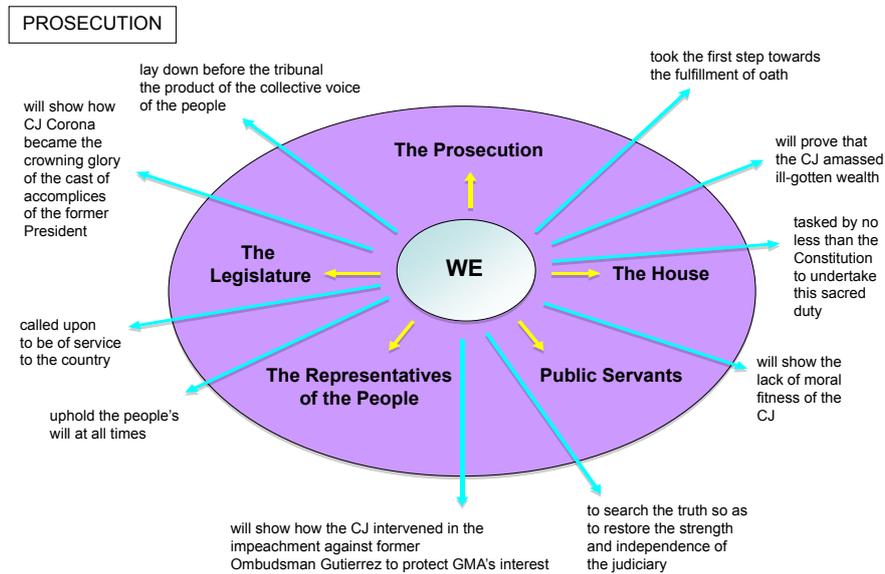
Figure 1: Sample associated terms for "we" for prosecution

While the prosecution is portrayed positively in its own discourse, the *other*, that is, the Chief Justice, is presented negatively. Fig. 2 shows the terms associated with the Chief Justice: "crowning glory of the cast of accomplices", "an enemy to good government", "loyal servant to former president", "sold country for a mess of pottage", among others.
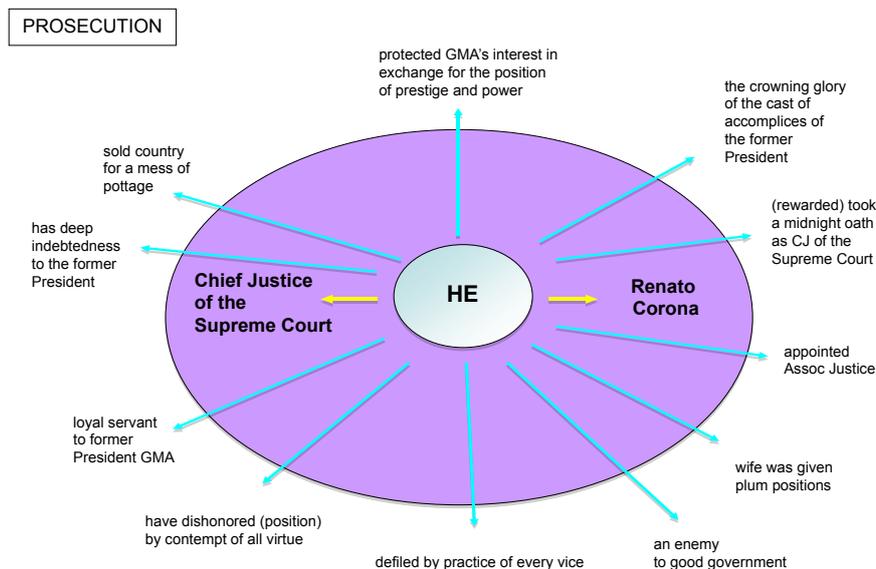
Figure 2: Sample associated terms for the Chief Justice for prosecution

The defense, on the other hand, focuses on the Supreme Court and President Aquino in its discourse. Fig. 3 shows that in its choice of lexical items, it at times presents the Supreme Court side by side with the Chief Justice, thereby emphasizing their good qualities. Associated with the Supreme Court and the Chief Justice are the phrases "do not betray the public trust,"

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"cannot be considered the enemies of the people," and "cannot be considered as obstacles to clean government."
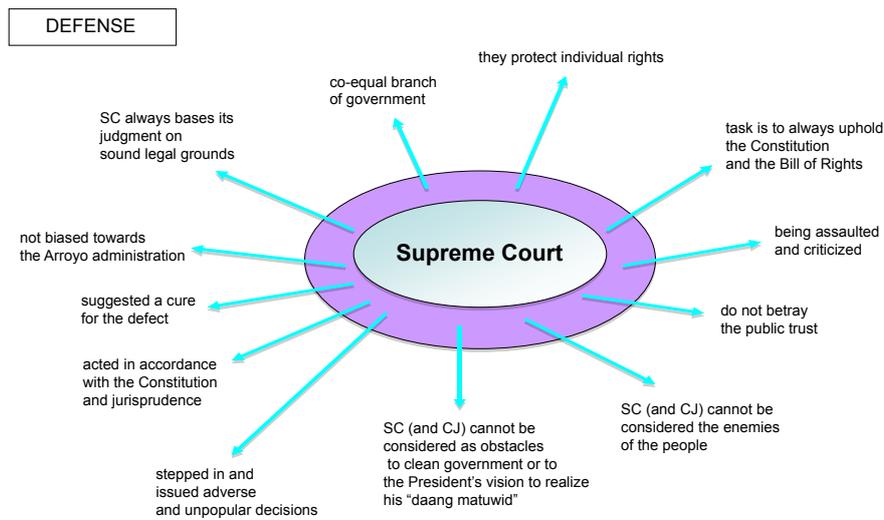
Figure 3: Sample associated terms for the Supreme Court for the defense

The defense negatively portrays the president in its discourse. As shown in Fig. 4, sometimes, the defense is very explicit it its criticism such as when it uses the following terms: "antagonistic to the court," "obsessive in the pursuit of his goal," "stubbornly refused to adapt such simple amendment."
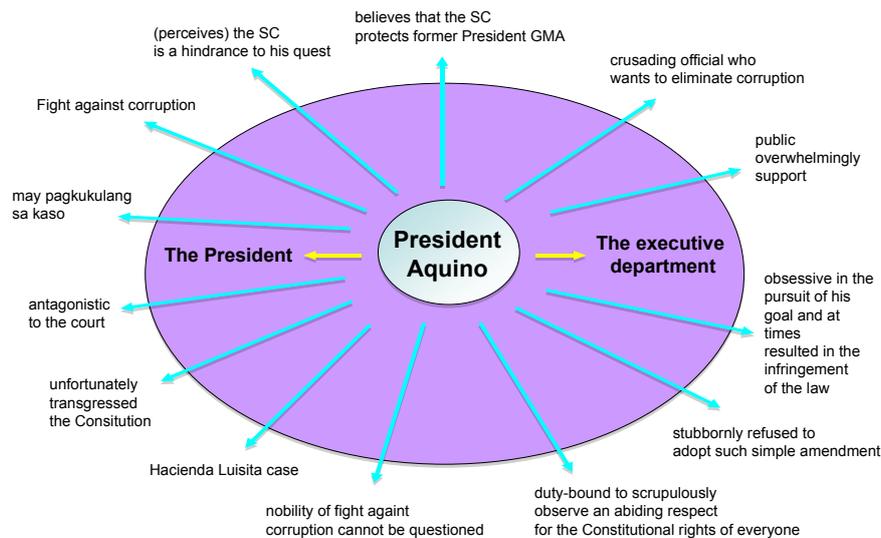
Figure 4: Sample associated terms for President Aquino for the defense

2.3. Presuppositions and implications

The discourse of both the prosecution and the defense teams are replete with presuppositions and implications, thereby making indirect attacks to some parties. Statement 11 of the prosecution, „We are here because one man—CJ Renato Corona--- has bartered away for the pot of porridge the effectiveness, independence, and honor of the SC," presupposes that the former Supreme Court was effective, independent, and honorable. The phrase „bartered away" presupposes the presence of another party—that is, the former President Arroyo. The whole statement implies that the Chief Justice has caused the loss of the „virtues" of the judiciary.

When the defense, on the other hand, states, "The impeachment finds its roots in President Aquino's fight against corruption and his perception that the SC is a hindrance to his quest," the

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defense in effect reminds the public about the president's campaign slogan on the elimination of corruption in government. The statement also presupposes that the Chief Justice was appointed by the former president and so is regarded by the president as an ally of the former president. All these imply that the President is the "prime mover" of the impeachment case against Chief Justice Corona.

The discourse of the prosecution makes constant reference to the House of Representatives' "oath" and "power." Clearly, theirs is a legitimization discourse. In the process of self-legitimization, the prosecution engages in the delegitimation or derogation of the *other* (CJ Corona). However, while the discourse of the prosecution is explicit on the wrongs and flaws of Corona, it is silent on the corruption of elective officials.

The discourse of the defense, on the other hand, implies that CJ Corona is an ordinary person just like anyone, who has to be afforded his rights under the Constitution.

2.4. Style and rhetorical devices

In terms of style and rhetorical devices, the discourses of both the prosecution and the defense use code-switching to connect the discourse producers to a greater number of audience. It is also utilized for emphasis. It is interesting to note that the defense, in juxtaposing the President and Diokno, opts for an indirect attack on the President.

Both the defense and the prosecution give detailed and specific information when it serves them. Their statements make references to previous events and circumstances and to great men.

The prosecution, in its closing statements says "In the name of God, go!" This is a case of "demonization of the enemy," a derogation strategy employed for the discourse consumers to see that the *other* is the enemy. The discourse shows that this impeachment is a battle between good and evil.

3. Generalizations

Taking into account the linguistic items in the discourses, the prosecution presents itself in a positive manner, and preserves its legitimacy and the legitimacy of its actions in the process. On the other hand, the *other*- CJ Corona, is presented in a negative way. The *other*- Corona, is portrayed as 'evil' and, therefore, must be 'expunged' from office. The binary structure of "we" (the prosecution) and "he" (Corona) is an ideological form- legitimizes the prosecution and delegitimizes Corona.
The strategy of derogation is very subtle and indirect in the discourse of the defense. Not so in the discourse of the prosecution, that it used the strategy to the point of "demonizing" the other.
The discourses show a battle between the branches of the government, or between the "power elites"-- The Supreme Court vs President Aquino (Defense) and the House of Representatives vs the Chief Justice. It is a struggle for power-- a fight between the Executive and The Judiciary- with the House as in instrument of the Executive in the impeachment of the Chief Justice.
The discourses, therefore, are ideological as they construct beliefs and establish power and relationships.

4. Acknowledgements

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Linguistic aspects of translating Russian legal terminology into Croatian language

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Abstract. The purpose of this paper is a contrastive analysis based and limited on the text of the Limited Liability Company Act and the aim is to show comparison of translations of key terms, structure of the text in both legal Acts and languages, Russian and Croatian. The scope of this research is to present similarities and differences between two languages and two legal systems through the interpretation of Limited Liability Company Acts. Paper is based on comparative analysis of two legal Acts and semantic analysis of legal terms in those Acts (such as *izjava*/the Statement; in Russian language устав/the Statute). The specificity of this analysis is that for the first time is comparing Russian and Croatian legal systems on the example of the legal act and legal language with a conclusion that the key role in the translation process belongs to the translator.

Keywords. Legal terminology, translation, Croatian language, Russian language.

1. Introduction

A foothold for this paper is in the Roman Jacobson's Linguistic Aspects of Translation (1959). According to his semiotic approach to the study of language, he states that meaning of a word is a linguistic phenomenon, and translation can happen in three ways: *intralingual*, *interlingual* and *intersemiotic* (Jacobson 1959: 233). In this paper author has focused on interlingual translation, which represents the traditional concept of translation of the source text (ST) to the target text (TT). Equivalence in translation is not considered only as a transfer of text from one language to another, but as a function of ST in the TT, i.e. in the target language.

The language of the legal profession is a language for special purposes (LSP) and requires not only knowledge of the standard language (administrative and business style of standard language), but also knowledge of the law. Legal translation is an interdisciplinary activity because it includes knowledge of the language and of the law. A Translator is a bridge between two legal systems and languages. He/she has to adopt different competencies, knowledge of the legal translation and different legal concepts of different systems (Croatian and Russian, in this case) and the method for establishing equivalents on the legal and linguistic level. A Translator has to be aware when translate similar terms or „false friends". Translator must know the strategies and concepts of translating legal texts, compose their own handy "glossaries" and learn to deal with existing terminology resources. Mediators between legal text, language and society or different cultures are translators and translation. His/her work makes easier the knowledge and translation experience that greatly reduces the time of translation.

2. A comparative analysis of legal systems and terminology

Both legal systems, Croatian and Russian, belong to the Civil (Continental) law/Гражданское право/ Građansko pravo, based on the late Roman law. The similarities are that the legal terminology systematized in the 19th century based the most on the German and Austrian tradition. After the collapse of both political systems in 1990th, every state follows its own path of political development, and Republic of Croatia is now a parliamentary democracy and the Russian Federation is Federal semi-presidential republic. Similarities are that Croatia and Russian have brought The Constitution in 1990s. Differences are that Russia has the latest changes in 2008. of Constitution from 1993. Croatia has made the latest changes in June of 2010,

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regarding entering Croatia in EU. Not only Constitution was changed. Due to the liberalization of market relations and international communications, in both countries changed the most the commercial law and in this segment legal terminology.

In Croatian language, there is usage of several words, which describes similar legal concepts. Term *trgovačko društvo* (Company) is used to denote specific types of organization, such as *d.o.o.* (*dioničko društvo s ograničenom odgovornošću*/ Private Limited Liability Company or Limited Liability Company) and *d.d.* (*dioničko društvo*/ Public Limited Liability Company or Joint Stock Company) and term *tvrtka* (firm) is an organization involved in the trade of goods, services, or both to consumers and has wider semantic field than d.o.o. or d.d., which are complete, precise and specified terms. The Croatian Companies Act (*Zakon o trgovačkim društvima*), with the latest changes in 2013th (NN 68/2013 from 28.05.2013. with the effective date of the law 15th of June 2013.) in general terms gives meaning and explanation of terms: retailers, trading companies, individual trader. It distinguishes between "personal companies" with individuals closely associated with the business (*društva osoba*) and "capital companies" (*društva kapitala*) based on associating capital rather than persons, both types being legal entities. „Personal companies" include both general (unlimited) partnerships (*javno trgovačko društvo – j.t.d.*) and limited partnerships (*komanditno društvo – k.d.*). „Capital companies" are joint-stock companies (*dioničko društvo – d.d.*), limited liability companies (*društvo s ograničenom odgovornošću - d.o.o.*), and the economic interest association, or EIA (*gospodarsko-interesno udruženje - GIU*).

In the Croatian legislation, the inseparable part of the Companies Act is the establishment of a Limited Liability Company. In Russian legislation, this law is located in a separate Federal law "About Limited Liability Companies" (LLC) / Федеральный закон «Об ООО» (from 9.12.2012 N 282-ФЗ (FZ) and entered into force on 2nd January 2013.). Besides the law of the LLC, there is a separate law on Joint Stock Companies (Федеральный закон «Об акционерных обществах» (ОВ АО) since 26.12.1995 N 208-FZ (entered into force in 24.11.1995.). According to this law, companies in accordance with the Russian law, can be divided to Closed joint stock company/ Zatvoreno dioničko društvo/Закрытое акционерное общество (ZAO) and Open Joint Stock Company/Otvoreno dioničko društvo/Открытое акционерное общество (OAO). The main distinguishing features of open and closed joint stock companies are the conditions and procedure for placement of shares and the rights of shareholders at their disposal and pre-emption. The joint-stock companies whose founders are the Russian Federation, a subject of the Russian Federation or the municipality may only be open joint-stock companies (JSC).

3. A contrastive analysis of legal terms in Limited Liability Company Acts

3.1. Similarities and differences in abbreviation of d.o.o. and OOO (Limited Liability Company)

The differences are in the abbreviation of the company and writing punctuation. In the Russian language, as opposed to the Croatian language, is not written point behind the (ordinal) numbers (ie years) and in this case period behind *OOO*. Abbreviation is written with a capital letters, which is one of the characteristics of the Russian language. The Croatian language abbreviation *d.o.o.* is always written with a small letters and after each letter is written a period. Translation is fully preserved form and has the same number of words with the proposal *s/c* (with) between the word company (društvo/ общество) and a limited liability (ograničenom odgovornošću/ ограниченной ответственностью):

d.o.o. – društvo s ograničenom odgovornošću and OOO – Общество с ограниченной ответственностью (Obshchestvo s ogranichennoy otvetstvennostyu). Considering that fact, these two languages are both Slavic languages. Croatian language belongs to the South Slavic group and Russian language to the East Slavic group and it is not surprising that there are similarities in grammatical relations.

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3.2. The legal definition of the d.o.o./OOO in Croatian and Russian languages

In Croatia, a private limited liability company is termed *društvo s ograničenom odgovornošću* ("company with limited liability"), Croatian abbreviation is d.o.o., and this is the most frequent type of company in Croatia. Definition is taken from "Zakon o trgovačkim društvima", article 385.[1] and English translation is from Croatian Chamber of Economy:

> „Društvo s ograničenom odgovornošću je trgovačko društvo u koje jedna ili više pravnih ili fizičkih osoba ulažu temeljne uloge s kojima sudjeluju u unaprijed dogovorenom temeljnom kapitalu. Temeljni ulozi ne moraju biti jednaki. Nijedan osnivač ne može kod osnivanja društva preuzeti više temeljnih uloga. Poslovni udjeli se ne mogu izraziti u vrijednosnim papirima."

> [A private limited company is one in which one or more legal entities or natural persons invest in initial authorized stakes, with which they participate in the total authorized capital as contractually set beforehand. Authorized stakes are not necessarily of the same amount. In the process of company formation, no founder may acquire multiple authorized stakes. The stakes may not take the form of securities.][2]

In Russian language definition is:

> «Óбщество с ограни́ченной отве́тственностью (общепринятое сокращение — ООО) — учрежденное одним или несколькими юридическими и/или физическими лицами хозяйственное общество, уставный капитал которого разделён на доли; участники общества не отвечают по его обязательствам и несут риск убытков, связанных с деятельностью общества, в пределах стоимости принадлежащих им долей в уставном капитале общества.»[3]

A contrastive analysis of two main definitions of the LLC leads to the conclusion, that there are no big differences between them in the basic meaning. At the legal level, they are also similar structurally designed and translation would be equivalent. In syntactic overview, there is a big difference. Definition of the LLC in Croatian law is formulated in four sentences, but in Russian law is only one sentence for the same meaning. Inappropriately long sentences are one of the characteristics of the law language and very common in legal documents, but make legal documents incomprehensible.

3.3. Parts of the Statement on establishment

LLC is established on the articles of the Statement, which must be signed by all founders in the form of a notarized document. If the company is established by just one person, the founding document is a statement on establishment submitted by the company founder in the form of a notarized document. The totality of each individual owner's rights and obligations constitutes his/her stake in the company. The size of a stake is proportional to the size of authorized capital paid up. (HGK, ZTD, FZ OOO)

The following are the main parts of the Statement:

- information about the founder (name and surname or company name, founder's residence or registered office, and, if the founder is a natural person, Personal Identification Number: *Osobni identifikacijski broj* (OIB) in Croatia and *основной государственный регистрационный номер* (ОГРН)/Primary State Registration Number and *идентификационный номер налогоплательщика* (ИНН)/ Taxpayer Identification Number in Russian Federation

- company name and registered office

- business activity of the company

- total amount of authorized capital (share capital)

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- amount of each investor's individual ownership stake (if investment has been made in tangibles and intangibles, their detailed description and valuation is required)

- indication whether or not the company is established as a going concern

- the rights and obligations that the owners have with respect to the company, in addition to the obligation to pay for the ownership stake, as well as the rights and obligations of the company with respect its founders.

Croatian establishing act of *d.o.o.* consists of *Izjava o osnivanju* (The Statement of establishing), which must contain the following articles:

1. *Tvrtka društva* (Company name)

2. *Osnivač društva* (The founder of the company)

3. *Sjedište društva* (Company headquarters)

4. *Predmet poslovanja društva* (Business activity)

5. *Uprava društva* (The Management Board)

6. *Temeljni kapital* (Authorized share capital)

7. *Trajanje društva* (The duration of the company)

8. *Zaključne odredbe* (Final regulations)

In the Russian establishing act of OOO i.e. *Устав* (The Statute) is located in the second Division, Subsection 12 (Глава II. Учреждение общества, Статья 12. Устав общества) of the Federal law "About Limited Liability Companies" (Федеральный закон «Об ООО»). The Federal law has the following parts:

Глава I. Общие положения

Глава II. Учреждение общества

Глава III. Уставный капитал общества. Имущество общества

Глава III. Ведение списка участников общества

Глава IV. Управление в обществе

Глава V. Реорганизация и ликвидация общества

Глава VI. Заключительные положения

Устав or the Statute has the following parts:

1. щие положения

2. Цели и предмет деятельности Общества

3. Правовой статус Общества

4. Уставный капитал Общества

5. Права и обязанности участников Общества

6. Продажа, отчуждение либо переход доли или части доли в уставном капитале Общества к другому лицу, выход из Общества. Ведение списка участников Общества

7. Управление Обществом. Общее собрание участников Общества

8. Генеральный директор

9. Крупные сделки и сделки, в совершении которых имеется заинтересованность

10. Имущество, учет и отчетность

11. Распределение прибыли

12. Реорганизация и ликвидация Общества

4. Semantic analysis of legal terms

In both languages there is a basic document of the company establishment, but with different terms. The Croatian language has in document name *Izjava*/The Statement, in Russian language is *Устав*/The Statute/Statut. The Statement has to be translated into Russian language with *Заявление* and Russian word *Устав* with the Croatian *Statut*. In Croatian language, *statut*/the Statute means also an Act of local and territorial (regional) governments. The statute (Pravni leksikon, 2006) regulate self-scope units, its features, public recognition, organization, powers and operation of the body, way of doing business, forms of consulting citizens. Also, a referendum on matters within the scope of, local authority, organization and operation of public services, the forms of cooperation between local and territorial (regional) governments, and other issues of importance to the realization of rights and obligations. Special importance Statute has in international private law, which means the same relevant legal system for a specific category of bonding (e.g. personal statute is legally relevant to personal relationships, inheritance statute is the applicable law relating to inheritance law, the contractual statute is a law applicable to contractual relations, etc.). Term *Ustav* in Croatian language means The Constitution and is "the fundamental act of a State which establishes political and legal order" or in Russian language *Конституция* (Konstitutsiya) with definition of "the highest legal act of the Russian Federation". In contrast to the Croatian word *Ustav*, the Russian word *Устав* means something else:

> «Устав как учредительный документ юридического лица» or

> «Уста́в — свод правил, регулирующих организацию и порядок деятельности в какой-либо определённой сфере отношений или какого-либо государственного органа, предприятия, учреждения.»

Устав as "the founding document of the legal entity" or "a set of rules governing the organization and procedure of activity in a particular area or a public relations agency, businesses and institutions."

Polysemy (Collins, 2003: "the existence of several meanings in a single word"), synonymy (Collins, 2003: "a word that means the same or nearly the same as another word"), homonymy (Oxford Dictionary: "each of two or more words having the same spelling or pronunciation but different meanings and origins") or homophony (Oxford Dictionary: having the same pronunciation as another word or others but different meaning, origin, or spelling). Neither of them is desirable in the legal language because it can lead to an incorrect translation, as in these cases above. Term for this is a "false friend". One of the definitions of "false friends" has given Hayward and Moulin (1984: 190): "Confusion arises because word A (which belongs to the foreign language being learned or used) looks or sounds exactly or nearly like word B, which belongs to the learner's mother tongue. The user then establishes an unwarranted inter-lingual equivalence on the basis of this total or partial similarity." *False friends* translator must avoid, the good example is *Ustav*/the Constitution - as the highest legal document of the State, or in Russian language as a founding document for the legal entity, while in Russian language there is another word for the Constitution – similar to the English word *Konstitutsiya*.

5. Croatian and Russian language policy and modality words

Due to the Croatian accession to the EU, Croatia intensively is changing laws and harmonizing them with the acquis communautaire and this are resulted with a change in the Companies Act. For this reason, Croatia changed its law on the 7th of June 2013. Changed was Subsection 20. Paragraph 1. as follows:

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(1) Naznaka imena tvrtke trgovačkog društva mora biti na hrvatskom jeziku i latiničnom pismu ili na službenom jeziku države članice Europske unije i latiničnom pismu, a mogu se koristiti i arapski brojevi. Ostali sastojci tvrtke moraju biti na hrvatskom jeziku i latiničnom pismu.

[(1) The name of the company must be in the Croatian language and Latin script or in the official language of the European Union and Latin script, and can be used Arabic numerals. Other company's parts need to be in the Croatian language and Latin script.]

This is a direct change related to Croatian accession to the EU. Language policy has been so far that all company names must be in the Croatian language or dead languages (Latin or Greek) with the required translation and explanation in the Croatian language. Croatian language is a puristic language, dislikes loanwords and terms are translated, where it is possible, into Croatian language. However, the question is, will Croatian language policy now allow to continue the care for the language, if we'll be allowed the use of words in other languages (by the law in "foreign words"). However, for the Company registration at the Court a copy of the dictionary page for an explanation and translation of the term is requested. Russian Federation follows her owns linguistic path and the path of the Law, and do not need to adjust its laws to The Community acquis, because it doesn't represent strategic importance or interest of the State. The latest modification of the Federal Law "About Limited Liability Companies" was also in 2013., changes was 27th of July (N 210-ФЗ). For the same question on the Language policy in Russian Federal Law "About Limited Liability Company Act" there is written as follows in the Division I Subsection 4 (Глава I. Общие положения Статья 4.)

«Общество должно иметь полное и вправе иметь сокращенное фирменное наименование на русском языке. Общество вправе иметь также полное и (или) сокращенное фирменное наименование на языках народов Российской Федерации и (или) иностранных языках.» (в ред. Федерального закона от 18.12.2006 N 231-ФЗ)[4]

[The Company must have the right to have a full and abbreviated name in Russian language. The Company has the right to have full and (or) the abbreviated name in the languages of the peoples (nations) of the Russian Federation and (or) foreign languages.]»[5]»

And further more:

«Фирменное наименование общества на русском языке и на языках народов Российской Федерации может содержать иноязычные заимствования в русской транскрипции или в транскрипциях языков народов Российской Федерации, за исключением терминов и аббревиатур, отражающих организационно-правовую форму общества.»[4]

[The Company name in Russian and the languages of the peoples of the Russian Federation may contain foreign-language loanwords in Russian transcription or transcription of languages of the Russian Federation, with the exception of terms and acronyms that reflect the organizational form of society.][5]

In these Subsections modality words clearly come to the fore and even more potentiating the language policy, as those two: *должно* (morati/must) and *может* (moći/may, can). Word *должно* is modal word, in the Croatian language translates with the verb *morati*, as in the English with verbs *must* and *have to*, like in examples: *должно иметь*/must. The modal must expresses obligation or necessity, certainty (Palmer, 2001) in the sence *morati*, in the first fragment of Subsection and *может содержать*/ may, can, where the verb may expresses possibility in either an epistemic or deontic sense, that is, in terms of possible circumstance or permissibility. The

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modal verb can expresses possibility in a dynamic, deontic or epistemic sense, that is, in terms of innate ability, permissibility, or possible circumstance (Palmer, 2001) in sence *moći*, in the third fragment of Subsection. A modal verb serves as an auxiliary to another verb, which appears in infinitive form. The first syntagm refers to the *necessity* of the use of the Russian language, as the second phrase refers to the *possibility* to use also loan words from foreign languages, but in the Russian transcription. Using the Russian transcription of loanwords is another characteristic of the Russian language, therefore, words does not look like the original, but are adapted to the Cyrillic script and pronunciation of the Russian language. Differences between Russian and Croatian language policy about terms are significant. In Croatian language, as it doesn't like loanwords and rather use its own words, instead of foreign or loanwords, and considering that the name of Company has to be properly written in Croatian Standard Language or in other languages of EU but with preserving the original layout (looks) and in the Latin script.

6. Conclusion

Comparative analysis of law is study differences and similarities between the law of different countries and the importance of comparative law has increased enormously in the present age of internationalism, economic globalization and democratization.

In contrastive analysis of Russian and Croatian languages can be concluded, that they are both Slavic languages (one east and one south) and they have similarities in grammar and lexis. The differences are found in comparative analysis of two legal systems, although they belong to Civil (or Continental) law system. The law extensively changed after 1990s, especially in Croatia in the 21st century, which is supposed to harmonize its laws with the EU laws, and side by side with the amendments, changed the lexis and legal terminology.

Legal translator represents a link between language and legal systems. She/he must be in the course of intensive changes and constantly has to learn new terms, in order as would not has brought in a dilemma, which causes usage of a "false friend". Functioning of the term in the legal context has a great importance for the accuracy and adequacy of the translations, especially because legal translation has the legal power of his original document and legal translator has the key role in the translation process.

7. Notes

[1] URL: http://narodne-novine.nn.hr/clanci/sluzbeni/260024.html

[2] URL: http://www2.hgk.hr/en/How_To_Start_Up_an_Enterprise_in_Croatia.asp?izbor=01_companies

[3] URL: http://www.zakonrf.info/zakon-ob-ooo

[4] URL: http://www.consultant.ru/popular/ooo/48_1.html

[5] Free translation by the Author.

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When reality forces practicality: Developing business English into a new field of B.A. studies within the Polish tertiary education system[1]

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Abstract. The article presents a new development within the Polish system of tertiary education concerning language studies. Due to the growing demand of the labour market for higher education graduates who could combine perfect language skills, including specialised variety skills, with expertise in business, more and more Polish higher education schools are opening studies in specialised languages, especially in business English. One of such schools – the State School of Higher Vocational Education in Nysa and the B.A. programme in business English constitute the topic of this paper. The article starts with some general deliberations on language studies in Poland. Then, the studies in specialised languages are discussed. The core part of this paper is the section on business English studies, their curriculum and its modification as well as the opinions on them expressed by students and graduates. Generally speaking, the paper is an attempt at presenting that reality has forced the practicality of tertiary education and that more professional practice-oriented language studies may soon replace traditional philological studies which emphasise mostly the theoretical aspects of language, paying at the same time little attention to language applications.

Keywords. ESP, business English, higher studies in ESP, curriculum development.

1. Introduction

The objective of this paper is to present a new solution in the higher education market in Poland concerning modern studies in foreign languages which differ from the traditionally understood philological studies (*i.e.* studies with a strong focus on theoretical issues related to literary and cultural studies and linguistics) in that they provide students with more practical skills, competences and knowledge relevant to the current trends in the labour market. Being one of the member states of the European Union, Poland has recently been faced with the new requirements imposed on its labour market and the labour force. In an attempt to meet those requirements, more and more higher education institutions redevelop their study programmes in order to prepare their students to the more and more demanding conditions of the labour market and one of such programmes – B.A. studies in business English – is presented in this paper.

The paper is divided into three major parts. The first section deals with the Polish higher education system and the place of language studies – in its different paradigms – within this system. Following this, the main assumptions behind opening such studies are discussed. This is done on the example of B.A. studies in business English offered in one of Polis higher schools. Moreover, attention is also directed to the curriculum and learning outcomes of the programme under discussion. The curriculum is composed of five major cores which are discussed in greater detail in the paper. Another part of the article presents the results of a survey whose aim was to assess students' and graduates' motivation to take up the studies in question and their satisfaction with them. The last part addresses the issues of modifications and improvements of the curriculum which may be considered tangible proof of the fact that the school makes every effort to offer labour market-oriented higher studies so that its graduates can easily find employment in Poland or abroad.

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Generally speaking, the article sheds light on how English for Special Purposes, in this particular case – business English – has been turned into a field of higher studies within the frameworks of Polish as well as European Union system of tertiary education.

2. Language studies in Poland

Higher studies in modern foreign languages has always attracted numerous graduates of secondary schools. It was believed that the mere profound command of a foreign language can lead to an interesting and well-paid career path and prosperous life. However, the recent changes observed in the Polish labour market allow to state that although the proficiency in a foreign language is still highly valued, it is no longer a major factor taken into consideration in the recruitment process. Along with Poland's accession to the European Union, with vanishing borders between countries and virtually unrestricted access to all cultures thanks to the snowballing processes of globalisation in nearly all spheres of human activity, the knowledge of foreign languages in viewed as a must, as a precondition of applying for any employment. Hence, it would be no exaggeration to claim that apart from an advanced command of a foreign language, employers expect their employees to have a specialised knowledge and competence in the area they run their businesses in. However, many programmes of language studies offer no practical preparation for the labour market, paying little (if any) attention to developing students' skills in other than theoretical linguistic and literary fields.

2.1. Types of higher education in foreign languages in Poland

The recent two decades have witnessed a genuine boom in the development of Polish higher institutions. Next to state universities, a number of privately-owned higher schools and colleges were established and many of them offer language studies.

Language studies are in the study programme catalogues of nearly all types of state-owned tertiary education institutions. Virtually all Polish universities have departments and study programmes of foreign languages (only the University of Cardinal Stefan Wyszyński in Warsaw does not offer study programmes of modern foreign languages). They are entitled to award their graduates with all types of degrees, ranging from B.A. through M.A. to Ph.D. Apart from universities, Polish technical universities and academies of many types offer education in foreign languages as fields of study at B.A., M.A. and sometimes also Ph.D. levels. In 1997, pursuant to the Higher Vocational School Act of 26 June 1997, the state higher vocational schools (sometimes referred to as universities of applied sciences) were established. Many of them were formed through the merger of foreign language teacher training colleges with off-campus branches and faculties of universities and technical universities. Some of them, however, were newly established institutions with no history of tertiary education. Such schools are also entitled to run B.A. studies in foreign languages and many in fact do so. There is also one more sector of state-owned tertiary education which is involved in the studies of foreign languages. There are foreign language teacher training colleges. However, in 2015 they cease to exist and therefore some of them have already been wound up, some have been made parts of other higher schools while still some educate the second- and third-year students and after they graduate, those colleges will no longer recruit new students.

Another sector of higher education in Poland which is related to foreign language education encompasses a large number of non-state tertiary education institutions, among which there are profiled university-like higher schools, technical colleges, management and business higher schools *etc.* Some of them have obtained the right to run language studies leading to a B.A. degree. Only a few can confer M.A. degrees in language studies and even fewer – Ph.D. degrees in linguistics.

From the above sketch, one interesting conclusion can be drawn. Due to the fact that modern language studies were very popular, ranking among top twenty most popular study programmes

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in Poland in the past two decades (assessed on the basis of the number of applicants to departments of foreign languages), many higher schools seem to have seen it profitable to offer such studies. This is especially true of privately owned higher schools which – in many cases – admitted students with no prior or very rudimentary command of a foreign language. Of course, this fact can be partially justified in the case of rare and oriental languages such as Danish, Norwegian, Chinese or Japanese because it is quite difficult to learn such a language in a Polish secondary school. However, admitting students who could not express themselves in English or German to the department of English or German seems to have contributed to the deteriorating quality of education in such tertiary education institutions.

2.2. Paradigms of language studies in Poland

By and large, the studies of foreign languages in Poland are pursued within two broad paradigms. The first paradigm is the "traditional philology" paradigm. At this point, a brief remark should be made on the notion of philology. This terms is often associated with historical linguistics and the study of old texts and cultures as well as a comparative analysis of language development phases (Malmkjær 1995/2006). However, in Central and Eastern European academic circles, the studies of modern languages, literatures and cultures have come to be known as philologies, which is well evidence by a collection of names for the departments of modern languages (*e.g.* "Institute of Slavic Philology", "Department of English Philology", "Institute of German Philology") while these philology-related names in fact denote the studies in the linguistics, literature(s) and culture(s) of modern languages. Most of these philological studies, however, concentrate on theoretical and academic aspects and for this reason the name of this paradigm rightly suggests that it is more theoretical in nature. The umbrella term "philological paradigm" covers all those departments of studies of foreign languages (*e.g.* English philology, German philology, Spanish philology, Russian philology) which offer their students only a limited number of professional specialisation options. Most of them offer academic specialisations, with no (or very limited) focus on language applications, such linguistics, literature and cultural studies. Some, however, are more labour market-oriented and educate their students mainly in two professional specialisations which are commonly associated with the work in foreign languages: language teaching or translation. This does not mean that they become more practical than theoretical as still theory seems to prevail in the curricula. However, at present a significant shift in orientation can be observed in the "traditional philology" paradigm studies as new specialisations in language applications are offered to students. B.A. studies in business English, to which the next sections of this paper are devoted, are a good case in point.

The graduates of traditional philologies seem to find themselves in quite a difficult situation as more and more of them find it hard to find profitable employment due to their lack of non-linguistic skills and unsuitability of their knowledge to the real needs of employers. The demand for language teachers or translation theoreticians is relatively small. Moreover, in Poland there are hardly any job opportunities for linguists and literature specialists.

Another paradigm of language studies is the "applied linguistics" paradigm. This paradigm encompasses all those programmes of tertiary education which focus more on professional skills and qualifications developed as an outcome of pursuing studies in one of the professional specialisations such as language teaching, translation, interpreting or languages for special purposes and their translation. In other words, such studies offer their students the possibility of becoming familiarised with the applications of a foreign language in such areas as technology, education or business.

Unlike the graduates of traditional theory-oriented philologies, the graduates of applied linguistics are in a better situation in the labour market as there is increasingly greater demand for graduates with perfect language skills combined with expertise in economics/business/IT *etc.* Equally great demand is for translators/interpreters with some background in non-linguistic fields (economics/finance/IT/ medicine *etc.*). The new, more competitive conditions

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of the Polish labour market, the opening of borders and giving Polish citizens the opportunity for working abroad have contributed to the unprecedented situation in which Polish tertiary education institutions can present their flexibility and adjust themselves to the real needs of the labour market. Some Polish higher schools have seized this opportunity and have come up with new offers for potential students, giving them a chance to combine language skills with expertise in non-linguistic fields such as business.

To sum up this section, it might be stated that like all other aspects of social activity, tertiary education needs changes and modifications and the labour market should be a form of a yardstick, against which the quality and effectiveness of this education should be measured. Therefore, one of the pivotal issues of tertiary education should be to adjust the educational offer to the genuine needs and conditions of the labour market. Some Polish higher schools offering language studies appear to have learnt this lesson well.

3. Studies in specialised languages/languages for special purposes in the Polish higher education context – the case of business English

Due to the demand for professionals who can communicate in both written and spoken specialised varieties of English, several Polish tertiary education institutions have opened B.A. and M.A. study programmes in English for Special Purposes, mainly in business English. Among such schools are Warsaw University and its Faculty of Applied Linguistics, where students can obtain B.A., M.A. and Ph.D. degrees as well as pursue their postgraduate studies in specialised languages. Another example comes from the University of Wrocław, where B.A. and M.A. holders can continue their education in the Postgraduate Studies in Translation, which is a *de facto* business and legal translation programme with strong focus on specialised terminology and its translation. B.A. studies in specialised English (*i.e.* in business English) can also be undertaken in state schools of higher vocational educations, for instance, in Elbląg (B.A. studies in foreign languages in business) or in Nysa (B.A. studies in business English, as presented below) as well as at Częstochowa University of Technology, where at the Faculty of Management, students can study business English, graduating with a B.A. degree.

By and large, there are two models of the organisation of business English studies in Poland. In the first model, business English is just a specialisation of the speciality of philology. To put it differently, students study philology and their language speciality is English philology. They might have a few specialisation options and one of them is business English. The curriculum developed in this way has a number of drawbacks. First of all, as it is English philology, there is a need to include all philological courses and the emphasis is still put on academic and theoretical courses such as literature or theoretical linguistics. Such a curriculum in principle must have a relatively small number of hours devoted to specialisation courses (usually only business language-oriented ones are included) and this results in the fact that there are no or very few courses in business- and law-related issues. Furthermore, since English philology belongs to the arts, its graduates are expected to achieve learning outcomes within the humanities only (according to the National Qualifications Framework).

In the second model of the organisation of business English studies, the programme in question is located on the level of speciality within philology. Compared to the first model, it is higher in the hierarchy of programme modules (programme – speciality – specialisation) and therefore less emphasis is put on typical academic courses (less emphasis on academic courses such as literature, theoretical linguistics) while more focus is attached to hands-on skills and competences needed in business environment and business occupations. Moreover, business English studies constructed in this way offer a relatively high number of hours devoted to specialisation courses (business, economics, management, economy, EU programmes and funds, law). What is also different from the first model is that the graduates of business English are expected to achieve a different set of learning outcomes (the combination of the humanities, social studies and economics). Thus, it may be concluded that in the context of the conditions of modern labour

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market, the second model seems to be more preferable as it provides students with more market-related knowledge, skills and competences, which – in turn – increases graduates' chances in the highly competitive labour market in Poland.

4. B.A. studies in business English as an example of market-orientation, flexibility and practicality of higher studies

One of the higher schools whose main aim is to prepare students to enter the labour market with well-developed skills, high professional competence and knowledge is the State School of Higher Vocational Education in Nysa (also known as the University of Applied Sciences). Established on 01 June 2001 as one of several schools with vocational orientation, the school in Nysa offers a number of fields of study within the humanities, economics, technology and medical sciences, including the studies in foreign languages.

The studies in foreign languages (German and English) are offered by the Institute of Modern Languages which comprises three sections: the Section of English Studies (established in 2004), offering traditional English philology studies, the Section of German Studies (established in 2001), where students can pursue traditional German philology studies and the Section of Business English (established in 2007), which provides education in business English. From 2004 to 2009 there was one more unit in the organisational structure of the Institute of Modern Languages – the Section of Czech Studies but due to a rather meagre interest in Czech studies it was closed. As of 26 June 2013, there were 96 students of business English and the total number of business English graduates holding a B.A. degree was 96 (data obtained directly from the Institute of Modern Languages).

4.1. The curriculum of B.A. studies in business English

The main assumptions which formed the basis for developing a curriculum of business English studies were connected with the growing demand for business English specialists in the Polish labour market which was filled by the graduates of traditional English philology who did not know the specialised variety of English used in business environment. Therefore, the newly developed curriculum was different from the curriculum of traditional English philology in that a stronger emphasis was put on developing students' skills in general English language skills (to the B2/C1 level) as well as their practical skills in English for Special Purposes – for business. Those practical skills also encompassed the skills in business translation and interpreting as well as in working in the English language. Moreover, it was assumed that business English students should develop their understanding of major economic and legal processes taking place in business environment. Such students were also given the opportunity for developing their academic skills so that they could pursue their further academic education at the M.A. level. In brief, the major aim of the curriculum was to equip students with hands-on skills so that they could enter the labour market just after finishing their studies. Following the school's mission which stresses the importance of the practicality of higher studies, the studies in business English were organised in accordance with the maxim "Maximum of practice, minimum of theory".

The curriculum has five major components: (1) general education courses, (2) basic courses, (3) specialisation courses, (4) major area courses and (5) vocational practice. General education courses are obligatory for all fields of study at the State School of Higher Vocational Education in Nysa and for all philological studies at the B.A. level and they include: elective courses (*e.g.* philosophy history, ethics, social communication, introduction to language philosophy), information technology, public life etiquette, intellectual property and copyright, sports. The category of basic courses includes: practical English (*i.e.* speaking skills, listening skills, writing skills, academic writing skills, integrated skills: lexis and structures, practical grammar, practical phonetics) and practical second foreign language with the elements of linguistics (*e.g.* German, Czech, Spanish, Dutch). The major area courses are typical of English studies and business English and they include the following modules: introduction to linguistics, English descriptive

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grammar (*i.e.* phonetics and phonology as well as morphology and syntax), English-Polish contrastive grammar, business English, theory of translation and specialised languages, customs and institutions of the English-speaking countries, culture and literature of the English-speaking countries). The final category combines courses which provide expertise in business combined with language skills and it includes: translation, interpreting, business correspondence, B.A. seminar in business English and (applied) linguistics, introduction to business, business ethics, company management fundamentals, microeconomics, macroeconomics, office work techniques and ergonomics, commercial and administrative law, economic cooperation in the European Union and European Union programmes and funds.

The courses comprising the curriculum of B.A. studies in business English make up what has been referred to as two cores of the studies. This can be seen in Figure 1.
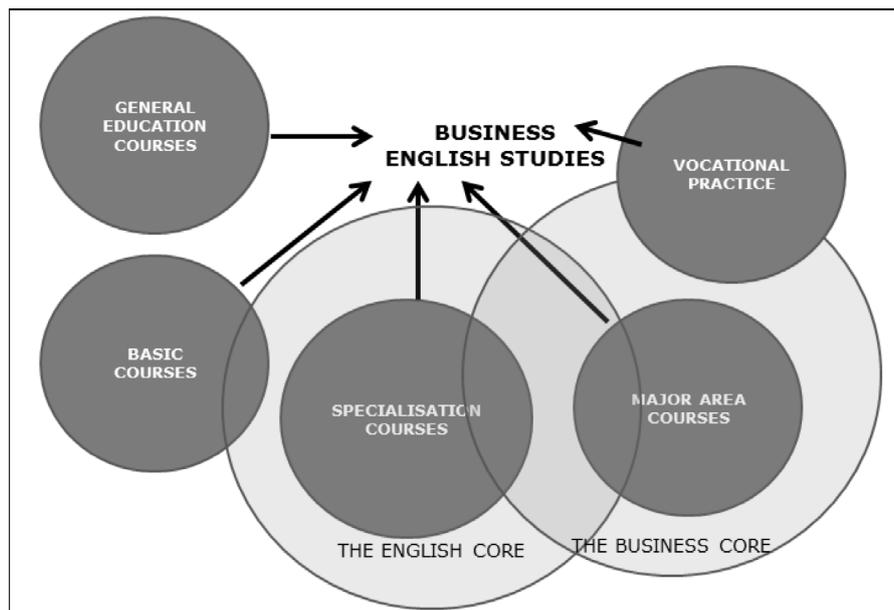
Figure 1: The idea of two cores of business English studies

The idea of two cores – the English one and the business one – helps to combine seemingly distant areas. Thanks to the English core, business English students develop their language proficiency, skills in language applications and the understanding of the English-speaking countries' cultures, traditions and institutions. The business core supports their development of expertise in business issues, hands-on skills in working in a company and practical skills in business, economics and management. It also helps them understand business-related issues and other phenomena connected with the economics, economy and law of Poland, the European Union and the English-speaking countries.

The development of the two cores was motivated by the insights from the labour market. The graduates of traditional English philology, in the course of their studies, had a different set of subjects which can be generally divided into two cores: the English core and the academic core. In many cases this resulted in the fact that they were well-prepared to continue their M.A. academic studies but not to start a professional career due to lack of practical skills and knowledge of business-related issues. The graduates of business English seem to be in a better position. The combination of the English core and the business one helps them to enter the business sector in search of a job just after their studies. It does not, however, limit their possibility of continuing their studies at the M.A. level, as many graduates of business English have done at various universities in Poland and Europe.

The observation of the trends in the labour market has also helped design the curriculum in such a way that business English students are supposed to achieve a unique set of learning outcomes in terms of skills, knowledge and social competences. Among others, business English graduates

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are supposed to: be prepared for the changing conditions of the more and more demanding labour market, be proficient speakers of English and its business discourse, have linguistic skills in other business-related discourses (*e.g.* law), be able to analyse the English language at various levels, be knowledgeable about the institutions, economics, law, customs and cultures of the English-speaking countries, have basic academic English skills (essential for those graduates who want to continue their education), have the knowledge and understanding of economics, managements and other economy- and business- related areas, including solid familiarity with the EU issues or have practical translation and interpreting skills as well as business writing skills.

Generally speaking, thanks to the combination of the two cores and the courses they include, it is possible to equip business English graduates with practical and applied skills in both language use and business, to make business English graduates more attractive than the graduates of traditional philological studies, to reduce the need of business English graduates' extra training in business issues, so badly needed by the graduates of traditional philologies who have little (if any) understanding of business issues as well as to make business English graduates more employable and adjustable to work environment.

4.2. Business English students' and graduates' motivation survey

Due to the changing reality of the labour market and higher education, there was a need to find out business English students' and graduates' motivation to take up the studies in question. For this purpose, a questionnaire-based online survey was carried out in 2011 after the first cycle of B.A. studies in business English (started in 2007/2008) was completed. 58 students and graduates participated in the survey. Although there were as many as fifteen survey questions, only two are discussed here. The full discussion of the survey results will be published in 2014 (Walczyński 2014).

The first question of interest was connected with the reasons for selecting business studies and the respondents could select several answers. The most common answers were: "I am interested in English" (43 responses), "I did not want to study traditional English philology" (42 responses), "I am interested in business" (20 responses), "Due to the proximity of the school" (17 responses), "Due to low costs of studies" (17 responses), "Due to good opinions about the school" (16 responses). The full results are presented in Chart 1.
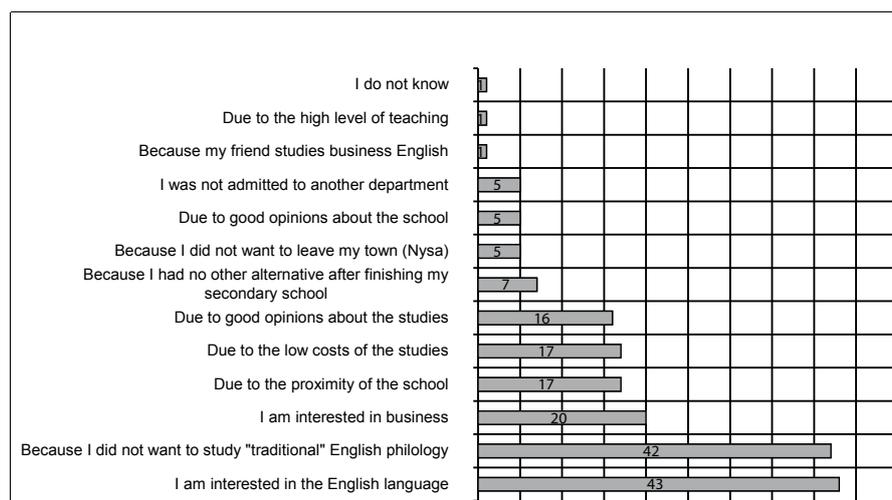
Chart 1: Reasons for taking up business English studies

What is particularly interesting in the results is that there are so many responses proving that business English studies are a good alternative for young people who do not want to pursue traditional English philology which is more academic and theoretical in nature. A positive aspect which emerges from the results is that business English studies are chosen by those interested in

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English as such. This may bear witness to the fact that such "applied" English studies may also be interesting for those who share interest in the English language which is a premise of typical philological studies.

The answers provided by the respondents to this question are valuable because they may be helpful (and indeed – were) in re-designing the curriculum of the studies in order to adjust it even better to the conditions and needs of the dynamically changing labour market.

4.3. Business English students' and graduates' satisfaction survey

Another part of the same survey concerned business English students' and graduates' satisfaction with their studies. This was assessed by means of two questions: the first one pertained to business English students' and graduates' opinion about taking up the same studies once again. The other one was a direct question about whether the respondents were satisfied with the studies or not.
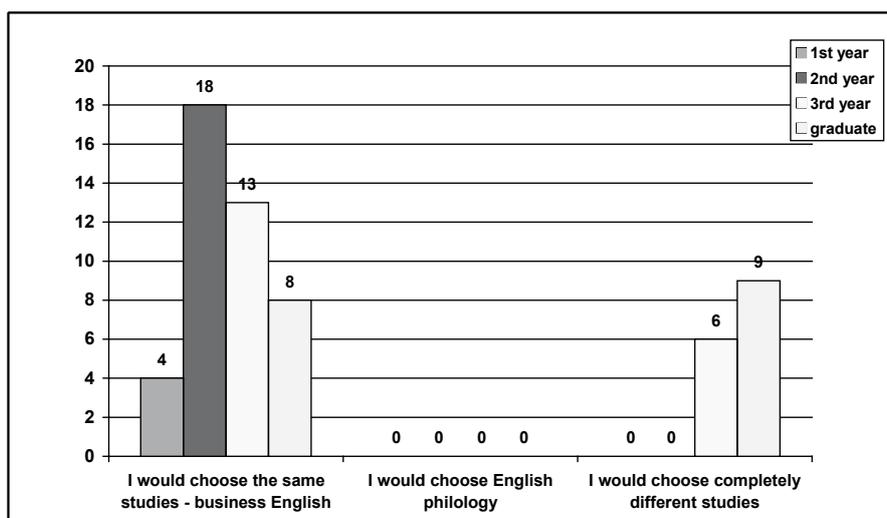
Chart 2: Business English students' and graduates' opinions about the possibility of selecting the same studies – the correlation between the respondents' status and their answers

The results to those two questions can be considered from two angles. First of all, there is a strong correlation between the category of respondents (first-year students, second-year students, third-year students and graduates) and their answers. The data presented in Chart 2 show a number of interesting observations. First of all, the answers provided by the first-year students have to be treated with caution due to the fact that the number of the respondents with this status, who had just started their studies so they had not had a chance to experience the studies in full, was rather small and therefore their answers are not reliable. Secondly, nobody would chose traditional English philology. This may mean that the studies in business English are more attractive in the eyes of the respondents than traditional English philology. Next, it is rather remarkable that 9 out of 17 graduates were probably unsatisfied with their studies and their choice would not be the same. This, however, may be accounted for by the fact that at that time the studies in business English were in its first phase of organisation and ever since there have been numerous changes to both the curriculum and organisation. Such answers could also be caused by the difficulties the graduates had finding employment in the region of Nysa. This problem, at least partially, could have originated from the fact that those people were a new type of graduates of language-related studies ad employers might not have fully realised their skills, competences and knowledge as so far they had only had the opportunity to work with traditional English philology graduates who had no expertise in business-related issues. One more interesting fact which results from Chart 2 is that all 18 second-year students would chose the same studies. This may prove that the modifications introduced to the curriculum in the course of the next cycles of studies turned out to be interesting and attractive for students. Generally speaking, more respondents would chose the same studies than there would be those who would not.

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Let us now take a look at the results provided by the respondents to the question about their satisfaction with the studies. Chart 3 shows the percentage distribution of the respondents' answers.
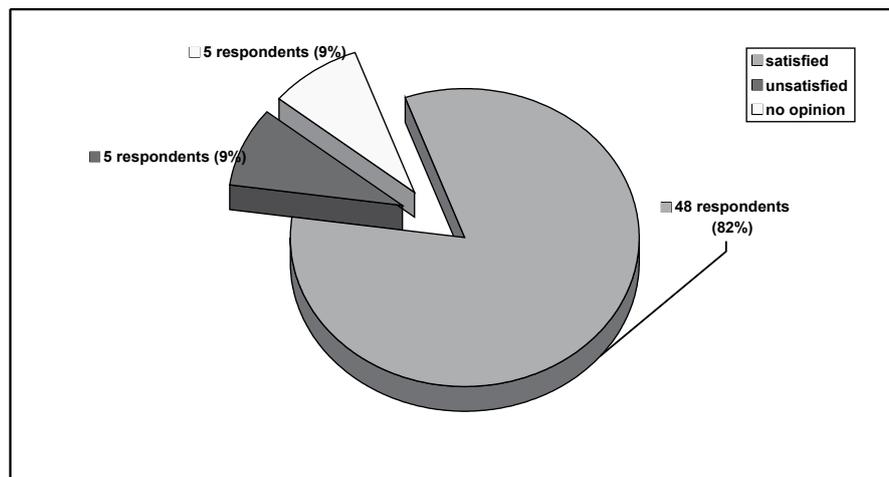
Chart 3: Business English students' and graduates' satisfaction with the studies

On the whole, the majority of the respondents (82%) expressed their positive opinion about their satisfaction with the studies. There were only five unsatisfied respondents (9%) and five respondents with no opinion (9%). Such a great number of those satisfied may bear witness to the fact that higher studies in specialised languages, in this particular case in business English, which combine language skills with expertise in business and which have a very practical orientation are an attractive and interesting option for students.

4.4. Curriculum modifications

The results of the survey as well as the observation of the trends of the Polish and European labour market have helped the staff of the Section of Business English re-develop the curriculum, adjusting it to the needs of employers and introducing or stressing those elements which so far had not been given due attention in the curriculum.

There were several reasons for modifying and improving the first curriculum which was in operation from 2007/2008 to 2009/2010. One of them was a shift in the strategy and mission of the State School of Vocational Education in Nysa, in which there was greater focus on practical skills that students were supposed to develop in the course of their studies. What is more, in informal conversations with the employers from the region of Nysa, it became evident that they expected that their future employees would have more practical orientation to their work as theory could be learnt at any stage. In other words, what they suggested was that the development of skills was more time-consuming and difficult than absorbing theory. Another factor which contributed to thinking about making some changes to the curriculum was the fact that in personal conversations the first graduates of business English, who had already entered the labour market, expressed their positive and negative opinions of the curriculum. The feedback they provided helped to reorganise the curriculum by introducing the badly needed courses such as translation. Furthermore, in the analysis of business English students' linguistic competence and performance during final practical English examinations, it came to light that more stress had to be put on such aspects of English as grammar or pronunciation since students' performances with reference to those aspects were rather poor. Finally, realising the fact that the competition in the market of higher educational services in the region, Poland and Europe was growing stronger and stronger and that there were lower numbers of potential students, the staff of the Section of Business English wished to offer a unique field of language studies which would attract more prospective students.

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So far, there have been three phases of the modifications of the curriculum. The first one took place in the academic year 2011/2012 during which the following changes were made: (1) the introduction of translation and interpreting courses (*the theory of translation and specialised languages* (30 hours), *translation* (60 hours), *interpreting* (30 hours)), the introduction of a new component of practical English: *practical grammar* (60 hours), more teaching hours were devoted to *English phonetics* (45 hours, compared to the previous number of 30 hours) and there was a reduction in the number of the teaching hours assigned to the lecture in *Polish-English contrastive grammar* (15 hours, as compared to the previous 30 hours). Another modification introduced at that stage was a more orderly sequence of courses so that the introductory courses preceded the more advanced ones.

A year later, in the academic year 2012/2013 there was a general shift in the curricula of higher studies, triggered off by the implementation of the National Qualification Frameworks in the Polish higher education system. This resulted in a new curriculum of B.A. studies in business English. New courses whose aim was to develop social competences were introduced. Among them were *public life etiquette, intellectual property and copyright, ergonomics*. This modification also helped to expand the offer of elective courses related to the humanities and social studies. Nowadays, business English students can enrol for such elective courses as *philosophy history, ethics, social communication, introduction to language philosophy*.

The third modification (and so far the last one) has been implemented in the current academic year (2013/2014) and it involves the expansion of the offer of second foreign language options. Nowadays, business English students can select one (or two as they wish to do so) second foreign language course from such options as German, Czech, Dutch, Spanish, French, Russian. Moreover, the number of foreign language teaching hours has been increased from 120 to 180 hours so that it could be possible to discuss the aspects of linguistics and culture as part of such courses. Additionally, there has been a reduction of the number of teaching hours of the courses with similar contents (*e.g. enterprise management vs. microeconomics and introduction to business*).

On the whole, all the modifications have had one major ultimate goal – to increase the employability of business English graduates due to their broad hands-on skills, competences and knowledge developed in the course of the studies. It remains to be seen whether these efforts will turn out to be successful as the first students who have been studying according to the modified curriculum will have completed their studies by October 2014.

5. Concluding remarks: practicality of higher studies – is it the right way?

From the observations of labour market trends and higher education, it emerges that practice-oriented studies are more and more desired as employees need real and labour market-related skills. Such is business English, in which strong focus is put on developing skills and competences which are preferred and useful in the labour market. What is more, it seems the Polish labour market now puts a greater emphasis on skills and competences than on theoretical knowledge because skills and competences are more difficult to develop whereas theoretical knowledge is easier to master. Such is business English, where practical skills in using English in specialised contexts and business, economics and law are taught. Therefore, market-oriented studies are a must if they are to prepare young people for entering the labour market successfully and these young people seem to be more aware of this. Like business English in the State School of Higher Vocational Education in Nysa, other higher schools are opening practical and market-related studies, whose aim is to make their graduates attractive players on the labour market and a good case in point is Łódź University, Poland, one of the most reputable Polish universities.

Of course, the objections may be raised that studies of all types should be academic in nature. However, apart from academic studies, which should be pursued by only a few young people who want to become scholars, scientists and researchers, more people should select the practical options within the higher education system, which will provide them with employment

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opportunities. This is so since the ultimate goal of higher education should be to make graduates professional, competent, easily adjustable, open-minded, tolerant and knowledgeable employees. Therefore, as business English graduates prove, the practicality of higher studies seems to be the right way which is what more and more higher schools have recently come to realise and which open more and more higher studies with a strong focus on practice.

6. Notes

[1] The article is of practical character therefore there are so few references to other authors and sources.

[2] In the academic year 2013/2014, the author is the grant holder obtained from the Project "Development of the Potential and Educational Offer of the University of Wrocław – the Chance to Enhance the Competitiveness of the University", carried our within the Human Capital Operational Programme co-financed by the European Union funds under the European Social Fund.

[3] The author, apart from his primary academic affiliation with the University of Wrocław, is a full-time lecturer in the Section of Business English of the State School of Higher Vocational Education in Nysa, Poland.

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Naming strategies in the Spanish language of economics on the example of *agricultura* (´agriculture´)

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Abstract. This paper concentrates on the naming strategies employed in the Spanish language of economics, particularly on two productive patterns: N+Adj. / N+P+N, which lead to formation of competing morpho-syntactic term variants that are supposed to be interchangeable in many contexts. We claim that to investigate this kind of term variation, which is scarcely represented in specialized dictionaries, to question the supposed equivalence between these two patterns and to find the principles that underlie the choice of one specific form are of a great importance. The discussion will be grounded on a case study of approx. 100 complex terms whose modifier is constituted by the concept AGRICULTURA (´agriculture´). This concept can be realized in Spanish either by an adjective (*producto agrícola* / *producto agrario*: ´agricultural product´) or a prepositional phrase (*reforma de la agricultura*: ´agricultural reform´). After investigating the collected multi-word units and simultaneously the possible concept realizations, four identified possible factors that can influence this variation are going to be presented: geographic variation, lexical factors, domain of use and syntactic factors. On the basis of given examples, the assumed interchangeability of these term variants is questioned and the importance of further investigation of this issue is shown.

Keywords. Languages for special purposes, morpho-syntactic term variation, multi-word nominal units, Spanish language of economics, term variation.

1. Introduction

Among many naming strategies offered by the Spanish language for the formation of multi-word nominal units, two of them seem to be especially productive, namely: N+Adj. and N+P+N. In this paper the use of these two patterns in the language for special purposes will be investigated on the example of the domain of agricultural economics.

1.1. Research focus

This investigation focuses on two patterns that produce multi-word nominal units of type: N+Adj. (example 1) and N+P+N (example 2), where the preposition is most frequently *de* (´of´). These two structures are very productive, both in the general language and in the language for special purposes, and are typical not only for Spanish but for many other romance languages (Cabré; Feliu 2001: 75). The formation of these two patterns is well illustrated by the examples below:

(1)   *compañía automovilística*   ´automotive company´

(2)   *compañía de automóviles*   lit. ´company of cars´

The existence of these two structures is well known in linguistics and terminology. There seems however to be less interest in the investigation of the use of the variants produced on this way in the special communication. Mostly they are seen as term variants which can be used interchangeably and with no semantic or cognitive consequences for the receiver in a given context, like in the example from the press below (http://elpais.com/diario/1980/08/06/internacional/334360812_850215.html, access date: 03.10.2013):

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> Es la sede de importantes empresas mecánicas, en particular los astilleros de Mitsubishi y la *compañía de automóviles* Toyo Kogyo, ésta, célebre por sus automóviles marca Mazda, se ha convertido en la segunda *compañía automovilística* del mundo, con una producción de más de un millón de vehículos por año.

In the course of this investigation we will try to show that this supposition is not always and in not all the contexts true and clear-cut. On the basis of the used materials, several factors will be presented which can influence this type of variation, also in the special communication, and which can guide the choice or preference of one form over the other.

1.2. Case of AGRICULTURE

For the purpose of this investigation only one concept in the position of the modifier in a nominal phrase was chosen: AGRICULTURA (´agriculture´). The research materials were taken from the area of agricultural economics, as this domain is broad enough to deliver sufficient and varied texts with rich and originally Spanish terminology.

In the position of the modifier in a nominal phrase this concept can be realized in the Spanish language mostly only in two ways: as an adjective (examples 3 and 4) or as a noun (example 5). In the first case the chosen concept can appear under two different relational adjectives: *agrario* (´agrarian´) and *agrícola* (´agricultural´), which follow directly the head noun, as in the examples below:

(3) N+Adj. *insumos agrarios* ´agrarian inputs´

(4) N+Adj. *insumos agrícolas* ´agricultural inputs´

The other mentioned option consists in using the noun *agricultura* in the position of the modifier, preceded by a preposition (mostly the preposition *de*) and optionally a definite article (the use of definite article in a nominal phrase in the structure of this kind is a topic of a different discussion and will not be considered in this paper), as shown below and illustrated by an example:

preposition + (determiner) + noun *de (la) agricultura* ´of (the) agriculture´

(5) N+P+N *insumos de la agricultura* ´inputs of agriculture´

In the course of the investigation, another interesting possibility of realization of the concept AGRICULTURE was found, which is not very typical or productive in the romance languages, namely the combining form *agro-*, as shown in the example 6 below:

(6) agro- + noun *agroinsumos* ´agroinputs´

Although it is an interesting point in the research of the naming strategies used in Spanish, we will not focus on this form in this paper and leave it for another investigation.

2. Data and methodology

Although the chosen concept of AGRICULTURE is very common and productive and the field of agricultural economics itself is a very broad area of research, the search for appropriate data –multi-word nominal terms with this concept in the modifier– in dictionaries or glossaries remained as good as fruitless. The consulted general and specialized lexicographical sources deliver only a small amount of such terms and, if they do, they normally present little or no morpho-syntactic variation.

For this reason and in order to obtain enough representative data, a small corpus on the basis of real texts was created, using one professional Spanish journal: *Economía agraria y recursos naturales*, published online by the *Spanish Association of Agricultural Economics* (http://aeea. webs.upv.es/aeea/es/004_consultaarticulos.php, 03.10.2013). For this investigation 66 scientific articles of the domain of agricultural economics, written originally in Spanish and published in this journal between 2009 and 2012 were revised. In this way, approximately 100 noun phrases

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containing the concept of AGRICULTURE in their modifier were extracted. Not all of the extracted phrases are terms *sensu stricto* but as the goal of this investigation is to look for patterns in the formation and use of complex units in the specialized communication and not their terminological character, they were taken into consideration in the same way as the common terms.

The collected data was a good starting point for the planned research. It did not though deliver all the possible variation. To make this information complete, other online sources had to be consulted and revised. We based this additional investigation on two Internet sources: the *Contemporary Spanish Corpus* managed by the *Royal Spanish Academy* (http://corpus.rae.es/creanet.html, access date: 03.10.2013) and *Google Books*. For some specific questions, newspaper resources available online were also consulted, for example the data available online from the Spanish newspapers *El Mundo* (http://www.elmundo.es/, access date: 03.10.2013) and *El País* (http://elpais.com/, access date: 03.10.2013).

3. Theoretical background

Before presenting the results of this investigation and discussing the identified reasons for the term variation in question, a short overview of the theoretical background concerning this issue will be presented in this section, taking into consideration both the traditional linguistic and grammatical perspective as well as the terminological one.

3.1. Traditional views

As the terminological units are specialized values of the lexical units, the same linguistic description should be used for the term investigation (Cabré 2006: 141). In order to revise traditional views concerning the morpho-syntactic variation of type N+Adj. / N+P+N in Spanish, two reference grammars for this language compiled and published by the *Royal Spanish Academy* were consulted: the *Gramática descriptiva de la lengua española* from 1999 and the *Nueva gramática de la lengua española* from 2009.

The authors of these detailed grammatical compilations describe these specific structures as a syntactic group with a head and its modifier, which can be a relational adjective (mostly of a qualifying character) or a prepositional complement. The relation between these two possible modifiers is explained as follows (RAE 2009: 982):

> Se obtiene en muchos casos la equivalencia del adjetivo relacional con un grupo preposicional encabezado por la preposición *de*, como en los pares siguientes: *castigo {divino ~ de Dios}*; *conflicto {estudiantil ~ de los estudiantes}*, *deterioro {ambiental ~ del ambiente}*; *empleado {estatal ~ del Estado}*; *problemas {cardíacos ~ del corazón}*; *tarjetas {navideñas ~ de Navidad}*.

As seen here, these two morpho-syntactic variants can be used as synonyms. The grammar mentions that this equivalence is possible in many contexts, it does not however explain in detail on what factors does this interchangeability exactly depend on. Only some differences in use of these two structures are mentioned, for example it is said that the prepositional phrase of type *de* + N does not always express the exact same sense as the respective relational adjective, so these two phrases are not semantically equivalent (RAE 2009: 983):

> Los grupos preposicionales encabezados por *de* admiten una amplia variedad de significados […]. Las paráfrasis de los adjetivos de relación con «de + sustantivo o grupo nominal» son muy comunes (*el viaje presidencial ~ el viaje del presidente*), pero no extienden a todos los casos. Por ejemplo, la expresión *salida laboral* designa la relativa a un posible trabajo futuro (y no, en cambio, la de los trabajadores al final de una jornada) [...]. Existen otros muchos casos parecidos que requieren también paráfrasis particulares, en su mayor parte más específicas que las que pueden construirse con «de + sustantivo o grupo nominal».

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It is shortly mentioned as well that the use of the relational adjective or the prepositional phrase with *de* as the modifier can be dependent on the context (RAE 2009: 983) or on some lexical restrictions of the derivational base of the adjective (RAE 2009: 984).

To sum up, the consulted grammars do mention the issue of equivalence between the structures of type N+Adj. and N+P+N. You can find information that their interchangeability is possible in many contexts without meaning change. It is also mentioned that there are some semantic, pragmatic and lexical restrictions which may influence the equivalence of these forms, it is however not explained in detail what factors can have influence on this process.

3.2. Term variation

As the source of our investigation is the language for special proposes used in the field of agricultural economics, it is also interesting to look at the morpho-syntactic variation of type N+Adj. / N+P+N from the terminological perspective.

It is a well known fact that after the initial rejection of the existence of variation in the terminology, it is now mostly accepted that this initial biunivocity of terms can no longer be defended (Freixa; Montané 2006: 190). What now is an important issue for the terminologists is the description and distinction of the identified variation.

For this paper two investigations concerning term variants were taken as reference: the distinction made by Montiel-Ponsoda, Aguado-de-Cea and McCrae (2011) for the purpose of the *lemon* project, as it compiles various theories, and the distinction made by Cabré (2008), as it refers mainly to Spanish.

Montiel-Ponsoda, Aguado-de-Cea and McCrae (2011: 48) distinguish between two types of term variants: term variants that are semantically coincident but formally different and term variants that are semantically and formally different. To the first group belong the following types of variants:

1.   1graphical and orthographical variants (*localization* vs. *localisation*)

2.   inflectional variants (*cat* vs. *cats*)

3.   morpho-syntactic variants (*nitrogen fixation* vs. *fixation of nitrogen*)

This first group is described by Cabré as term synonymy without cognitive consequences (Cabré 2008: 27). The use of one form or another does not change the way in which the concept is being represented. The denominative variation takes place in the form but does not produce meaning distortion (Cabré 2008: 32).

The second group of term variants according to Montiel-Ponsoda, Aguado-de-Cea and McCrae -term variants which are semantically and formally different- is described in the following words (2011: 48):

> […] terms that correspond to one and the same concept, but whose usage reflects a different aspect of the concept or a different intention on the side of the user. […] It means that the use of one term or the other is conditioned by a certain cognitive intention and highlights certain dimensions or features of the concept that will make its use more appropriate in certain situations.

The authors give the following list of possible terms variants belonging to this group:

1.   stylistic or connotative variants (*man* vs. *bloke*)

2.   dialectal variants (*gasoline* vs. *petrol*)

3.   pragmatic or register variants (headache vs. *cephalalgia*)

4.   diachronic variants (*tuberculosis* vs. phthisis)

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5. domain or concept dimension variants (*swine flu* vs. *pig flu* vs. *H1N1* vs. *Mexic pandemic flu*)

6. explicative variants (*immigration law* vs. *law for regulating and controlling immigration*)

Cabré describes this second group of term variants as term synonymy with cognitive consequences, where the choice to use one term variant to name the same object could depend on the cognitive intention of the user and, obviously, it has cognitive consequences for the receiver (Cabré 2008: 29).

Having presented this term variants distinction, the variation of type N+Adj. / N+P+N, which is the topic of our investigation, can be found in the first group under the point "morpho-syntactic variation". As it was said, in this kind of term variation there is no cognitive intention on part of the user and, consequently, no cognitive consequences for the receiver are given. This supposition seems to be true in most cases, just like it was mentioned by the grammars consulted in the previous subsection. Nevertheless, the use of the morpho-syntactic term variants is not always so clear-cut and, as we will show it in the next part of this paper, there are some factors which can influence and distort their expected semantic and cognitive equivalence.

4. Factors which can influence the variation

It would be probably impossible to enumerate all the possible factors which can influence the term variation of type N+Adj. / N+P+N in Spanish and distort the expected interchangeability of these two structures. The main reason for this is that these factors are in most cases unpredictable and depend on such items like the special lexical background of each term (in this case it is the linguistic realization of the concept AGRICULTURE), on the domain in which the special communication takes place (in this cases it is the domain of agricultural economics) and many other unforeseeable elements.

In this section only four such factors, which could be identified on the basis of the small corpus created for this purpose, will be presented: geographic variation, lexical factors, domain of use and syntactic factors.

4.1. Geographic variation

In the case of the concept AGRICULTURE, Spanish offers two possible adjectives: *agrícola* and *agrario*. Although the linguistic origin of these two adjectives is different (Latin *agricŏla* in the case of *agrícola* and *agrarĭus* in the case *of agrario)* and their lexicographical description stresses distinct perspectives (relation to agriculture in the case of *agrícola* and relation to field in the case of *agrario*), no difference in their use can be observed. They seem to be applied as synonyms that are interchangeable in almost every context.

For this reason, it was interesting to observe some preference in use of these two adjectives in the data collected in the course of this investigation as far as the geographic variation is concerned. At first glance, the frequency of use of *agrícola* and *agrario* seemed to be different in texts written in Spain and other Spanish speaking countries.

To confirm this supposition, the head nouns of the twelve most frequent multi-word terms of the collected data (*actividades*, *desarrollo*, *explotación*, *maquinaria*, *política*, *prácticas*, *producción*, *productores*, *productos*, *sector*, *trabajadores*, *uso*) were taken and their occurrence with these two adjectives in the *Contemporary Spanish Corpus* of the *Royal Spanish Academy*, which allows the search not only in Spanish but also in many Latin-American sources, was compared. The results are presented graphically in the Fig. 1 and Fig. 2 below.

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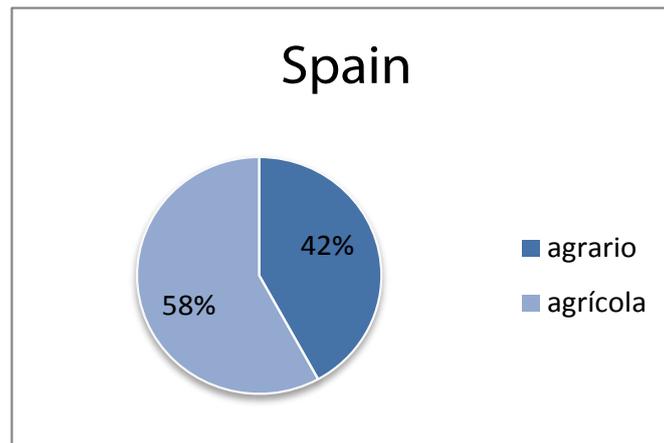
Spain

Figure 1: Frequency of use of *agrario* and *agrícola* in Spain
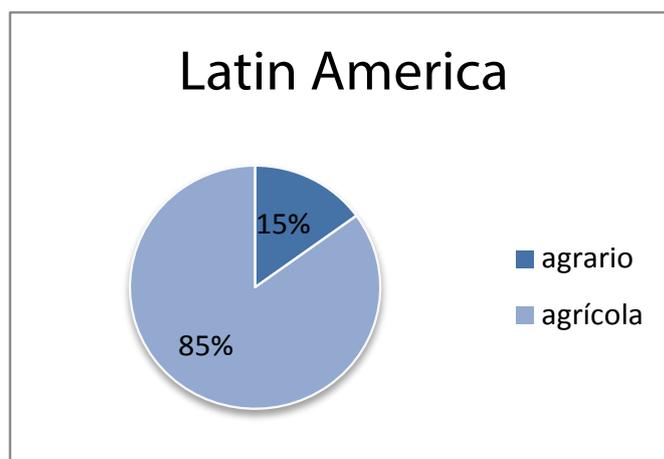
Latin America

Figure 2: Frequency of use of *agrario* and *agrícola* in Latin America

These graphics, which base only on a small amount of data, show some tendency to use the adjective *agrícola* frequently than *agrario* in the position of the modifier in a nominal phrase in Latin America, whereas the use of the competing adjectives *agrícola* and *agrario* in the same position in the peninsular Spanish seems to be more balanced. Of course, in order to confirm this tendency a greater amount of data should be investigated in a more systematic way. However, on the basis of this limited search you can observe a certain preference which is absolute possible taking into consideration the existing geographic variation of Spanish and which can influence the language for special purposes as well. In this way, the geographic variation can affect the use of one specific adjective as the modifier in a nominal phrase and distort the previously supposed interchangeability of these two adjectives.

4.2. Lexical factors

In the last subsection possible differences in the use of multi-word terms were mentioned that do not depend on the head noun of the phrase but are due to the geographic language variation of the adjective used in the modifier. In this subsection we would like to discuss some lexical factors which can also influence the variation in question and which are directly related with the head noun in this kind of nominal phrases.

The supposition that we would like to discuss here is whether the user prefers to use in a specific context one of the variants (with adjectival or nominal modifier) in order to avoid confusion or homonymy in the communication. This could take place in the case of polysemous head nouns, like in the example below:

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(7)   *área*: sense 1: ´land, field´

        sense 2: ´sector´

As you see, the Spanish noun *área* has two different meanings. The question is whether this head noun combines either with the adjectival modifier or with the nominal modifier in multi-word phrases in order to stress one of these meanings. To look at this question with more detail, 32 newspaper articles available online on the website of the Spanish newspaper *El Mundo* containing this phrase with both types of modifier were consulted and their meaning was determined. The results are presented in the Tab. 1 below:

	área agraria área agrícola	área de (la) agricultura
´land, field´	18/20	0/12
´sector´	2/20	12/12

Table 1: Use of área as the head noun

In this case, the preference to use one type of modifier with one meaning of the head noun is clear: the adjectival modifier combines more frequently with the meaning of ´land, field´ and the nominal one with the meaning of ´sector´. There are of course many such examples (an interesting case in our corpus was the separation of the terms: *campaña agraria* / *campaña agrícola* with the meaning ´agricultural season´ and *campaña de agricultura* with the meaning ´campaign concerning agriculture´.) and each head noun should be always considered separately. It seems that there is no regularity in this process and each case depends on the specific head noun and its use. It should be however always taken into consideration that this tendency to avoid homonymy among the users can take place, also in the specialized communication, and it can have influence on the term variation. In the case of the morpho-syntactic variation of type N+Adj. / N+P+N, this fact affects the modifier and the expected equivalence between the adjectival and nominal phrase in this position.

4.3. Domain of use

Other interesting factor which can influence the term variation in question and the assumed equivalence of term variants is the domain of use, understood as some established linguistic tradition existing in a specific domain. In the case of the investigated corpus of agricultural economics one such recurrent pattern could be identified: the one regarding names of official institutions, like ministries and similar bodies. It seems that for these names only one specific model is used: N+de+N, leaving the other variant with adjectival modifier aside. Consider the following example:

(8)   *Ministerio de Agricultura, Alimentación y Medio Ambiente*

        ´*Ministry of Agr*iculture, Food and Environment´

The same pattern can be found in the names of all present Spanish ministries as the only existing form (the term variant with relational adjective as the modifier is not used). This model is applied not only to the names of ministries but also to other similar state institutions, for example to the names of the Spanish regional ministries called *Consejerías*, like in the example below.

(9)   *Consejería de Agricultura y Pesca*   ´*Regional Minis*try of Agriculture and Fishery´

The tradition to use this variant affects not only the names of institutions but also the people holding positions in them:

(10)   *Ministro de Agricultura*   ´Minister of Agriculture´

As this domain of use crosses now the national borders, the pattern N+de+N can also be found in the names of new international and European institutions:

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(11) *Consejo de Agricultura y Pesca*   ´Agriculture and Fisheries Council´

Of course, in the case of some names it is also possible to form the variant with the adjectival modifier (*ministerio agrario; ministro agrícola*). It is however rarely used and sounds much more colloquially. In many cases there is no respective adjective existing (*Ministerio de Fomento*, *Ministerio de Asuntos Exteriores*, etc.), so the variant containing prepositional phrase in the modifier dominates even more the naming tradition in this domain of use.

The tradition presented above to use the variant N+de+N for the names of state and similar institutions is well known and typical for the investigated domain of agricultural economics. It is to expect that each domain has its own established linguistic traditions which are obvious and well known for the experts or people familiar with the domain in question. The issue of such domains of use is very important in the investigated term variation because these established traditions influence the use of term variants, making one form the only accepted one in this specific context and questioning in this way the absolute synonymy between term variants of type N+Adj. / N+P+N.

4.4. Syntactic factors

The last point which we would like to discuss among the factors that can influence the term variation in question refers to syntactic factors, that means to some grammatical or lexical restrictions of the phrase constituents or the whole phrase, making the use of one variant impossible or restricted. This issue will be discussed on two examples: the case of negation and complex modifier.

4.4.1. Negation

In the investigated texts a few terms with negated adjectival modifier were found. In this case it is impossible to form the potential variant with negated prepositional phrase as equivalent, as it is shown in the example below:

(12) *ingresos no agrarios* / *ingresos no agrícolas*

     ´non-agrarian incomes´ / ´non-agricultural incomes´

     **ingresos de no agricultura* / **ingresos no de agricultura*

The same applies to other examples found in the corpus, where the formation of the equivalent modifier with a prepositional phrase containing negation is also restricted:

(13) *bienes no agrarios* / *bienes no agrícolas*

     ´non-agrarian goods´ / ´non-agricultural goods´

(14) *actividades no agrarias* / *actividades no agrícolas*

     ´non-agrarian activities´ / ´non-agricultural activities´

These restrictions are not always predictable but, as seen on the examples above, they are significant in the investigation of the term variation in question, as they make the use of one of the term variants impossible and distort their expected equivalence in every context.

4.4.2. Complex modifier

Other interesting case to be discussed here is the case of multi-word terms with a complex modifier in form of a prepositional phrase containing a noun and an adjective or of an adjectival phrase containing two adjectives. On the basis of the examined corpus, a preference for the first of the above presented options could be assumed. In order to confirm this supposition, Google Books frequencies were consulted (numbers in brackets next to the examples below). Consider the following examples:

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(15)   *sistema de agricultura orgánica* (130)

    ´system of organic agriculture´

    sistema agrario orgánico / sistema agrícola orgánico (15)

    ´organic agrarian system´ / ´organic agricultural system´

(16)   *modelo de agricultura familiar* (547)

    ´model of family agriculture´

    modelo agrario familiar / modelo agrícola familiar (3)

    ´family agrarian model´ / ´family agricultural model´

(17) *región de agricultura intensiva* (52)

    ´region of intensive agriculture´

    región agraria intensiva / región agrícola intensiva (7)

    ´agrarian intensive region´ / ´agricultural intensive region´

On the basis of these examples, in the case of such complex modifier, the preference to use prepositional phrase rather than the adjectival one seems to be clear. One of the possible explanations for this fact could be to avoid misunderstanding – when using two adjectives, the relation between the phrase constituents is not always so clear like in the case of the prepositional structure.

The given examples represent a very specific structure, where we can only talk about a certain preference to use one form more likely than the other. It is however important to take such preference into consideration when investigating the term variants in question as it shows how dependent their equivalence can be on different factors.

5. Conclusions

The naming strategies of type N+Adj. / N+P+N, so typical for the romance languages, are an important factor in the term formation and term variation in the Spanish language for special purposes. The morpho-syntactic term variants formed according to these two patterns seem to be equivalent in many contexts and their exchange in the text seems to have no cognitive or semantic consequences.

The discussion whether this supposition is always true was based on multi-word nominal terms belonging to the field of agricultural economics having the concept of AGRICULTURE in the position of their modifier (*sistema agrario – sistema agrícola – sistema de (la) agricultura*). On the basis of the elaborated corpus a few factors which can distort this expected equivalence between the nominal phrases of type N+Adj. and N+P+N could be identified – factors which represent only o small sample of possible reasons that can influence the variation in question.

The presented examples and cases show that the variation of type N+Adj. / N+P+N is not free and it cannot always be assumed that these two morpho-syntactic variants are interchangeable without cognitive consequences in every context. Each case should be considered separately and in reference to the domain in question. This statement has significant consequences not only for terminologists and terminographers but also for experts and translators and other groups interested in the correct use of terms in context.

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Domain, domain loss and parallellingualism – a challenge for the Nordic languages

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Abstract. Introduction: A short account of the Nordic languages – especially LSPs – with regard to the phenomenon of domain loss and actions against it taking the corresponding official national documents and the Declaration on a Nordic Language Policy as point of departure.

Domain dynamics: The concept of domain loss is considered within the framework of the comprehensive concept of "domain dynamics" with its negative and positive subordinated concepts. Domain dynamics offers a more detailed and less emotionally coloured picture of modern language planning.

Domain: The term "domain" represents a least two different concepts in language and terminology planning. The roll of each one is described and introduced in different stages of the overall process of language planning eliminating the apparent incompatibility of approaches.

Parallellingualism (parallelsproglighed; Parallelsprachigkeit) is considered a provision against domain loss. However, there is no official definition. Nevertheless, a terminological analysis of the concept based on the official documents reveals different concepts and approaches which shall be discussed in detail. Hereafter, we shall set forth definitions of the different concepts, we could deduce from the official documents offering thus a more comprehensive conceptual apparatus.

Preconditions: for a successful resistance against domain loss and other measures taken in order to further parallellingualism are considered critically.

Keywords. Domain loss, domain dynamics, language planning, parallellingualism, Nordic languages.

1. Introduction

About 15 years ago, it was observed that English was increasingly invading the Nordic languages, especially the LSPs (Lund 1989). In the beginning it was just an unproved hypothesis, but already in 2001 Pia Jarvad published her well documented research into the status of the Danish language in which she proved that a considerable number of researchers in the natural sciences – but not only those – published their research results in English. A similar situation could be observed in the other Nordic countries and languages. The phenomenon was called domain loss.

Language planning has a long tradition in the Nordic countries; however, domain loss had not been a major research subject until about 2000. Alarmed by the stated situation both linguists and others started to investigate domain loss and its societal and professional consequences for the language communities in question. A loss of this kind – especially when the concept is not very well defined and considered only in isolation – causes emotional reactions and even threat. However, the negative reactions were not shared by everyone; there were also voices, which denied any negative consequences for the language and the national identity of the language users.

Nevertheless, in nearly all Nordic countries high level commissions were established and worked out basic documents with recommendations on how to face domain loss and its consequences. The governments discussed these documents and supported the basic idea of maintaining and developing the national languages including the LSPs. One of the measurements taken was to ask the universities to elaborate adequate language policies.

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At a Nordic level the 'Declaration on a Nordic Language Policy' (2007) worked out and issued by Nordic Council of Ministers and The Nordic Council describes the common basis for a Nordic language policy. Two important statements deserve special attention.

> *We in the Nordic countries consider all languages to be equal. They do not, however, all play the same role. A language may be **complete and essential to society** in relation to the language community in which it is spoken.*
>
> *A language is **complete** in this respect if it can be used in all areas of society.*
>
> *A language is **essential to society** if it is used in a language community for official purposes, for example education and legislation. (2007: 91).*

'Complete' implies that all LSPs and their corresponding levels are included; 'essential to society' refers to official purposes which again includes necessarily the LSPs.

Another important issue in order to maintain the Nordic languages in the above mentioned conditions and at the same time to avoid domain loss is the parallel use of languages. The Declaration states (2007: 93):

> The parallel use of language refers to the concurrent use of several languages within one or more areas. None of the languages abolishes or replaces the other; they are used in parallel.

Furthermore (2007: 94):

> The use of parallel languages does not only involve English; it must also be applied to the languages of the Nordic countries.

The last statement indicates that English should not be the only parallel language; however, in reality, English is today the dominant parallel language in the Nordic countries and several national documents limit the parallelity of language use explicitly to English and the national language. Parallelity between the three Scandinavian languages (Danish, Norwegian and Swedish) is a special case of parallellingualism, because none of the speakers has to really learn the other two languages. A rather limited learning effort suffices for ensuring communication. Haugen (1966) called this phenomenon 'semicommnication', however, the prefix 'semi' should not be taken quantitatively or literally.

2. Domain dynamics

The fact that domain loss was detected very soon triggered intensive research into the issue. Our research group, consisting of four persons engaged in linguistics, LSPs and terminology from four different Nordic countries, investigated not only the phenomenon of 'domain loss' but the conceptual field in which the concept of 'domain loss' is embedded. We followed the basic insight that concepts only occur in conceptual clusters or referential frameworks. After having considered empirically the linguistic reality with regard to domains and their role in the Nordic language communities, it became obvious that negative and positive concepts belong to a more comprehensive conceptual cluster with a superordinate concept which we called 'domain dynamics'. Thus, the following concept system could be established:

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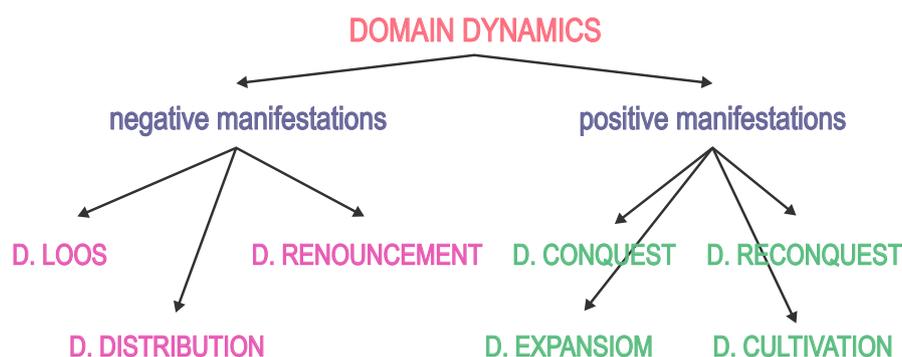
Figure 1: Concept system of domain dynamics

We defined *domain dynamics* as follows:

> The interplay of social, political, economic and cultural conditions existing at a certain point of time in a language community which is characterised

> by the will (directly or indirectly manifested) to maintain its overall cultural identity by a language (Gesamtsprache) that can function in all areas of life or

> by the partial or complete abandonment of this identity, respectively.

Our definition of *domain loss* reads:

> Loss of ability to communicate in the national language <u>at all levels of an area of knowledge</u> because of deficient further development of the necessary means of professional communication.

The restricted time does not allow me to offer the rest of the definitions; however, they can be found together with examples and detailed reasoning in our publications on the subject (Lauren et al. 2002, 2004, 2006, 2008; Myking 2011; Jónsson et al. 2013).

We believe that this concept system is applicable to modern language planning in general including LSPs and terminology planning, because it covers issues of status as well as corpus planning, permits the consideration of sociolinguistic factors, reflects realistic options of language planning and avoids the overemphasis of only one negative subordinate concept of the array of language planning options offered by domain dynamics. Although we focussed in our research on the situation in the Nordic countries, rather similar situations can be observed in other European language communities. Therefore, we believe that the above model and the following considerations and definitions – mutatis mutandis – can be applicable to and useful for other language communities under pressure of a dominant foreign language worldwide and especially in Europe.

3. Domain

When we analysed the concept behind the term 'domain', it became evident that the documents investigated operated with at least two different concepts. The first one belongs to sociolinguistics and has its roots in the writings of Schmidt-Rohr (1932) and Fishman (1979). The latter defines domain as follows:

> Domains can be seen as institutional contexts or socio-ecological co-occurrences. They are therefore names for major clusters of interaction situations that occur in particular multilingual settings. (Fishman 1979: 19)

The official documents analysed offered a variety of explanations following Fishman's approach, for instance, the Hveem report of 2006:

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> By domain is meant an area of human activity in a broad sense, however limited in
> time and space. Higher learning and research represent in this connection a domain
> (my translation) (UiO 2006: 11)

The second concept refers to subject field or field of knowledge. It may be called a sociocognitive concept related to units of knowledge (concepts) which belong to a certain subject field. The ISO standard 1087 defines:

> **3.1.2 subject field**
>
> > *domain*
> >
> > *field of special knowledge*
>
> NOTE The borderlines of a subject field are defined from a purpose-related point of
> view.

This approach differs considerably from the sociolinguistic one. At term level the distinction between these two concepts remains unclear; this obviously hampers professional discussion on the subject.

Even more detailed distinctions between different concepts in the area of sociolinguistics named 'domain' were found in literature (Simonsen 2005; Ljosland 2008), analysed and discussed thoroughly in the book 'Parallellspråk og domene' (Parallellingualism and domain) (Jónsson, Laurén, Myking, Picht 2013).

However, the apparent incompatibility of the two concepts disappears when we consider their individual functions within the complex process of language planning. Therefore, it would be suitable to distinguish in language planning and language policy between **domain 1** and **domain 2.**

Domain 1, the sociolinguistic concept, designates a ***strategic*** concept in the field of language policy and refers to areas of a community where a language planning activity is considered desirable or even necessary. A strategy in the military sense defines always superior aims to be reached, however without fixing or prescribing in detail ways and means of realisation. In the management literature, strategy refers to plans to achieve outcomes that are consistent with certain goals or visions. Thus, domain 1 refers to the sphere of status planning.

Domain 2, the sociocognitive concept, belongs to the **tactical** (or practical) level, where professional knowledge, that is to say, subject fields and knowledge areas, is central. Conceptual analysis, knowledge ordering, planning and elaboration of LSP means such as terms and other professional means of knowledge representation are related to corpus planning and corpus maintenance. To be able to work within the framework of domain 2 professional knowledge is a conditio sine qua non.

Both concepts are symbiotically linked to each other, because neither can exist without the other in language planning. The strategic level is worthless without an adequate realisation at corpus level and the tactical level alone would lack a master plan, which according to all practical experience, especially from terminology, leads to isolated or insufficiently coordinated actions and projects.

4. Parallellingualism

In the above mentioned Declaration the Scandinavian term 'parallelsproglighed' was rendered by 'parallel language use'. In the following text we shall use the term parallellingualism. Since the Scandinavian term apparently is very transparent and highly motivated, no definition was offered neither in national documents (before and after the publication of the Declaration in 2007) nor in the Declaration itself which led to a variety of similar, however slightly different, interpretations and nuances in the documents analysed.

Nevertheless, in all documents parallellingualism is viewed as an adequate means against domain

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loss. But what does parallellingualism really mean and how could it be defined? In order to reach a better understanding of the term, we searched the chosen corpus for predications and semantic hints which could contribute to clarify the concept. In other words we chose a terminological approach performing a conceptual analysis based on the characteristics. The result was quite surprising. After a categorisation of the predications (characteristics) extracted, we could relate the characteristics to the following semantic clusters:

1. General predications referring to the concept 'parallellingualism'

2. Predications related to absolute parallellingualism

3. Predications related to functional parallellingualism

4. Predications related to parallellingualism as language planning tool

5. Predications related to sociolinguistics in general

6. Predications related to domain

7. Predications related to languages of teaching

8. Predications related to publication policies and practices.

Ad 1 Without going into details here, a clear distinction should be made between:

○ A language policy *principle* valid for all language communities which aim at parallellingualism regardless of the language combination;

○ A *strategy* concept for one or more language communities which implies a range of basic decisions and conditions;

○ The *individual capacity* and skills of the language user.

○ It may be already suspected that the concept under analysis is not so clear cut as the term may suggest.

Ad 2 There are no positive predications about absolute parallellingualism but a series of critical comments especially on the individual skills and the general necessity of parallellingualism. The comments may be summarised as follows: The use of a professional parallel language, for instance English, means that all members of a professional community should fully master the parallel language which is hardly feasible.

Ad 3 Predications in this group mirror a more realistic picture of what is feasible and desirable. Although functional parallellingualism will not require language skills comparable with the mother tongue skills, but 'only' communicatively equivalent skills and linguistic correctness. The principle of parallellingualism is not invalidated, but just adapted to reality. We shall come back to this issue when proposing our definitions.

Ad 4 In order to speak about real parallellingualism a precondition is that two languages have comparable linguistic means at all levels of specialisation – complete vertical parallelity – which implies a permanent maintenance and expansion (positive domain dynamics) adapted to the communicative requirements and restrictions of a language community.

Ad 5 Some predications in this part of the analysis modify parallellingualism as a principle, because they introduce the concept of 'main language' referring to the national language. If parallellingualism is considered a rigid principle, the term is inappropriate, since parallelity excludes subordination. Another interpretation of these predications could be that a given communication situation determines the choice of language which obeys the principle of expediency and optimal communication. In this case the principle of parallellingualism is not questioned but just made more flexible and the choice is left to the user's judgement of the communication situation. However, since the choice of the language is left to the user, parallellingualism may split up in many individual degrees.

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Ad 6 The terms which could indicate domain names are vague and seem to refer to rather heterogeneous entities; one may doubt whether they refer to the same category or to different concepts of domain. However, all these denominations of domains refer to the strategic level, that is, the status level. Domains in the sociolinguistic sense are not suitable for work at corpus level; for instance, how to delimit the terminology of the domain 'university' or 'language of science'?

Ad 7 and 8 Predications referring to the languages of teaching underline the necessity of the use of English especially at MA level. The central argument is to fulfil the requirements of globalisation. However, it is a fact that by no means will all graduates in all university disciplines work in international environments, which implies that they also must be familiar with the national means of professional communication. Farmer Jensen will not communicate with the vet in English about milk fever.

As to the language of publication of scientific research various predications express the need for publication of research results in the two parallel languages as a democratic right. In addition, parallellingualism also in this field will support the maintenance and development of the national language. A critical and criticised issue is the internal higher ranking of publications written in English at universities without taking in consideration the content or the relevance of other publication languages.

The conceptual analysis of the apparently very transparent term parallellingualism reveals indeterminacy and even contradictions. Without any doubt some of the conceptual differences manifest in the documents analysed are due to individual interpretations and adaptations to national preferences and although central characteristics remain more or less constant in the five Nordic countries there is no satisfactory definition. In reality, there are several concepts hidden behind the term parallellingualism, which impedes only one definition.

In addition, several other questions may be asked which have not been treated in the documents, for instance:

- Is complete parallellingualism for all persons working in a certain domain or field of knowledge really possible?

- How extensive would the personal effort be (years of study, energy invested in language learning, etc.) in order to reach the ideal goal? Ammon reckons with 10,000 – 12.000 hours. (Ammon 1998).

- Given predefined number of years of study, what impact will learning to achieve parallellingualism have on the study of the subject matter?

- Does there exist a realistic relation between the 'benefit' and the achievement of parallellingualism for an entire professional community?

As the declared aim of parallellingualism is to neutralise the negative effects of domain dynamics, to preserve the Nordic languages and to maintain them as complete languages essential to society, we are in the field of language planning. This is parallellingualism as a language planning tool. – That will cover one facet of parallellingualism since many explanations and predications contain the concepts 'principle' and 'strategy' which means corpus level is not sufficiently attended to.

Another facet of parallellingualism refers to the individual speaker's ability and skills to master two languages without qualitative distinction. This concept focuses on the human being.

This division already indicates the existence of at least two different concepts of parallellingualism:

- Parallellingualism as language planning tool, and
- Parallellingualism as human ability.

In order to distinguish between these two concepts, we propose the following set of definitions:

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Parallel language

Complete foreign language the use of which is on a par with the mother tongue within all areas of society, knowledge fields and levels.

Note: *A parallel language neither displaces, subordinates nor substitutes the mother tongue. The mother tongue must be maintained and developed as complete language in order to ensure parallelity. While this is a theoretical possibility, there are practical challenges that may impede its realisation.*

Parallellingualism as language planning tool

Parallellingualism (principle)

Basic principle in language planning which means that two complete languages essential to society are used without either of the languages being discriminated against.

To put into practice this principle it seems useful to distinguish between three levels of realisation:

- ○ Strategic level
- ○ Operative level
- ○ Tactical level

According to these levels we offer the following definitions:

Strategic parallellingualism

Language planning strategy the aim of which is to realise the principle of parallellingualism and to ensure that two languages used in parallel in a language community at status and corpus level are maintained and developed as complete languages representing the communicative means in all relevant knowledge fields including the professional stratification.

Operative parallellingualism

Link between the strategic and the tactical level in language planning the aim of which is to realise the strategic goals at domain1 level.

Note*: Domains are institutions such as universities or authorities and economic entities in a broad sense which transform the strategy into operative planning and its realisation within the framework of the mentioned entities. It is the task of this level to take into account the horizontal and vertical specialisation within the domains (domain2).*

Tactical parallellingualism

In language planning this level comprises planning, maintenance and development of corpus.

Note*: Corpus work means in practice first and foremost terminology work. Corpus work can be considered a link to and a condition for parallellingualism as individual linguistic ability.*

Parallellingualism as individual ability

Absolute parallellingualism

Complete mastering of the LGP and at least one or several LSPs of the parallel

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language relevant to the speaker's professional activity.

Note*: There must not be any qualitative difference in mastering the parallel languages. Absolute parallellingualism is considered an ideal.*

Functional parallellingualism

High level mastering of the parallel language which ensures linguistically and professionally appropriate communication within one or more subject fields relevant to the speaker.

Note*: In opposition to 'absolute parallellingualism' it is not required to master the foreign language at mother tongue level.*

The potential of parallingualism

It is obvious that minor language communities such as the Nordic would not be able to participate in globalisation if their international communication were based only on their mother tongues. It is a fact that English is the language required within all areas with international contacts such as politics, science, trade, cultural matters, publication, knowledge transfer, etc. Therefore, the concept of parallellingualism seems to be an adequate means – especially in the present situation of the Nordic languages – on the one hand to satisfy the communicative needs related to internationalisation, and on the other to ensure and to maintain complete mother tongues.

However, there is a difference between the potential of an idea and its realisation.

5. Preconditions

The official texts contain only general statements concerning how the realisation of parallellingualism should or could be carried out. Therefore, before language policy measurements and working models can be discussed seriously and implemented, several very general and highly complex political, economic, sociological and psychological questions should be discussed and solved:

1. How can the linguistic consciousness of a language community be developed?

2. Is there in a language community a clearly manifested will to maintain the mother tongue as a complete language?

3. Can all or at least the majority of the members of a language community recognise the negative consequences of the loss of a complete language?

4. Can an explicit language policy ensure planning, maintenance and future development of a complete language?

5. How can a professional community at all levels be motivated to maintain and to develop its LSP and terminologies?

6. Is a language community willing to provide the necessary economic and human resources?

While these questions of language attitudes and ideologies remain without satisfactory answer, a realisation of the principle of parallellingualism will be problematic.

6. Conclusions

The level of activities related to the implementation of parallellingualism in the Nordic countries differs due to national conditions; in all Nordic countries the universities have elaborated language policies with the overriding aim of realising parallellingualism, however with slightly

different foci. One common characteristic is the increasing number of studies taught in English especially at MA level.

With regard to institutions, Denmark and Norway founded new or reorganised existing institutions shaping their profile towards parallellingualism; Finland as a bilingual country continues with its existing institutional structure; in Sweden activities of this kind seem to be rather reduced and in Iceland a major restructuring did not favour the institutional framework.

Three Nordic countries have issued language laws; in Norway the discussion is still going on and Denmark refused to issue a language law proper, but delegated the issue to lower ranking regulations.

Truly, there have been critical voices with regard to parallellingualism and its realisation within a political framework – although the idea itself was not questioned (Johansen 2012). The criticism is justified with regard to the insufficient visible results after five years and the lack of higher level coordination. However, official – and especially political – documents usually indicate desirable aims, but they are not plans of action and coordination at operative level. Language planning is always a long term project with a time horizon of at least one generation and subject to indeterminacy of various kinds. However, we still believe that language planning is possible, although the aim may be adjusted to changed circumstances and the result may not correspond one hundred percent to the original expectation. In language planning a partial success is still a progress in the right direction.

7. Notes

Final remark:

The pronoun 'we' in the above text refers to our Nordic research group consisting of

Dr. Sigurdur Jónsson, Iceland

Prof. em. fil.dr. Christer Laurén, Finland

Prof. fil.dr. Johan Myking, Norway

Prof. em. fil.dr.h.c. Heribert Picht, Denmark.

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The essence of a hybrid genre: The causes of variation in corporate disclosure policies

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Abstract. Corporate disclosure policy is a genre in which listed companies declare their principles for informing stakeholders about, e.g., their financial situation and organizational changes. The policy forms an essential part of a company's Investor Relations (IR) communication and is directed by regulations worldwide dictating what information companies must release and when. By means of disclosure policies (DP), companies brief their personnel on the principles of releasing IR-related information, but they also seize the opportunity to attempt to maintain trust and influence the behavior of investors and other stakeholders. The balancing between normative constraints and other communicative purposes may cause generic variation, even though the context of the genre is stable. This paper focuses on how companies declare their principles of disclosure. Through intertextual and discourse analysis, we explore variation in disclosure policies, and conclude which social practices the policy enacts in the sense of Martin's (2002) definition of genres as "configurations of meaning that are recurrently phased together to enact social practices". In a stable genre, variation may carry more meaning than in more heterogeneous genres. Therefore, the starting point of the analysis is Bhatia's multidimensional approach to genre, emphasizing the social context of the genre and accounting for both social relationships and textual aspects.

Keywords. Context, disclosure policy, generic structure, genre, intertext, linguistic variation, rhetorical purposes, social practices.

1. Introduction

Corporate disclosure policy is a document by which listed companies publicly reveal what principles they follow when they inform stakeholders of their financial situation and other significant matters which may change the valuation of the company in the financial markets. The policy document is a genre in the Investor Relations (IR) genre system. It has recognized communicative purposes, regulated or recommended content, an established name, and shared features of structure. Whilst the context of the genre is fairly stable, companies tend to have their own specific context of production and this may cause variation in the policy genre. (E.g. Bhatia 2004; Swales 1990.)

Disclosure policy is an interesting topic for genre-based research for several reasons. First, earlier research (Koskela 2013) has shown that the interdiscursive features of disclosure policies differ clearly from other strategy or policy documents of organizations, e.g. other communication strategy texts. Second, there is little previous research of this particular genre in any discipline (Bergman & Roychowdhury 2008). In contrast, previous research has focused on other IR genres, such as financial statement press releases (Kuronen 2012; Armitage & Marston 2008; Pander Maat 2007; Graham et al. 2005), annual reports (e.g. Grove Ditlevsen 2012; Beattie et al. 2008), earnings calls (Crawford Camiciottoli 2010), and sustainability reports (e.g. Perrini et al. 2011; Bowers 2010; Hockerts & Moir 2004). Finally, as disclosure policy is proactive communication of IR and more research on the reactivity/proactivity of IR has been called for (Laskin 2009: 226), current research helps to fill this gap.

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What adds to our interest in disclosure policy documents of listed companies in Finland is that the public recommendations for the genre were launched as late as 2008, making disclosure policy a relatively new genre, an incomer to the IR genre system. Consequently, the genre is not yet established in Finland, and variation is to be expected. In addition, the global crises in the financial markets (e.g. the cases of Enron and Parmalat) have accentuated the need to restore trust in listed companies (e.g. Argenti 2013). This gives companies motivation to publish a disclosure policy, even though it is not obligatory. After all, transparency is vital when investors make investment decisions and analysts give estimates of companies. All in all, the goal of disclosure policy is to regulate operations in companies in various ways. It also gives stakeholders a promise of consistent practices of releasing price sensitive information in the financial market (e.g. Ikäheimo & Mouritsen 2007).

Considering the global expectations and the need to restore trust (e.g. Seligman 2003; Thompson 2002; Gruner 2002), this article focuses on how companies declare their principles of disclosure. The aim of this article is to study what kind of variation exists in this type of regulated genre, and to explore the reasons behind the variation. Variation is interesting because it is an inherent feature of all genres (Martin 2002; Bhatia 2004, 2010) since a genre always reflects the genre system which it belongs to, and can therefore reveal important features of the social practice it enacts. In addition, variation is an especially relevant feature for disclosure policies, because the policy is recommended to be company-specific and to serve the purposes of each company (Financial Supervisory Authority 2013).

2. Data and methods

The starting point of this article is that the disclosure policy genre displays a considerable amount of variation. Based on this premise, the following questions will be posed: 1.What kind of variation is there in corporate disclosure policies?; 2. What are the potential causes of this variation?; and 3. What are the social practices embedded in the policies? The answers to these questions should reveal something about the essence of corporate disclosure policy as a potentially hybrid genre. According to Bhatia, hybridity can be seen in both mixed and embedded genres, and it may stem from expert writers' tendency to exploit genre conventions to their own advantage (Bhatia 2004: xv). Hybridity is also an inherent constituent in interdiscursivity (see below; Bhatia 2010: 37).

The analysis reported in this article is explorative or scaffolding in the sense that we map interesting research topics for future research of the genre because it has not been studied earlier from the perspective of genre. Therefore, the material of the study is restricted to policies of 11 companies in total, which makes a pilot-study possible. The companies in the data have been chosen based on the criteria that they are operating globally, they have been listed in NASDAQ OMX, Helsinki, and they are financially successful large companies in various fields of industry. The criteria of success include basic financial criteria, such as profit, but also assessment of risk tolerance (Balance Consulting criteria 2013). The data comprises 11 policies, the length of which ranges from 1/3 pages to 1 + 9 pages. It is notable that the practices of large companies might also be used – and are known to be used – as models by smaller companies. This adds to the interest of studying potential variation within the genre.

As suggested by Bhatia (2004), the empirical analysis in this article is carried out in separate steps. The first step is context analysis, the second step is content analysis, and as a final step, we will present some results of intertextual and discourse analyses. An important genre-theoretical assumption behind the analysis is that the text-external context, the contexts of production and consumption, is central for understanding interdiscursive variation. Interdiscursivity is here viewed as the appropriation of semiotic resources (textual, semantic, socio-pragmatic, generic and professional) across discursive, professional and cultural borders (Swales 1998, Bhatia 2004, Bhatia 2010: 34-37). Such appropriation is often used as a rhetorical strategy in order to reach certain communicative purposes, or when enacting social practices (Bhatia 2004: 23).

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Content analysis takes a deductive approach, as it is based on previous knowledge (Silverman 2011), in this case, the recommended content of disclosure policies published by the Financial Supervisory Authority of Finland (FSA). In 2008 the FSA presented its recommendations on what a disclosure policy should include. It is notable that companies planning to list on the stock exchange are especially and strongly recommended to have this document, whereas companies already listed are simply recommended to have it in order to guarantee a high level of transparency of the operations of the company. In other words, different companies may have different motivations for drafting their policies. In the intertextual and discourse analysis, we analyse intertexts and discourses, comparing our findings with those of Bhatia (2010), and attaching the findings to the interpretation of rhetorical purposes of disclosure policies in our material.

3. Context of the genre: Disclosure Policy in the Investor Relations genre system

The functional context of disclosure policy consists of the so-called *information markets*. The idea of information markets, put forward by McGee and Prusak (1993), implies, among other things, that people use information as an instrument of power, but that they also trade information for greater value. The latter aspect is relevant to the stock market and in investor relations, because the price of a stock is based on all the information available about the company and the industry (Ikäheimo & Mouritsen 2007).

Investor relations can be described as the ´gate-keeper´ of stock-specific information. According to the National Investor Relations Institute (NIRI 2003):

> investor relations is a strategic management responsibility that integrates finance, communication, marketing and securities law compliance to enable the most effective two-way communication between a company, the financial community, and other constituencies, which ultimately contributes to a company's securities achieving fair valuation.

Investor relations has a strategic role in listed companies (e.g. Argenti 2013; Dolphin 2004; Bushee & Miller 2005), and a high quality of corporate disclosures is an important issue for transparent and well-functioning capital markets (Miihkinen 2013). Investors today demand more communication, more transparency, and more access to companies than they have in the past. Argenti (2013: 208-212) emphasizes that in this situation companies competing for investment money need to create IR programs that deliver on these requirements. In other words, IR programs are needed to reduce uncertainty and lower the risk premium (Laskin 2009). Corporate disclosure policy is a manifestation of such programs.

Investor relations is involved in the so-called ´expectations game´, where the estimates that analysts make on the company are a crucial source of information for investors and media, and respectively a challenge for IR (Gruner 2002). There are sentiment-based biases in the expectations, and disclosure policy is a strategic reaction to such sentiments (Bergman & Roychowdhury 2008). Consequently, IR communication has been described as *mixed-motive* and *two-way* strategic communication (Laskin 2009: 227).

The EU transparency directive (2004/109/EC) establishes the general principles for the harmonization of transparency requirements in Europe. It states, among other things, that investor confidence is built up and sustained through the disclosure of accurate, comprehensive and timely information about security issuers. In Finland, the requirements have been implemented both in the Securities Markets Act (2010; 2013) and the rules of the exchange (NASDAQ OMX in the Nordic countries). The Act requires every listed company to have its own website for investors to ensure the possibility of equal, equitable and simultaneous access to information by investors (Securities Markets Act 2013; Rules of the Exchange 2013).

According to the results of our context analysis, the immediate context for the disclosure policies

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studied is the company website, which is in accordance with the recommendations described above. All companies included in the study publish their disclosure policy in the investors section on their website. However, the hierarchical structure of the investor section displays variation. The policies can be placed in three different locations; that is, they can be placed directly under the *Investor* section (2/11) or more typically within the section titled *Corporate Governance* (4/11) or *Investor Relations* or *Investor Services* (5/11). This categorization reflects the different understandings of the policy by the companies. A minority of the companies studied seem to equate disclosure policy directly with the core of IR, as an aspect affecting the fair valuation of the company stock. Disclosure policies of these companies can be found directly on the first page in the *Investor* section of the company's website. Some other companies associate disclosure policy with business reporting and accounting, that is, the normative and standardized world of business and accounting. These companies position their disclosure policy under the heading of *Corporate Governance*. And finally, some companies see the policy primarily as a tool to serve stakeholders, and as a realization of voluntary communication. These companies prefer to place their disclosure policy under the title *Investor Relations* or *Investor Services*.

The differences in positioning disclosure policies in company websites may signal differences in the genre status of the policies. As already stated, disclosure policy is a new genre, and as such it has been integrated into the prevailing, specific genre systems of companies. Consequently, because the genre systems are different, this is reflected in the position, as well as the content, of the new genre. The findings also indicate how social practices, such as organizing the communications function within the companies, are reflected in the placement of a genre, such as disclosure policy, on company websites. The overall organization of IR information seems to influence the status of the genre, and correspondingly, the status of the genre can be interpreted as a token of how IR is valued in the company. In this respect, social practices directly influence the organization of information.

Fig. 1 displays an example of how the disclosure policy can be presented on a company website. The example company, UPM, has placed its disclosure policy between two other policy documents under the heading *Governance*. There is a short introductory web text, a kind of cover letter, and a link through which the policy can be downloaded in a PDF format.
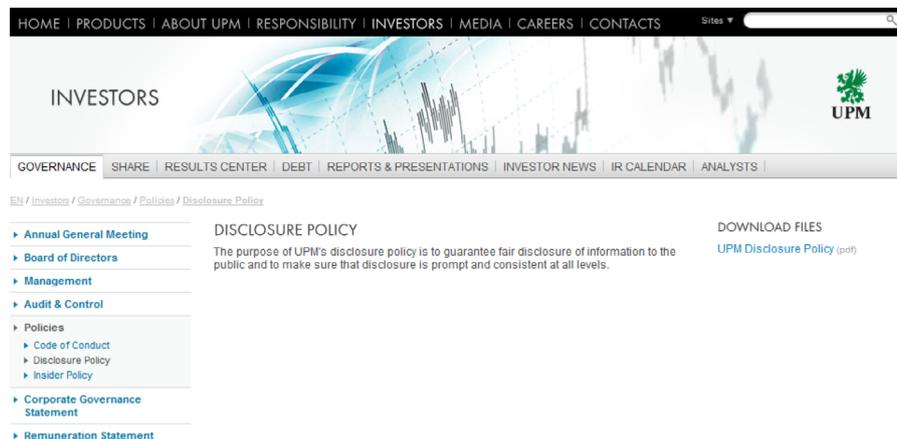
Figure 1: Example of UPM's website presentation of its disclosure policy

As already stated, placing the disclosure policy under *Corporate Governance* is almost as common as placing it under *Investor Relations*. An interesting exception in our material is the company Orion, which does not actually have a heading called *Disclosure Policy* at all, but instead publishes a brief web text under the heading *Orion IR policy* in the *Investor Relations* section. Still, this text carries the central content of the disclosure policy genre, and therefore the question can legitimately be asked: Does this kind of text belong to the disclosure policy genre or not? However, based on its function, contents and location on the company website, we consider it a member of the disclosure policy genre and, at the same time, it provides interesting evidence of variation within the genre.

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4. Content of disclosure policies

As described above, the Financial Supervisory Authority of Finland has provided recommendations as to the preferred content of a disclosure policy. According to these recommendations, a disclosure policy should state who is responsible for IR within the company, how the company intends to discuss its future outlook, what kind of stock value guidance is given in releases, what profit warning practices are in place, how the company interprets what is material or relevant information regarding fair valuation, and how encounters with investors, analysts and media are carried out. In addition, the company may wish to state any other principles it considers relevant (FSA 2013). Tab. 1 illustrates the variation of content of disclosure policies in our material.

Content	Frequency
IR responsible persons and goals	11/11
Investor meetings procedures and principles	8/11
Guidance principles	6/11
Internal procedures; profit warnings	4/11
Forward looking statements	9/11
Definition of material information	9/11
Other principles	11/11 "We obey the law"

Table 1: Variations of disclosure policy content

As Tab. 1 shows, a lot of variation exists in the content of policies in our research material. Basically, only two content items are shared by all policies studied: first, information about personnel responsible for IR in the company and the company's IR goals; and second, a performative statement about the company's compliance with the requirements for listed companies. It is interesting, that the FSA recommendations do not require such a performative statement. Instead, FSA recommends that companies clearly describe what concrete actions are being taken in order to obey the law. Nevertheless, the performative statement has become a central feature of the genre, while the more detailed descriptions are on certain occasions being omitted in large parts. There are various reasons for variation in the content. One reason is that companies are interpreting disclosure policy as a genre related to corporate governance (CG) statements. The Corporate Governance Code (2010) follows the leading 'comply or explain' rule, meaning that in case of deviation from the recommendations of CG the company is obliged to explain or argue why it has not complied with the code. Otherwise the content of the statement document follows recommendations of the code, offering information on the governance bodies and principles of remuneration. This all suggests that non-compliant companies must understand that any non-compliance regarding disclosure policy has been explicitly motivated. A further observation is that disclosure policy, as a new-comer in the genre system, seems to be seeking its functional position in relation to other genres in the IR genre system.

5. Findings of intertextual and discourse analysis

In the final phase of this article, we present the results of two rhetorically and linguistically oriented analyses. First, we focus on the intertexts that are present in the disclosure policies studied, and on the discourses which the intertexts realize. Second, we present some examples from the material in order to interpret what types of social practices disclosure policies enact.

5.1. Intertextual and interdiscursive features of disclosure policies

The aim of our intertextual analysis is to find out how disclosure policy is positioned within the company's genre system in relation to communication in general, to IR, and to other genres within companies. As Bhatia (2010: 37) states, both intertextuality and interdiscursivity are tactical appropriations of semiotic resources over texts, genres, social practices and cultures, and as such they can be used for creating new and hybrid forms to give expression to variable communicative purposes. By studying explicit mentions of other texts or genres in the disclosure

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policies - that is, text-internal resources - it should be possible to say something about which text-external resources are likely to be present in the material. After all, both text-internal and text-external appropriations operate simultaneously. (See Bhatia 2010: 34-37.)

In the analysis we have listed all explicit mentions of other texts or genres in the disclosure policies studied. In Fig. 2 each text or genre has been listed only once, but the multiplicity of texts and genres involved in disclosure policy documents is still noteworthy.

Figure 2: Intertextual diversity of disclosure policies

When it comes to stability and variation, our results show that there are intertexts that are mentioned in most of the policies, but there is also company-specific variation. In addition, variation exists in the level of detail: shorter texts naturally have less intertextual relations than longer ones.

Based on the analysis, we have categorized the intertexts according to the discourses they tend to represent. Our findings show that there are intertexts representing *legal discourse*, *accounting* or *finance discourse*, *management discourse*, *communication discourse*, as well as what we have called *stock exchange discourse*. Compared with Bhatia's analysis of intertexts of annual reports (2010: 39), showing traces of accounting discourse, discourse of economics, public relations discourse and legal discourse, our analysis adds *management discourse* and *stock exchange discourse* to the categorized intertexts. In addition, our analysis expands the view of PR discourse (Bhatia 2010) into a more comprehensive *(corporate) communication discourse*. In our view, this is the discourse that, while integrating the intrinsic elements of management discourse and stock exchange discourse into that of communication, motivates disclosure policy as communication involving an increasingly heterogeneous and complex audience. Incorporating the latter discourses into corporate communication discourse emphasizes the strategic role of investor relations (e.g. Argenti 2013: 29).

5.2. Social practices enacted by disclosure policies

In the last part of the analysis we will present some examples of the ways the disclosure policies studied enact relevant social practices. These practices are connected with the multiple and complex communicative purposes of these policies. As shown in the content analysis (see Tab. 1), there is *a performative declaration* in the beginning of the disclosure policies where the company declares in public that it obeys laws and regulative norms. In example 1 (below) the Stora Enso Group declares its legal framework. Even though this type of declaration suggests

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that this is not required by authorities, all companies in our material still include it in their policies. Such an explicit ethical statement seems to be an important message in the current financial environment. Simultaneously, it also indicates how contextual factors have direct communicative and textual implications for the genre.

(1)   The Stora Enso Group complies with stock market, securities and other legislation of Finland, and relevant legislation of Sweden. The Company complies with the regulations and guidelines of all the stock exchanges on which it is listed. (Stora Enso Group's Disclosure Policy 2012)

As revealed by the discourse analysis above, disclosure policy is a complex genre with a heterogeneous audience which is reflected in its overall communicative purpose. Naturally, the different audiences have different needs. To the stakeholders, the policy gives relevant information concerning the fair valuation of the company stock. To the employee, it offers advice on what is required of communication in a listed company. Further, it clarifies internal responsibilities for those involved in releasing information, and it informs those that might be affected, in the spirit of educating the organization. Finally, disclosure policy promotes and legitimates the company or the IR (or corporate governance) function of the company.

Example 2 shows how the complexity of the genre is reflected in the discourse. The example stems from Tikkurila's disclosure policy and it includes both promoting and legitimating aspects, thus exploiting the new genre as an internal tool for promoting the IR function. After all, the document is confirmed at the highest level of the company - by the board of directors. This gives IR personnel a stronger mandate than before within the organization itself.

(2)   The goal of Tikkurila's investor relations activity is to support the creation of fair valuation of Tikkurila's share and other securities through timely communication of relevant, understandable, reliable and comparable information, enhancing investors' and analysts' interest in Tikkurila, building investor loyalty and attracting new investors and analyst coverage. (Tikkurila 2010)

The contextual requirements of disclosure policies are very similar to those of annual reports (Grove Ditlevsen 2012: 96–98). According to Grove Ditlevsen, companies primarily use annual reports to meet legal requirements, but they simultaneously take into account both the specific needs of public relations-oriented strategic stakeholder communication and investor relations. She argues that public relations primarily serves a persuasive purpose, whereas investor relations focuses on an informative purpose. However, it must be recognised that as audiences become more complex and heterogeneous these primary purposes become blurred and converged (Grove Ditlevsen 2012).

6. Conclusions: The essence of a hybrid genre

Variation in corporate disclosure policies can be seen in the appropriation of various semiotic resources, both text-internal and text-external. As our findings indicate, there is variation in how the disclosure policies are placed in their immediate context, in the length and level of detail of the documents, in the number of documents needed, in the content, as well as in the intertextual and interdiscursive profiles. This new genre, launched in Finland in 2008 in the wake of the EU transparency directive (2004), brought about changes in the social practices around investor relations. The changes were adopted by some companies more than others, which may explain some of the variation.

A shared communicative purpose is one of the defining characteristics of a genre. However, our analysis shows that there is not just one communicative purpose for the disclosure policies studied, but there are mixed-motive documents (Laskin 2009; Askehave & Swales 2001), addressed to both internal and external publics. In this respect there is considerable similarity between disclosure policies and annual reports. Grove Ditlevsen (2012) describes annual reports as a complex genre because they are used to serve multiple purposes, i.e. those of legal

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requirements, public relations as well as investor relations. Interestingly, while IR communication has traditionally been directed to a company-external audience (see Laskin 2009; Hockerst & Moir 2004), communicating disclosure policy to employees might offer an explanation for the presence of management discourse in some policies.

We may conclude that because disclosure policy documents enact social practices of different kinds in different companies, they are made to serve various communicative purposes, depending on the organizational context, the genre system of the company, and possibly also the history of communication practices and routines in the company. According to our interpretation, the following factors may explain variation in the genre: varying intended audiences, varying functions (that is, internal or external use), varying organizational and social practices, varying interpretation of the generic and professional context, short history of the genre, and the flexibility potential allowed by the norms and recommendations. These potential causes of variation indicate that disclosure policy as a genre can serve competing communicative purposes, and in that sense it is a hybrid genre (cf. Bhatia 2004).

The following statement from an experienced Chief Communication Officer of a large listed company indicates the way in which she views the role of disclosure policy and the reasons for drafting one. This quotation sums up the essence of the corporate disclosure policy as a genre and concludes our findings:

> Published Disclosure Policy creates a backbone to internal communications guidelines, which complement the disclosure policy. On the other hand, published basic definitions confirmed by the board of directors is a strong mandate to business units concerning communications practices. To my mind, at a general level, it is in every respect good to increase transparency of communications of listed companies – both externally and internally. DP is one tool to serve this end.

This pilot study opens up paths for further research. In particular, it would be important to study the linguistic and textual level more closely in an attempt to reveal how the appropriation of semiotic resources is used as a rhetorical strategy across professional and discursive borders in order to reach multiple communicative purposes in a new and complex hybrid genre. Another direction of future research is more international in its context. For instance, i the findings of this research could be compared to those based on data from other Nordic and European countries. It could also be compared to U.S. data, especially because the regulations of the U.S. Securities and Exchange Commission (SEC; www.sec.gov) stress a restoration of trust in the financial markets, not surprisingly because the recent global financial crises started in the United States. Further, a deeper rhetorical and text analysis is needed in order to account for the linguistic features employed in order to maintain a stable tone and style while appropriating semiotic resources from so many different genres and discourses. In line with Bhatia (2010: 48), one possible direction of study would be a critical approach towards the discursive activities of professional cultures in the context of disclosure. In addition, it would be illuminating to look more closely at interdiscursivity as interaction between discursive and professional practices.

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Tikkurila's disclosure policy 2012

UPM's disclosure policy 2012

Wärtsilä disclosure policy 2013

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Genre dynamism in IT professional communication

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Abstract. The paper presents the results of the cross-sectional empirical research exploring the network of genres in IT domain in Latvia. The theoretical basis for this research has been to a large extent grounded in the English for Specific Purposes (ESP) and the New Rhetoric genre schools. The empirical research method is a two-staged discourse analysis. During the first stage the data collection tools were semi-structured interviews with 25 IT professionals aimed to identify the recurrent genres pertinent to the domain and describe the social context in which they occur. The second stage involved genre analysis, in order to define the communicative aims and intertextual relations IT professional documentation and prove its recontextualised nature. The obtained results highlight the significance of the social context for conducting genre analysis in IT domain. They reveal that the genres in the professional communication network have hierarchical, sequential and transformational relations, with the business requirements, explaining the business logic of discursive practices, being the dominating one. Moreover, discursive practices facilitate uncovering constitutive intertextual relations and help to explain emerging genres and eliminating obsolete ones.

Keywords. Communicative aim, discursive practice, genre dynamism, recontextualisation.

1. Introduction

Outlining the background and the situational context of the study, recent decades have been characterized by rapid development in various branches of technology as well as increased information flow. One of the most dynamic spheres with complex communication frameworks is Information Technologies (IT). The English language has been playing a crucial role in these processes serving as a lingua franca for professionals' communication, expertise exchange, training and knowledge management and applying innovative solutions in business environment.

Moreover, the headquarters of leading software development companies, hardware manufactures and service providers like Apple, Microsoft, Hewlett Packard, Facebook are located in the USA, which contributes to the tendency of the ultimate domination or even hegemony of the English language in this domain.

The topicality of the study within Latvian context is determined by the fact that the leading local IT companies operate internationally and provide outsourcing activities (Accenture, Tieto, CTE, CTCo, Forticom) with English being as a primary means of communication. It sets the requirement for the employees to to develop professional communicative competence for employees of all levels and forces them to deal with professional genre dynamism.

The abovementioned factors and the fact that the research papers addressing similar issues are scarce have determined the aim of the paper, which is:

- ○ To investigate applied linguistic theories underlying the concepts of genre, genre analysis and genre dynamism in the institutional context;

- ○ to identify the recurrent genres in the IT institutional domain, organize them into a system and determine their dynamic relations.

This research is based on the English for Specific Purposes (ESP) and the New Rhetoric genre schools postulates. The empirical research method is a two-staged discourse analysis. During the first stage the data collection tools were semi-structured interviews with 25 IT

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professionals aimed to identify the recurrent genres pertinent to the domain and describe the social context in which they occur. The second stage involved genre analysis, namely, identifying the communicative aims and intertextual relations of IT professional documentation and prove its recontextualised nature.

The results are of high practical value since they may be implemented to improve profession standards in IT domain, issued by the ministry of Education and Science, the syllabi within the curriculum higher professional education and design customized materials with an aim to prepare IT specialists that would meet labour market needs. They may also be used to train IT professionals on-site and design professional development courses, e.g. content and language integrated (CLIL) courses. The present research is a cross-sectional study of qualitative nature as it is aimed at describing institutional language use.

1.1. Genre and genre dynamism

In contemporary linguistics, the development of the genre concept has significantly been facilitated by the SFL, New Rhetoric School and ESP genre schools, the first two accounting for the phenomenon of dynamism..

The representatives of the New Rhetoric Studies (Miller 1984, Berkenkotter and Huckin 1995, Bazerman et al 2009) view genre as a social action, a reflection of the activities performed by the community, creating a shared knowledge base. In their views, genres not just express the communicative purposes within the discourse community but mediate the activities pertinent to the domain. Thus, while ESP genre scholars (Swales 1990, Swales and Feak 2004, Bhatia 1993, 2004) set an aim to identify genres, their communicative aims and examine structural and lexico-grammatical peculiarities, the New Rhetoric researchers address genres as "sociological concepts embodying textual and social ways of knowing, being, and interacting in particular contexts' and consider genre textual regularities as socially constructed." (Bawarshi, Reiff 2010:57).

Influenced by activity theory, ethnomethodology, Bakhtinian dialogism, phenomenology and rhetoric studies, the scholars assert that genres reflect the recurrent practices of a discourse community, are inextricably tied to the social context and form genre repertoires (Orlikowski and Yates 1994), genre hierarchies, systems and sets (Swales 2004) or genre ecologies (Spinuzzi 2000) etc.

One of the most notable definitions in the New Rhetoric tradition was provided by Miller who theoretised upon and recontextualised the concept of genre as a social action and defined it "as typified rhetorical actions based in recurrent situations."(Miller 1984:31)

Merging the views of social phenomenology and rhetorical criticism, the New Rhetoric scholars claimed that genres emerge from the "the knowledge that practice creates" (ibid:27) and govern work of organisations *per se* or the accomplishment of smaller tasks. Drawing on Campbell and Jamieson's (1978) view that "a genre does not consist merely of a series of acts in which certain rhetorical forms recur[...] Instead a genre is composed of a constellation of recognizable forms driven by an internal dynamic" (1978: 21) and Bitzer's (1968) notion of exigence, Miller (1984) suggested that people in their social networks recognize the need to respond (exigence) to specific situations, categorise those situations and select linguistic means to respond effectively, which explains the concept of genre dynamism in the institutional setting.

Berkenkotter and Huckin (1995) followed a similar view and claimed that genres dynamically reflect the knowledge and activities of a discourse community and the processes of knowledge formation and genre formation are bound by a socio-cognitive perspective. They (ibid) outlined the following genre characteristics in relation to genre as a social action belonging to a discourse community:

(1)   dynamism;

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(2)   situatedness;

(3)   form and content;

(4)   duality of structure;

(5)   community ownership.

They (ibid) claimed that genres change in accordance with the communicative needs of the discourse community and are viewed as "dynamic rhetorical forms that are developed from actors' responses to recurrent situations and that serve to stabilize experience and give it coherence and meaning" (1995:4). They considered that genre repertoire, system or ecology reflect discourse community activities, actions and operations, and, therefore, change as soon as the activities change since "our knowledge of genres is derived from and embedded in our participation in the communicative activities of daily and professional life." (ibid:4) The activity being overarching, discourse community in New Rhetoric tradition should be regarded as a community of practice, which not only recognises the form and structure of certain genres, but also locates it in wider linguistic and socio-cultural context and applies it appropriately. Duality of structure presupposes that genre and social actions mutually influence each other. The ownership of genre as a social action is unique in a way that the participants involved in the process of communication share common knowledge base, but for the outsiders they are difficult to identify and manipulate.

1.2. Genre and genre systems

The views that genres should not be regarded in isolation but in relation to other genres reflecting the systems of activities were proposed by the researchers of the New Rhetoric Studies (Bazerman et al 2009, Orlikowsky & Yates 1994, Spinuzzi & Zachry 2000, Spinuzzi 2004) and later implemented by the ESP scholars (Swales & Feak 2004, Bhatia 1993, 2004). Discourse practices or social actions led researchers to look at genres of a discourse community as a system accounting for interdiscursivity. The scholars used a number of frameworks to describe genres that mediate social actions within complex systems of activities, namely, genre ecologies and genre assemblages (Spinuzzi, 2004), genre sets (Devitt 1991), genre constellations and networks (Swales 2004), genre colonies (Bhatia 2004), genre system (Bazerman &Prior 2004), genre repertoire (Orlikowski and Yates 1994).

Spinuzzi (2004) provided exhaustive definitions of genre assemblages, being an umbrella term for genre sets, genre systems, genre repertoires and genre ecologies, which sometimes are used interchangeably.

He drew a distinction among the terms in question (ibid) and defined genre ecology as

> an analytical framework for studying how people use multiple artifacts – such as documentation, interfaces, and annotations – to mediate their work activities. Unlike other analytical frameworks, the genre ecology framework has been developed particularly for technical communication research, particularly in its emphasis on interpretation, contingency, and stability. Although this framework shows much promise, it is more of a heuristic than a formal modeling tool; it helps researchers to pull together impressions, similar to contextual design's work models, but it has not been implemented as formally as distributed cognition's functional systems. (2000:20)

Freedman and Smart (1997) shared a similar view and claimed that genre ecology reflects genres as activities cyclically performed by the members of discourse community, which, on the one hand are stable, possessing stable connections with other genres, and, on the other hand, may change in response to contingencies, i.e. "opportunistic coordinations that people and activities make among genres." (Spinuzzi & Zachry 2000:200)

Spinuzzi & Zachry (2000) characterized ecologies in terms of contingency, decentralisation, and stability.

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Another concept approaching genre network as a dynamic developing phenomenon is genre repertoire. Orlikowsky and Yates (1994), who coined the term, emphasised non-sequential overlapping nature of relation among genres and claimed that the members of discourse community are exposed to several genres at a time typical of their discourse practices.

 In contrast, genre sets and genre systems are viewed as sequential phenomena, e.g. by Devit (1991) who claimed that 'in examining the genre set of the community, we are examining the community's situations, its recurring activities and relationships…this genre set not only reflects the profession's situations; it may also help to define and stabilize those situations.'(1991:340) Swales and Feak (2004) posited that temporary or individual ordering combines into genre sets with communicative event(s) being central. (ibid:23)

Spinuzzi (2004:2) proposed to compare the concepts described above against the following criteria: perspective, the mode of action, agency, relationship between genres and foreground genres. The results are presented in Tab.1 below.

	Genre sets	Genre systems	Genre repertoires	Genre ecologies
Perspective	Individual	Communitarian	Communitarian	Activity
Model of action	Communicative	Communicative	Communicative/ performative	Mediatory
Agency	Asymmetrical	Asymmetrical	Asymmetrical	Symmetrical
Relationship between genres	Sequential	Sequential	Sequential and overlapping	Overlapping/ intermediatory
Foregrounded genres	Official (stabilized)	Official (stabilized)	Official (stabilized)	Unofficial (dynamic) and official (stabilized

Table 1: The Comparison of Genre Networks (Spinuzzi 2004:7)

The findings verify the distinction between the frameworks with different analytical focuses and support rather different agendas.

For the present research, genre repertoires and genre systems are of paramount significance as they reflect the genres of the particular discourse community, bearing a communitarian perspective. The users are affected through the communicative and communicative/ performative models of action since the genres in questions perform transactional or ideational language functions, possess a set of predictable communicative aims and induce the members of discourse community to action. In both cases the agency is asymmetrical since individuals are in control of genres in the process of discourse consumption and production. The nature of relations in genre is sequential (one antecedent or succedent to another) and sequential/ overlapping (with multiple genres operating simultaneously during a communicative event). The genres are viewed as stabilised (ESP) or stabilized for now (New Rhetoric).

Investigating the sequential genre organization further, according to Swales and Feak (2004), if genres are set in the logical order of occurrence, 'their chronological ordering, especially if one genre is antecedent for another' forms genre chains. (ibid:18) Other scholars (e.g. Berkenkotter, 2001) use the term system, applying it to the intermediate level of units of institutions.

One more sequential type of genre organisation is genre hierarchy, which, according to Swales (ibid: 13-14), implies ordering different genres in the order of importance and prestige, 'their perceived quality differences and rankings' (ibid 2004:18) determined by interdiscursive processes. The ranking may alter in various spheres and geographical locations. According to Swales and Feak (ibid), genre hierarchies, chains, sets and systems form and organic network of genre constellations.

Supplementing Spinuzzi's (2004) table with Swales' and Bhatia's typologies, i.e. genre chains, hierarchies and constellations, the characteristics that may be applicable are presented in Tab. 2:

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	Genre chains	Genre hierarchies	Genre constellations
Perspective	Communitarian/ chronological	Communitarian/ dominant	Activity
Model of action	Communicative	Communicative/ performative	Mediatory
Agency	Asymmetrical	Asymmetrical	Symmetrical
Relationship between genres	Sequential	Sequential and overlapping	Overlapping/ intermediatory
Foregrounded genres	Official (stabilized)	Official (stabilized)	Unofficial (dynamic) and official (stabilized)

Table 2: The Comparison of Genre Constellations (compiled by the author)

As it can be seen from Table 4 above, genre constellations (Swales 2004) and genre ecologies (Spinuzzi 2004) possess identical characteristics and may be used interchangeably, whereas other typologies cannot since they actualise diverse analytical perspectives, e.g. chronological and sequential organisation of genres (chains), dominance (hierarchies), individual requirements (sets), communicative purposes (colonies) etc.

To summarise, in this research genre is approached as a mediatory tool to reflect the practices of discourse community. Since the activities that are reflected in genres are complex, genres are also reflected as a complex system with various relations, i.e sequential, overlapping, dominating etc. Genres change in accordance with the communicative needs of the discourse community and are viewed as dynamic rhetorical forms.

2. Empirical results and discussion

The results of the interviews revealed that depending on the (field) domain and communicative aims, the documentation is subdivided into four streams, namely, quality assurance, project management, technical operational and business operational (administrative). Office operational documentation has been eliminated from the present study since its creation is determined by local legislation (e.g. job descriptions, labour contracts, invoices, Second Level Agreements (SLA) etc) and office management operations, but professional discursive processes govern the creation of technical operational, project management and are influenced by quality assurance domain documentation.

Category	Activity	Example
Sequential	Rank according to chronological sequence	A test case is tested, a bug is identified and a problem report it written.
Hierarchical	Rank according to significance/ from general to particular	Specifications, configuration management plan and test strategy are subdued to operational architecture
Transformational	Transfer information of one genre into the other	A business solution is outlined in a business case and business requirements and then converted by a business analyst, software architect and project manager into a technical solution presented in the form of operational architecture, system, functional and non-functional requirements

Table 3: Coding relations between genres

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As it was described above, the data from the protocol sheets were first grouped according to the domain or sub-domain it belonged to, i.e. software development, testing, business analysis, project management, quality assurance, forming genre repertoire with further gradual retrieval after coding. First, genres were coded in interview protocol field notes, using the interviews to identify genres. A genre was codified if it was mentioned by at least two professionals. The genre was further verified when a textual artefact was submitted to the corpus. The coding of genre relations is outlined in Tab. 3.

Tab. 4 illustrates the organisation of the genres in the sample into a repertoire (Bhatia 2004) based on the discursive practices/ activities and communicative aims and ecology (Spinuzzi&Zachry 2000) or constellations (Swales 2004) based on their meditational relations, the outline being the same.

Characterising genre repertoire, it takes the perspective of the discourse community, thus, being communitarian. The networks of genres model action as communication, possessing performative character, hence, the model of action is communicative/ performative. The relationships are initiated by the discourse community, thus, being assymetrical. The genres in the columns are organised chronologically into chains, the relations being sequential and hierarchies, the relations being dominant. The overlapping relations or relations between the domains are marked with arrows and are of a transformational character, namely the source genre is reconceptualised and modified into a target genre. The system as a genre repertoire is considered to be stabilised for now.

Investigating the network as genre ecology, it takes the perspective of the professional activity, thus, the model of action being mediatory. New activities can result in the emergence or elimination of genres, thus, the relationships are intermediatory/ overlapping. The network deals with agency symmetrically (with individuals and genres mutually controlling, guiding, and mediating each other). The genre ecology is considered to be dynamic, for instance, in some projects automated testing is performed (activity), therefore test cases are not generated by test engineers, but by the testing tool (having a different rhetorical organisation and linguistic content), if at all. It provides an example how an activity may influence the process of genre creation or elimination. The results have been summarized in Tab.4.

Genre Chains and Genre Hierarchies	Quality Assurance	Project Management	Technical Operational
	quality policy	**business case description** **business requirements**	**operational architecture** **systems requirements**
	quality manual		functional and non-functional specifications
	quality procedures		test strategy test cases problem/bug report or change request
	assessor's report	**a project plan** project plan (project scope, project schedule, change management plan, resource, financial, quality, risk and acceptance plans)	configuration management plan repositories configuration
	certificate	status reports	reports on fixes
		a closure report	Manuals
		an acceptance act/note	

Table 4: Genre ecology of the participants in the sample

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3. Conclusions

To summarise, genre constellation or genre ecology in IT comprise four domains, i.e. technical operational, project management, quality assurance and business operational, the first three being crucial for the present study. Genre ecology is devised underlying sequential, hierarchical and transformational relations. Genre recontextualisation is observed between the domains (e.g. in case of business case and business requirements transformation into operational architecture and system requirements). All the genres in the network across the domain share four common communicative aims, i.e. to regulate and guide the professional activity; to inform about a professional activity, system, product, application; to report progress of a professional activity; to verify/ evaluate the compliance a professional activity, system, product, application to certain requirements.

No changes have been observed in the quality assurance section since the aim of this domain is to set guidelines for quality managers. The dynamism might be observed in the new versions of standards published with minor amendments. In the project management domain the genre dynamism depends on the size of the project, i.e. the bigger the project, the more consistent the documentation set. In smaller projects some subgenres of the project plan may be merged. Technical operational set has demonstrated the highest degree of dynamism, especially if the company implements agile project management and software development to speed up the process of software delivery to production environment or uses some automated tools. Then the documentation is generated automatically (e.g. test cases and defect reports) by the system.

4. Acknowledgements

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Professional communication in the world of diversity

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Abstract. Constantly increasing global connectivity, integration and interdependence affect workplace relations which have to be adapted to the new reality. Global workers need to know how to operate in new, often challenging environment, how to understand cultural diversity and ethical issues. Communicative competence is a skill that is top-ranked by employers. It includes all the behaviours and feelings that exist within the participants of the communication process, and which govern interactions. It is essential for establishing appropriate interpersonal and professional relationships that allow building trust and lead to successful workplace communication. Lack of communication skills or lack of confidence in using such skills may hinder the effective use of the language chosen for communication. The Towers Watson 2009/10 Communication ROI Study shows that companies which are highly effective communicators generate higher total return to shareholders over a five-year period than companies paying less attention to communication issues. Yet, there is evidence that European companies make losses due to poor communication. Insufficient knowledge of intercultural issues and its impact on the ultimate outcome of business dealings is common among business personnel in various countries. In times when globalization reached the momentum, the focus of interest of education institutions should be on intercultural training which allows learners to communicate effectively with speakers representing different cultural backgrounds. Recent business college graduates, however, are lacking in communication skills that allow them to be successful in diverse and global work-related environment.

Keywords. Business communication, diversity, intercultural awareness.

1. Introduction

Globalization opens unlimited opportunities in various aspects of life but only for those who can handle the new reality. In times when it reached the momentum, the focus of interest of educational institutions should be not on" teaching to the test" but providing university graduates with skills that will prepare them for challenges ahead and increase their employability. In the corporate world, it is becoming even more apparent and necessary.

For decades people engaged in business, whether as entrepreneurs or educators, tried to answer the question: What guarantees success? Is management more about art or science? Giving an answer in favour of either could be challenged. On the other hand, answering that management is both art and science does not require great wisdom. Although not as old as humanities, business education has a well-established tradition. Schools specializing in teaching business related subjects were known in 18th century e.g., Aula do Commercio in Portugal was founded in 1795, Harvard Business School in 1910.

Whichever of the plethora of business education institutions we choose to study at, we can expect to be taught certain core subjects including, among others, economics, entrepreneurship, operations management, strategic management, HRM, business law and ethics, accounting. In most cases the subjects aim at developing hard business skills - concrete areas of knowledge and abilities that can be easily defined, usually learned in schools and from books, and relatively easily measured. This is the science. What is the art? The art is a set of soft skills that business people should possess to work effectively in various roles contexts. According to Gra Direct (2008), although important, the right academic qualifications are not the key requirements. The most valued by employers are: ability to analyse complex information and solve problems, flexibility and adaptability, teamwork, communication skills. More and more often one of the employment prerequisites is fluency in foreign languages, English in particular.

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2. Communication in diverse companies

Nowadays English is no longer regarded as one of the foreign languages individuals may wish to learn. It is necessary to operate effectively in the globalized world. There is a growing evidence that English has become the primary language for business communication. In fact "it has come to lead a life of its own as an ergolect, or work language" (Rogers, 1998). GlobalEnglish, one of the global providers of services to companies wishing to develop their employees' Business English communication skills, surveyed 26,000 of its users to get their perspectives on the globalization of English, trends in business communication, and the needs of global enterprises. According to the results of the Globalization of English 2010 survey "it remains clear that the "flattening" of global business increasingly mandates English competency as a crucial skill for the workplace. A growing number of global workers must communicate in English—both within and outside their company—on a regular basis. 92% of global employees say English is required or important for their job, and this is true at all levels of the organization all over the world. At the same time, only 10% of global workers consider their English fluency as sufficient to communicate effectively at work.

There is evidence that European companies make losses due to poor communication (ELAN Survey 2006). Why? Business communication is always goal oriented and regulated by a set of rules and norms that do not commonly apply in non-professional communication situations. The lexical and grammatical choice often depends on the institutional context and constraints on what is allowable to be said or written. Certain linguistic features may be regarded as more or less appropriate in particular genres as they may affect the way message is received and understood. Modern communication dynamics require much more from communicators engaging in professional discourse than it was necessary before, resulting to a great extent from progress in communication technology, the need for specificity, the unprecedented workplace diversity. To stay on the market businesses have to be sensitive to variations and differences in business encounters as establishing positive relationships may be critical for success.

Global workers need to know how to operate in new, often challenging environment, how to understand cultural diversity and ethical issues. The first thing that comes to mind when thinking about intercultural issues is the communication problem that may appear between representatives of different nationalities. But it does not have to be a clash between e.g., native and immigrant workers. There are many dimensions of diversity, such as sex, age or cultural background. It has been proven that men think differently than women, that people of different age may see things differently as they often have different sets of values, just like people coming from different cultural backgrounds. Bednarek and Caple (2010: 7) claim that "communication is the collaborative construction and negotiation of meaning between the self and others as it occurs within cultural contexts" and explain that the act of communication is not "just about the speaker but also about those who may come in contact with her/his messages (including language, sounds, gestures, and other forms)". Building rapport requires a set of advanced communication skills, which in the so far relatively homogenous companies, have not been an imperative. Yet, lack of intercultural awareness and understanding of its impact on the ultimate outcome of business dealings is common among business personnel in various countries

An ever growing number of individuals get immersed in situations they have never experienced before. Today's graduates are technologically sophisticated multitaskers who are deficient in skills that allow them to process information in a variety of ways to accommodate the diversity that exists in the workplace together with the global nature of business (Hartman and McCambridge 2011: 26). Business 'students should be educated about the dynamics of the interpersonal communication process and should be taught techniques for improving their interpersonal behaviour' (Hulbert et al, 1987: 25). To this end, business schools introduce various subjects and courses incorporating business communication, including English as a Foreign Language. Planken et al. (2004: 309) notice that "content from other courses (intercultural communication, management, marketing, IBC research, document design) is integrated into FL curriculum".

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Sometimes an assumption is held that it is the role of an EFL teacher to help learners in "achieving an awareness of cultural diversity and an understanding of different modes of living and behaviour" (Krück, 1992: 299). Despite some efforts undertaken by educators, there is a gap between where business graduates are and where they should be in terms of communication skills.

3. Business communication in lingua franca

Being commonly chosen as a medium for communication, English can be called a "global language" (Crystal 2003) or an "international language" (Jenkins 2003). In 1989 T.S. Elliot argued that a common language needs a common way of thinking and feeling. Yet as M. Kramer (2001:152) notices "despite the prevalence of English in business, we should not assume that our business audience knows our variety of English or understands it well. Furthermore, we should not make the universalistic mistake of assuming that because someone speaks the same language we do, his or her thinking will also be much the same".

> Language is almost always identified as an important element of intercultural communication. It is taken as the medium through which a culture expresses its world view. Language is learned and conveys values, beliefs, attitude, perceptions, norms, etc. The importance of language to intercultural communication is most obvious when cultures speak different languages. Differences in meaning can occur even when different cultures use the 'same' language. It is particularly common in use of lingua franca. (House 2003: 573)

Knowing the language system is not enough to enable the speaker to communicate freely. "A lot more is involved: there are rules of use without which rules of grammar would be useless; what is needed is not so much a better understanding of how language is structured, but a better understanding how language is used." (Dakowska 2007: 92). Effective communication depends, among others, on the right selection of content, proper organization of the content material, on the style and tone a speaker uses in various situations.

As communication process does not take place in isolation but in a social context, it has become obvious that to develop communicative fluency, Foreign Language Teaching (FLT) methodology should not only focus on developing linguistic but also interpersonal skills as they complement each other. Lack of interpersonal skills or lack of confidence in using such skills may hinder the effective use of the studied language. In other words, to be linguistically equipped to get engaged in effective communication acts, foreign language speakers need to possess a well-developed set of competences leading to communicative competence. Competences necessary for communication are defined in detail in The Common European Framework of Reference for Languages. According to this document (CEFR 2003) communicative competence includes linguistic competence, sociolinguistic competence and pragmatic competence. Developing language competence has become the main objective of FLT. However, a question that should be asked is how it translates into the ultimate real- life communication process outcome. Since there is not one reliable tool for checking particular professional language competence, communication skills required by each foreign language user are best verified by real life experience. Too often, though, it becomes evident that teaching practices and the performance of language users in their daily professional encounters do not have much in common.

4. Business communication needs and challenges - empirical study analysis

To gain an insight into the possible reasons of the problem, a multi-stage empirical research was undertaken in 2012. The first part of the study, already completed, focused on distinguishing communication skills that business people need to perform their professional duties in typical business situations, and the most effective ways of developing them. The research tool chosen for this stage was a survey distributed among part-time students of various business related

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disciplines at one of the business universities in Poland. The study group was diverse as it consisted of people representing different age groups, different job experience and different types of companies operating in various sectors of economy.

There were 230 questionnaires distributed but six of them could not be analysed due to incorrect completion. Each questionnaire had 22 questions relating to business communicators' needs and skills, both in native and foreign language. The analysis of the results allowed to draw some interesting conclusions, however, due to the limitation of the paper only the issues that are most relevant for its topic will be addressed.

Most of the respondents (67%) admit to using both oral and written communication in their workplace. Only oral forms are used by 25%, while only written by less than 10%.
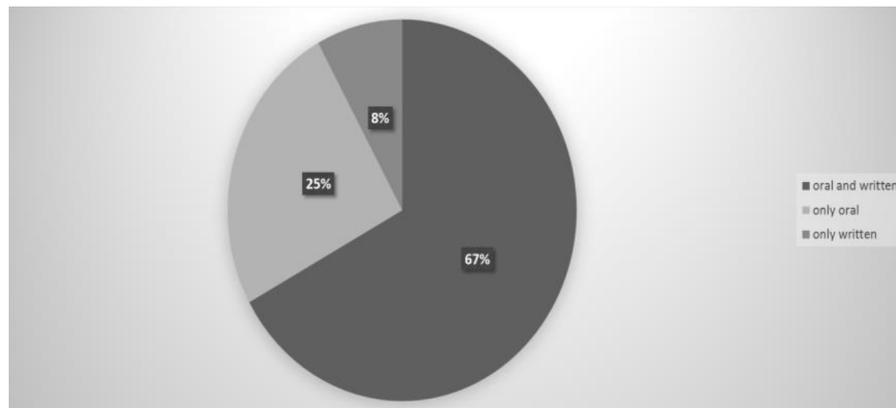
Figure 1: Use of business communication forms

The written forms required on daily basis include (as ranked by the respondents): e-mails, business reports, routine forms, business letters. The oral forms most frequently chosen are: telephone conversations, giving professional presentations, attending and running meetings and business negotiations.

As already mentioned, the respondents work in different types of firms. In originally Polish companies only 52% of the respondents have to communicate professionally in a foreign language, in international corporations 70% of the respondents are engaged in communication in English. This difference is insignificant when it comes to the recognition of the value of fluency in English for professional career.

A majority of the people surveyed regard fluency in foreign languages as a key to professional success. Almost one third of them (28,6%) say that being able to speak a foreign language is necessary, for 42% such an ability is very important, for 21% it is somehow important, and only for less than 9% it is not important. However, 61% of the respondents assess their communication skills in foreign languages as insufficient. It is still a good result compared to the 10% positive response in the already mentioned Globalization of English 2010 survey.

When asked about the biggest challenges of communication in a foreign language they name insufficient knowledge of professional vocabulary, styles and formats of written communication, and insufficient business skills. 15% mentioned intercultural communicative competence as an important issue. The respondents were asked to self-assess their communication skills on a ten-point scale where 1 was the lowest and 10 the highest mark. The skills included: use of professional vocabulary, giving presentations, running meetings, negotiating, writing business documents, intercultural competence. 5 % decided that all their skills are on the highest level, while a vast majority chose the level between 5 and 6. Not even one person assessed their skills as lower than 3. There was no significant difference in the number of points allocated to different skills. This question shows that most of the people surveyed are aware of the limitations in their professional performance resulting from poor communication skills, see the need to improve them and declare willingness to do so.

The most effective way to improve communicative effectiveness is gaining practice and professional experience by performing workplace duties. The second best way according to the respondents, is attending a foreign language course. It needs to be pointed out that this option was chosen both by people who communicate in English in workplace environment and by those who do not use English for work.
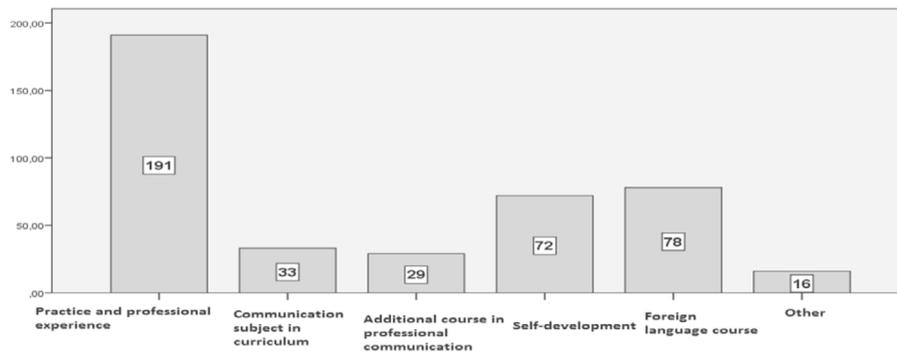
Figure 2: What helps develop communication skills? The respondents could choose more than one option.

As language courses have such an impact on developing professional communication skills, they should be tailored to best meet the communicative needs of those who attend them. One of the questions aimed at eliciting information on what, according to the respondents, English for Business Purposes (EBP) course should focus so that it can effectively improve learners' professional communication skills. They could choose any number of the options given, but were asked to order their preference.
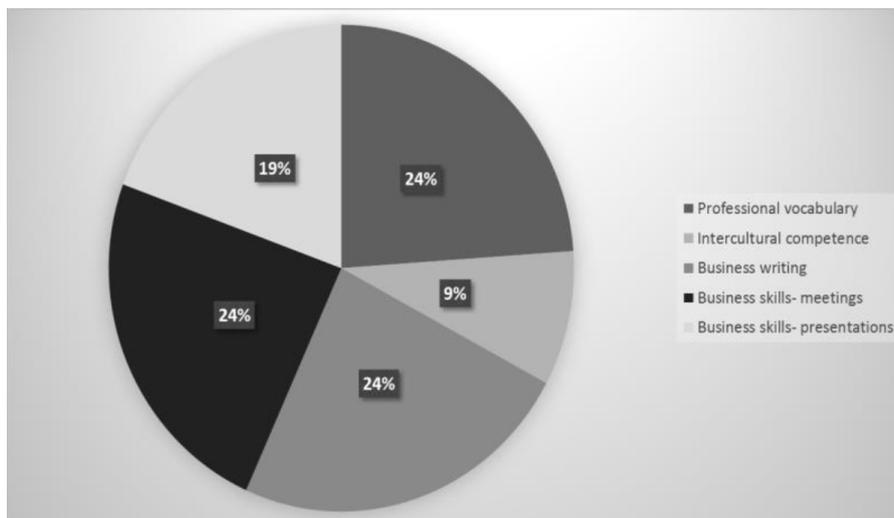
Figure 3: What would you like to learn a tan ESP course? The respondents could choose more than one option.

The results show their expectations are mainly expanding the range of professional vocabulary and developing business skills. The least popular choice was developing intercultural competence. Less than 10% indicated interest in gaining this skill.

5. Conclusions

Emphasizing the importance of linguistic skills allowing fluent and effective communication in a foreign language is not new in the history of business communication, but with ever-spreading globalization it gained a new dimension. Language and its usage can be one of the key barriers, particularly in intercultural communication. Effective use of language is difficult to learn. "Words are not passive vehicles into which ideas might be deposited" (Crow 1988: 94).

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Different communities have different ways of doing business. Different business communities have different client expectations. In monocultural ones it is easier to anticipate the reaction of the recipient to a particular speaker's words. In multicultural encounters the impressions the message sender believes his words create may not coincide with the impressions the interlocutors form of him. "However, effective intercultural communication can be learned" (Chick 1990: 255).

The analysis of the study results allows to draw a conclusion that the main concern of non-native users of English is to develop linguistic competence while failing to recognize the importance of the socio-pragmatic component of the communicative competence. The respondents of the survey who wish to improve their communication skills in English believe that knowledge of professional vocabulary together with business skills guarantee effective interactions in all business contexts. They do not realize that as Gerritsen and Nickerson (2009: 182) notice "the literature on lingua franca communication would suggest that BELF communication may fail for one of three reasons, which can occur singly or in combination: lack of comprehensibility, cultural differences and stereotyped associations". Effective communicators know how to demonstrate audience awareness. They carefully consider the arrangement of information e.g., format and structure of the message, the style, tone and level of formality appropriate for business conversation, and the word choice.

In their article "Written Communication Skills of International Business Person", Casady and Wasson (1994: 36) observed: "Companies understand that their success in international business activities hinges on developing cross-cultural appreciation and strengthening fundamental communication skills among their employees for national as well as international business activities". However, the road to effective business communication is still long, and will not get shorter unless users of English understand that developing cultural awareness and sensitivity – elements necessary for developing communicative competence - is not an extra skill but a key to successful global interactions.

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Translation technology for terminology in higher education

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Abstract. The Bologna process together with the EU enlargement brought new stimuli to the student mobility all over Europe. Even though it is generally accepted that English is used for communication as a lingua franca, in most cases the courses are delivered in the language of the host university. It is recommended for exchange students to provide a B1 language certificate, but this is not sufficient for understanding specialized vocabulary. For translating domain specific terms a student has to use either dedicated dictionaries (available only for limited domains and language pairs) or freely available machine translation (MT) systems. Current freely available MT-systems rely on large amounts of training data, thus the quality of the translation is highly dependent on the similarity between the input and the training material. The aim of this paper is twofold: to analyse the behaviour of three online available systems exposed to excerpts from curriculum descriptions and to present an approach for domain adaptation for open domain MT, discuss its improvements as well as its limitations. We focused our study on the German-English and German-Romanian language pairs. We perform both automatic evaluation and human evaluation and analyse the degree of correlation between them.

Keywords. Specialised texts, open domain machine translation, domain adaptation, terminology translation.

1. Introduction

The adoption of the Bologna treaty by most part of the universities within the enlarged European Union brought new impulses to the student mobility across all 27 countries. Even though it is generally accepted, that English is used as a lingua-franca for daily communication by most exchange students, in most cases the courses are delivered in the language of the host university (especially at the bachelor level). Exchange students are encouraged to provide a B1-level certificate for the language of the host university, however this is not enough for understanding specialized vocabulary. The preparation of the exchange (i.e. the choice of courses for the "Learning Agreement") is also difficult as students do not understand completely the course descriptions, requirements etc.

For universities the variety of languages spoken by the exchange students, as well as the dynamic character of the curriculum descriptions, is a real challenge. Given this setting (many language pairs, dynamic texts and specialised domains) human translation cannot be a solution. Specialised lexicons are rare and predominantly available from/into English, German or Spanish.

Recent developments in machine translation make this technology a possible solution for curriculum translation. However, current MT-technology strongly relies on large training material, thus using a translation system in an open domain setting (like university curricula) poses several challenges and eventually leads to the implementation of domain adaptation strategies.

It is frequently assumed that the quality of on-line translation engines is decreasing when used with specialised texts, but only few systematic analyses were done, especially with less-resourced language pairs (e.g. Romanian-German).

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In this paper we present the analysis of three on-line available systems, one of them being developed from scratch and thus giving the opportunity to embed domain-adapted translation models. We will use the term *out-of-domain* to refer to the general domain used for training the system (its source domain). The term *in-domain* is used to refer to the specific domain, the domain used for testing (target domain). In section 3 we introduce the three translation engines tested and discuss the domain adaptation strategy. Section 3 presents the results of the automatic and manual evaluation and section 4 is reserved for conclusions and further work.

2. Machine translation engines

We decided to use three on-line translation engines, two of them only available as web services and therefore working as black-boxes: Google Translate[1] and Bing[2]. Both systems are based on corpus-based machine-translation paradigms, but neither the training data nor the translation models and best-candidate selection strategies are known.

The third machine translation engine was developed within the EU funded project ATLAS[3] (Applied Technology for Language Enhanced CMS)

The ATLAS system basically is a generic framework for web content management, which makes use of state-of-the art text technologies for information extraction and to cluster documents according to a given hierarchy. A text summarization module and a machine translation engine as well as a cross-lingual semantic search engine are embedded.

The system for the moment is handling six languages (Bulgarian, English, German, Greek, Polish and Romanian) from four language families. However, the chosen framework allows additions of other languages at a later point of time.

The core online service of the ATLAS platform is "i-Publisher", a powerful web-based instrument for creating, running and managing content-driven web sites. It integrates the language-based technology to improve content navigation e.g. by interlinking documents based on extracted phrases, words and names, providing short summaries and suggested categorization concepts. Currently two different thematic content-driven web sites are being built on top of the ATLAS platform, "i-Librarian" and "EUDocLib", both using i-Publisher as content management layer. iLibrarian is a user-oriented web platform which allows users to maintain a personal workspace for storing, sharing and publishing various types of documents and have them automatically categorized into appropriate subject categories, summarized and annotated with important words, phrases and names, as well as translated. EUDocLib is a publicly accessible repository of EU legal documents from the EUR-LEX collection with enhanced navigation and multilingual access techniques.

A key component of the ATLAS system is the machine translation engine. Its development was particularly challenging as the system is open-domain and has to handle different text-genres. Additionally, the considered language-pairs belong to the so called *less resourced* group, for which bilingual training and test material is available only to a limited amount (Vertan 2012).

The machine translation engine is integrated in two distinct ways into the ATLAS platform:

○   for i-Publisher Services (generic platform for generating websites) the MT is serving as a translation aid for publishing multilingual content. Text is submitted to the translation engine and the result is subject to human post processing,

○   for i-Librarian and EuDocLib (web services for collecting documents) the MT-engine provides a translation for assimilation, which means that the user retrieving documents in different languages will use the engine in order to get a clue about the documents, and decide if he will store them. If the translation is considered as acceptable it will be stored into a database.

Being supposed to work in an open-domain setting the main challenge for the MT-engine is

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to handle specialised data. In contrast with other on-line sytems, the ATLAS-engine has the advantage of accessing linguistic processing chains integrated within the ATLAS content managemnt systems.

We decided to implement a user-proactive strategy as follows: each domain uploaded to the system is first assigned automatically to a node in a classification hierarchy. With the prototype ATLAS system we provided a hierachy following the Library of Congress Classification[4]. From this large classification we selected thirteen nodes to which we attached translation-information vector-labels. A translation-information vector-label has fifteen components (the number of translation pairs); each vector component corressponds to a langauge pair and informs if a specific trained model for that domain is available.

A general translation model was trained on the JRC-Acquis corpus[5]. The JRC-Acquis corpus (Steinberger et. al. 2006) is a multilingual parallel corpus for 22 European languages consisting of paragraph alignments for 231 pairs[6] of languages. The data is made up of a selection of european documents refered to as Acquis. This term identifies the body of common rights and obligations that bind all the member states from the European Union. The choice of using this corpus is motivated by the fact that it is the only free –available and size –relevant ressource available for all languages involved in the system.

The in-domain corpora were colected partially manually, partially were generated automatically using English as a pivot language. They are all small corpora having between two and five thousand sentence-pairs.

For the analysis in this paper we selected the domains Mathematics and Biology. The choice is motivated as follows:

○ Mathematics is a very technical domain completely different from the general JRC-Acquis corpus, both in syntax and lexical coverage

○ Biology is very different in terms of lexical coverage from the general domain

The language pairs selected for the experiments were German-Romanian and German-English.

2.1. ATLAS statistical machine translation component

The ATLAS translation engine uses a hybrid approach combining an example-based component with a statistical-based one. The example-based component is working only when parts of the input are retrieved identical in the translation database, otherwise the statistical component is working. Thus we will describe here in detail just the statistical component.

Based on the large out-of-domain corpus JRC-Acquis, a translation model is trained which gives the probability that a sequence of words in the target language is the translation of another sequence of words in the source language. The translation probability is computed as in (1):

$$(1) \quad P(t\,|\,s) = \frac{1}{Z} exp\left(\sum_{i=1}^{M} \lambda_i h_i(t,s) \right)$$

where t is a phrase in the target language, s is a phrase in the source language, Z is a normalization factor that ensures that the result is between 0 and 1, M is the number of features that the translation system has, λ_i is a corresponding weight for the feature function $h_i(t,s)$. A baseline translation system includes the following feature functions:

○ $P(t\,|\,s)$ and $P(s\,|\,t)$: the phrase probabilities in both directions

○ $P_i(t\,|\,s)$ and $P_i(s\,|\,t)$: the lexical probabilities in both directions which show how well individual word translates to each other

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○ *P(t)*: the language model which tells how likely a candidate translation is fluent in the target language

○ *d(s,t)*: the distortion model which reorders phrases

○ *W(t)*: word penalty which penalizes very long or short target sentences.

2.1.1. Domain adaptation strategy

Domain adaptation became a major research field in machine translation during the last years. Many heuristics were proposed, however they are highly dependent on the particular context for which they were developed. An attempt to classify domain adaptation strategies can be found in (Duma and Vertan, 2013). Based on this classification we can summarize a generic domain adaptation work-flow for SMT, as in Fig. 1. Here the focus is on the model approach. The training data consists of out-of-domain used to infer a SMT baseline model and in-domain data which is used together with the inferred model to adapt it. The testing data belongs to the same domain as the in-domain data.
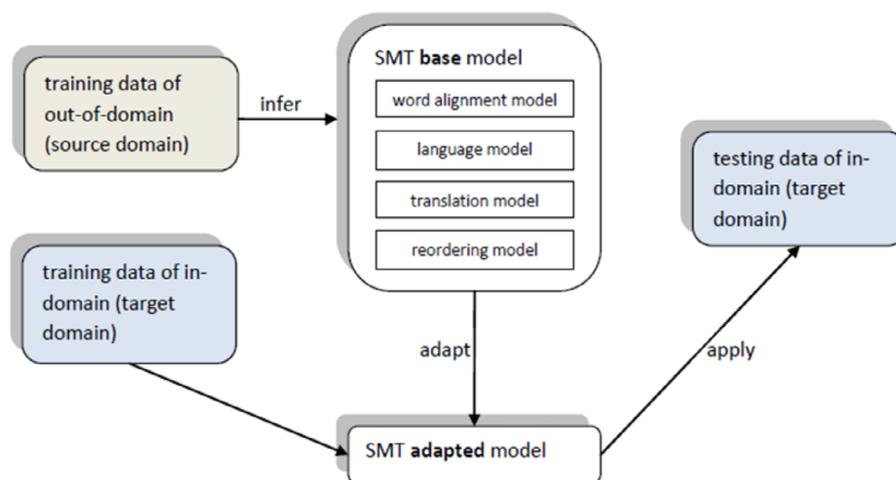
Figure 1: Domain adaptation setup for SMT (Duma and Vertan, 2013)

2.1.2. Selected state of the art method for domain adaptation

The baseline translation systems and the adapted systems incorporated into the ATLAS-engine were built with the Moses[7] framework.

We chose a domain adaptation method based on linear interpolation as in (Koehn and Schroeder, 2007). The translation probability is computed as in (2)

$$(2) \quad P(t|s) = w P_{in}(t|s) + (1-w) P_{out}(t|s)$$

where

○ $P(t|s)$ is the conditional probability of a phrase-pair,

○ $P_{in}(t|s)$ is the conditional probability of a phrase-pair corresponding to the in-domain and

○ $P_{out}(t|s)$ is the conditional probability of a phrase-pair corresponding to the out-of-domain.

○ w is the interpolation weight, $0 \leq w \leq 1$.

Using the SRILM language model toolkit[8] (Stolcke 2012), we compute in this order:

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- ○ the language model for the in-domain,

- ○ the language model for the out-domain,

- ○ and the weight

Consequently by means of (2) an interpolated language model is created.

3. Evaluation and analysis of the results

For the test set we used 100 sentences from each in-domain corpus. The automatic evaluation consisted of using the BLEU metric (Papineni et. al. 2002) as an evaluation metric. BLEU counts identical n-grams in MT-output and reference translation. For the manual analysis, we extracted terms and multi-word expressions specific to the in-domain and compared the translation from two online translation systems, Google and Bing and the machine translation engine of the ATLAS system.

3.1. Automatic evaluation

In Tab. 1, the BLEU scores are given for the baseline ATLAS-Engine (SMT without domain adaptation), for the adapted ATLAS-engine system, for Google and for Bing. At a first sight BLEU scores for Google and Bing are better than the other ones. These systems do produce always fluent output. It can be observed that the adapted systems gave a much better BLEU result than the baseline systems, indicating that the language model interpolation method is a good approach inducing an increase of the performance even with small in-domain available training data.

BIOLOGY		
	DE-EN	DE-RO
Baseline system	15.04	4.69
Adapted system	21.09	10.19
Google	54.16	28.81
Bing	23.23	19.45
MATHEMATICS		
	DE-EN	DE-RO
Baseline system	20.86	4.68
Adapted system	28.88	10.94
Google	56.97	36.87
Bing	43.76	26.73

Table 1: BLEU scores for Baseline and Domain Adapted ATLAS engine, Google and Bing for Mathematics and Biology

3.2. Manual analysis

For the manual analysis we selected manually from the 100 sentences of the test sets terminological expressions characteristic to the Mathematics domain, and observed their translation by the three systems. This comparison is presented in Tab. 2 where "oov" means "out of vocabulary words".

At a first glance we observe the relative high number of out of vocabulary words among the output presented by the ATLAS -engine. This is due to the small in-domain training data for the given language pair. We observe however a quite high number of terminological expressions which are translated at least as good as Google and Bing by the ATLAS adapted system. Overall the adapted system does not present cases of wrong semantic translation, which leads to the idea that with a larger in-domain training data it could overpass the quality of the other on-line translation engines.

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Word or construction	Reference	Adapted System ATLAS	Google Translate	Bing
Logischen Schließens	a deduce logic	oov	deductie logica	deducerea logică
Idealisierte Denkmodelle	modele idealizate ale gândirii	oov	cu modele idealizate de gândire	cu modele idealizat
Zeichenketten	şiruri de caractere	oov	siruri de caractere	siruri de caractere
ideale Gedankenkonstruktionen	rationamente abstracte	ideal + oov	gânduri în domeniul construcţiilor ideale	constructii ideală de gânduri
innermathematischen	intra-matematice	oov	intra-matematice	intra-mathematical
Seitenlänge	lungimea laturii	**lungimea laturii**	lungimea partea sa	partea lui
geometrische Figur in der Ebene	figură geometrică în plan	*geometrische figur* în de plan	formei geometrice în plan	un poligon în planul
Strecken	linii	distante	linii	linii
Ebene	nivelul	**nivel**	nivelul	nivel
Quadratdiagonalen	diagonalelor patrati	oov	diagonalelor pătrat	de pătrat diagonala
Quadratwurzel	rădăcina pătrată	**rădăcina pătrată**	rădăcina pătrată	rădăcina pătrată + piaţa rădăcini
Satz von Pythagoras	teorema lui Pitagora	coeficientul de Pythagoras	teorema lui Pitagora	teorema lui Pitagora
Längen	lungimi	oov	lungimi	lungimi
Winkeln	unghiuri	**unghiuri**	unghiuri	unghiuri
Abstäde	distanţe	**distante**	distanţe	distanţe
Dreiecke	triunghiuri	oov	triunghiuri	triunghiuri
Quadrate	pătrate	**pătrate**	pătrate	pătrate
Kreise	cercuri	**cercuri**	cercuri	cercuri
Gleichungen	ecuaţii	**ecuaţii**	ecuaţii	ecuaţii
Funktionen	funcţii	funcţii	funcţii	funcţii
Differenzieren	diferenţiere	**diferentiere**	diferenţiere	diferenţiere
Integrieren	integrare	**integrare**	integrare	integrare
Schnittpunkt	Intersecţia	**intersectia**	Intersecţia	Intersecţia
Geraden	linii	**linie**	linii	linii
aufeinander normal stehende Geraden	în mod normal, legate unele de altele ca linie dreaptă		ca de obicei unul de altul în picioare drept	ca reciproc în picioare drepte normale
Dezimalldarstellung	zecimale	**reprezentare zecimal**	zecimale	reprezentarea zecimală
Dezimallstellen	cifre zecimale	mult mai zecimale	cifrele mai zecimale	mai multe zecimale
Trigonometrisches Problem	problemă trigonometrice	oov	problemă trigonometrice	problemă trigonometrice
Trigonometrie	trigonometrie	**trigonometrie**	trigonometrie	trigonometrie
geradlinig	drept	oov	drept	drept

Table 2: Comparative translations for mathematical terminology translation engines

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4. Conclusions and future work

In this paper we presented an experiment of using online machine translation systems for translating specialised texts as in curriculum description in higher education. The main reason behind this experiment was to asses to which extent such systems can be used for assisting exchange students in their studies. We conclude that linear interpolation used for domain adaptation for statistical systems following the Moses framework, might out or equally performs third-party on-line systems, assuming that enough in-domain training data is available. Otherwise the out of vocabulary words may decrease the performance of the system.

Another advantage of having the own adapted SMT-system is the complete control on the translation system: one can observe the lacks in language coverage, increase the training data, retrain the model, and eventually involve external linguistic sources. This is not possible with black-box solutions as the other two engines tested in our experiment.

Further work consists in extending the analysis on other domains, retrain the models with larger data as well as investigating other methods for domain adaptation.

5. Notes

[1] http://translate.google.com/

[2] http://www.bing.com/

[3] http://www.atlasproject.eu

[4] http://www.loc.gov/catdir/cpso/lcco/

[5] http://optima.jrc.it/Acquis/index_2.2.html

[6] http://langtech.jrc.ec.europa.eu/Documents/070622_Poster_JRC-Acquis.pdf

[7] http://www.statmt.org/moses/

[8] http://www.speech.sri.com/projects/srilm/

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Decoding technical codes in professional translation

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Abstract. In translator training courses, students are often found incompetent when handling technical translation, especially those with little knowledge in science and technology. So are novice translators in the translation industry. This invites scholars to investigate the phenomenon and find feasible explanations, and better still, propose some practical suggestions for translator training and ESP teaching programmes. In this paper, I suggest that each message in the source text consists of at least three basic codes, which are related to language, culture and knowledge separately. The decoding process of knowledge codes in technical translation, in particular, often involves skills related to proficiency in reading comprehension of ESP texts. I will demonstrate how experienced professional translators are able to tackle various problems in technical texts to solve the terminology problem in the target language. Furthermore, a good knowledge in specialized subject domains contributes significantly to the success of a technical translation. So do inspirations from linguistic and nonverbal considerations. To support my argument, I will use two case studies concerning terminology problems observed in my past technical translation job and current translation class and show how the problems can be solved with decision-making strategies specific to processing technical texts.

Keywords. Decoding process, ESP, linguistic knowledge, nonverbal clues, technical translation, terminology.

1. Introduction

In our daily life, communication between speakers of different language and cultural communities can be found happening more and more frequently around us with the rapid development of globalization (Ho 2008). When a person with certain knowledge of a foreign language is available, the communication with foreigners becomes easier. However, for sophisticated communication between different language users, translators and interpreters are needed for the success of cross-linguistic/cultural communication. When foreign language communication involves specialized knowledge in a specific subject domain, such as business, technology, law and so on, professional interpreters and translators are in demand to ensure the quality of communication for professionals to exchange information. In a word, foreign language communication takes place around us so frequently today that it demands further investigations into its nature and establish theories to explain its mechanism (cf. Byrne 2006: 22). The following hypothesis is my tentative attempt.

2. A hypothesis of composition of codes in foreign language communication

In the situation where language contact happens, any communication between speakers of different language and cultural communities can be understood as a process of codes switching, during which codes contained in the message in the source language (SL) are decoded, analysed and undergo a recoding process in the target language (TL) before the message is received and perceived by the TL listener(s) or reader(s).

Of the codes that are decoded in the SL and recoded in the TL, three main components can be found that play crucial roles in foreign language communication: linguistic, cultural and knowledge codes, illustrated as below:
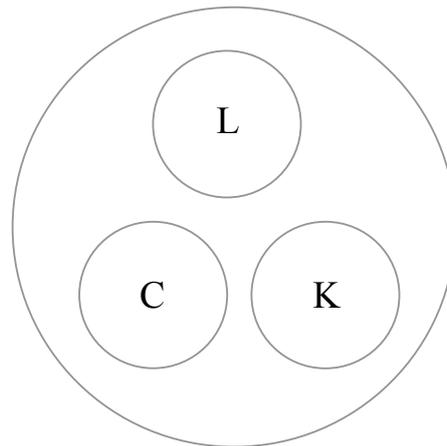
Figure 1: The composition of codes in foreign language communication

Here "L" stands for Language, "C" for Culture, and "K" for Knowledge.

A source message normally contains at least three types of codes related to information about language, culture and knowledge individually. Only through correct interpretation of these codes, namely through decoding the message appropriately in the target language, will the message in the SL be comprehended adequately. During the code-switching process from the SL to the TL, the translator or interpreter need to command good verbalizing skills to process them in a dynamic way to ensure the success of communication between the SL and TL (cf. Nida 1964: 159; Nida and Taber 1982: 12, 22, 24). Otherwise, barriers to the communication will be built up and lead to the failure or problems of foreign language communication.

Of these three types of codes, the linguistic one is essential, because it is the carrier of our thought. Without it, ideas will fail to be expressed and perceived. The cultural code plays a crucial role in understanding the disparity between different cultures in the way of thinking, life style, conventions, and customs and traditions. The knowledge code helps the communication run smoothly on the common ground of various aspects of our understanding of the world.

During the process of decoding a message in the SL (English in our discussion), a translator needs to understand the source text (ST) fully. As the basic meanings of the message are interpreted through syntactic, semantic, cognitive and pragmatic analyses, as well as analyses in some other related fields (e.g., sociology, psychology, and semiotics), the translator's excellent command of the SL is a prerequisite for the job. When the source message contains culture-specific information, the translator is to go through the process of cultural interpretation so that the cultural implications in the source message will not get lost during the decoding process and are able to be switched to its equivalent codes, fully or partially, in the TL. As thought is construed in the framework of knowledge and interfaces with experience, the message expressed in the SL is always associated with various topics based on knowledge and experience (see Gommlich 1993: 175, 177; Shreve 1993: 185). If the message consists of information that can be understood by the general public, such as love, birth, natural phenomena, social life, and so on, the knowledge codes embedded in the message will be relatively simple. However, when the topic concerns something specific to a certain subject domain, such as business, technology, medicine, law, and architecture, etc., comprehending the message will become a big challenge even for laymen of the native speech community, let alone non-native language readers/listeners. When translation of the ST into the target text (TT) is required, the translator must be equipped with certain specific knowledge related to the subject domain, including jargon, terminology, abbreviations, acronyms and concepts popularly understood in that specific profession (cf. Byrne 2006: 85-86; Finlay 1971:7-8, 14, 89-92; Wilss 1996: 58, 60-62; cf. also Danks and Griffin 1997: 168; Goldman and Rakestraw 2000: 311; Teague 1993: 162; Risku, Dickinson and Pircher 2010: 89, 93). Without such knowledge, the message exchange will be doomed to fail.

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As the importance of linguistic and cultural communication has been discussed extensively in the literature already, the role of knowledge codes in foreign language communication will be examined in this paper. Attention will also be given to the decoding process of technical codes. While the process of foreign language communication in general involves three major stages, i.e., decoding, code-switching and recoding, the decoding process, especially that of technical codes, in professional translation will be scrutinized in the discussion to follow. It is hoped that a study concentrated on this topic will provide some insight into professional translator training, as well as ESP teaching and learning, particularly that related to the aspect of reading comprehension of texts in English for Science and Technology (EST).

3. Reading competence in ESP and decoding process in translation

ESP proficiency, especially in reading comprehension, plays a very important role in translation from English into other languages (Byrne 2006: 107). Without a good reading competence, a translator will misunderstand and consequently misinterpret the message in the SL. As a result, the output of the recoding processes in the TL will pass a wrong message on to the reader. In general translation, the consequence of mistranslating a text may merely cause distortion of the original message; in translation of texts for specific purposes, such as commerce, technology, law and medicine, the translator's negligence or mistake will lead to a terrible disaster in business expansion, technical applications, legal trials or medical treatments (cf. ibid: 19-20). In this sense, then, accurate interpretation of the original message is decided by the translator's reading competence in ESP.

To fully understand the meaning of the original message, the translator should be aware of some typical linguistic devices employed in ESP writing.

In comparison with writing materials for general purposes, such as news reports, feature stories, literature, classics, and so on, authors tend to use passives and complex nominal structures in ESP texts more frequently, especially those related to a subject domain of EST (Kennedy and Bolitho 1984: 6, 19; Byrne 2006: 91). The vocabulary also consists of words based on Greek and Latin roots with "scientific" prefixes or suffixes (Kennedy and Bolitho 1984: 19, 58). More often than not, a word in EST often changes its normal meaning (ibid: 19). In addition, abbreviations and acronyms can be found extensively in technical texts, plus a large number of symbols and formulae, as well as illustrations and charts (ibid: 56-58). The greatest challenge for a technical translator, however, is how to deal with neologisms and coinages (ibid: 58), because the term is so new that no one in the target speech community has yet encountered it before, let alone translate it into the TL (cf. Finlay 1971: 56).

It is obvious that the above-mentioned linguistic and semiotic devices typically used in EST demands special skills and strategies to help solve decoding problems when translators are translating highly technical texts into the TL. In the following discussion, I will propose a few tentative solutions to deal with the decoding problems that professional translators often encounter. Hopefully, these skills and strategies may also apply to the learning process in ESP, especially that in EST.

4. Skills and strategies for decoding technical codes in professional translation

In practising technical translation, translators tend to deploy some specific skills and strategies for decoding technical codes (cf. Shreve 1993: 186). These skills and strategies have largely derived from the translator's previous learning experience from his/her education at school, especially during the learning process in reading comprehension. However, they may also be generated from the translator's autonomous learning process trigged by his or her personal interests and judgement of importance (Alexander and Jetton 2000: 291, 295).

Generally speaking, translators will not find it too difficult to deal with general grammatical structures when analysing EST texts, such as the passive voice and complex nominal structures, as long as they had robust training in English grammar at school.

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In the real world of technical translation, however, there are far more complicated and challenging situations where translators have to deal with problems caused by a large number of technical terms. Worse still, the size of technical vocabulary simply keeps snowballing with the rapid development of modern science and technology. As a result, technical terms, neologism, coinages, acronyms and abbreviations become greater and greater challenges for technical translators. At first sight, these problems might be successfully solved as long as the translator has a good knowledge of semantics, because they are largely about the meaning of words. In reality, however, they are far beyond the linguistic knowledge that is taught at school, because many technical texts are written by professionals for a specific reader group, e.g., technicians, engineers, or other professionals. Such "authentic" texts are used specifically for professional communication of subject content rather than communication between laymen for verbal exchange of general ideas (cf. Hutchinson and Waters 1987: 48). When these texts need to be translated into a foreign language, more challenging situation will emerge. There will be not only problems caused by new terms but difficulties introduced by new concepts in the subject domain (Finlay 1971: 56; Kennedy and Bolitho 1984: 48). In other words, if these technical terms and concepts were old, there would hardly be any need to translate them into those in another language. In this sense, then, technical translators have to confront a situation of self-learning during the process of translation. That is to say, the translator has to learn something well beyond language itself. S/he has to understand the basic workings of the subject domain concerned before starting the translation process (Finlay 1971: 89), because technical translation involves a process of verbal communication between professionals of different languages and cultures.

The success of verbal communication between people from different language and cultural backgrounds depends totally on the translator's intelligence and knowledge of both general and professional communication. In other words, linguistic and cultural knowledge is essential, yet inadequate when dealing with technical communication between two different languages. Furthermore, when decoding technical codes during translation, a translator often relies on a variety of skills and strategies to comprehend these highly technical texts. The skills and strategies that the translator often deploys include those for information-retrieving, and problem-solving and decision-making.

4.1. Information-retrieving

We are now living in an era characteristic of knowledge explosion and information expansion, which has become outrageous and out of control (Alexander and Jetton 2000: 286). This is particularly so in science and technology, especially in information technology (IT) and biochemistry. To transfer advanced knowledge in science and technology to other countries that desperately need it, the most effective channel is through technical translation. Although in many Western countries, professionals with high proficiency in other languages may have no problem to read technical texts in a foreign language; for many professionals in a country that use a totally different language and has a highly heterogeneous culture, such as China, Japan, Egypt, Brazil and Russia, technical translation is a must for communication between professionals across language and cultural barriers. In the vast ocean of new information and knowledge, translators need to use specific skills and strategies to search and retrieve information and knowledge specialized in the subject domain that the EST texts are involved in (cf. Finlay 1971: 56; Park 1993: 103).

The traditional and fundamental ones are library or reference skills (Finlay 1971: 136-146; Kennedy and Bolitho 1984: 71; Hann 1992: 7). An experienced translator always has a clear idea where to find the most needed information and the most useful dictionaries and encyclopaedias and other reference books in a library. They can immediately pick up the best possible dictionaries within minutes and find the right technical terms very quickly. In comparison, trainee translation students or EST students tend to rely on online search engines and dictionaries, and machine translation (MT) software to deal with new terms. They do not understand that the translated

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terms may be provided by amateur translators or MT software, which may contain unreliable lexical meanings of the term. In a society filled with modern technology, paper dictionaries, especially those ones specialized in science and technology with many volumes, have their unique role for professional translators, as well as for EST or translation students. In other words, paper dictionaries are still our indispensable tools and trustworthy friends.

However, in comparison with many online dictionaries and information where a translation can be found within seconds, paper dictionaries are often quickly out-of-dated and new words or definitions will not be so easily found (cf. Park 1993: 101, 106). Therefore, a good command of skills for online searching for useful information is a prerequisite for any technical translators and students (cf. Byrne 2006: 6). In this respect, young students often outsmart their teachers. They may take full advantage of online searching skills to find information they want within seconds. The only advice that a teacher needs to provide them with is: "Watch out for *faux amis*" (cf. Hann 1992: 21; see also Finlay 1971: 112-113).

4.2. Problem-solving and decision-making

The process of technical translation often involves a translator's problem-solving and decision-making skills, which decide its quality. In many cases, such a process is not a smooth one, especially in technical translation, where codes to be interpreted pose daunting challenges to the translator's proficiency in languages, knowledge in both cultures, comprehension of the technical terms involved, ability to conceptualize the mechanism of the technical project and competence in decoding and encoding the texts in a professional way.

The most common problems a technical translator will encounter include: 1.) a word with a reference specific to that text of EST (cf. Hann 1992: 21, 223-224); 2.) acronyms and abbreviations (cf. Finlay 1971: 122-123; Kennedy and Bolitho 1984: 56, 58) and 3.) newly-minted technical terms (cf. Byrne 2006: 86). Some examples will be given later in this paper. At this moment, I would like to briefly introduce some strategies commonly used in technical translation.

During the process of technical translation, trainee and novice translators tend to pick up any definition of a word (normally the one with general reference) from a bilingual dictionary and use it as the translation for a technical term used in EST. They often find it difficult to identify a specific definition in EST, owing to their lack of background knowledge about the subject domain concerned. For example, if the translator has never been interested in computer technology, it will become a great hassle for him or her to translate a text involving terminology for computer hardware or software. Terms such as "chip", "display", "motherboard", "interface", "modem", "bit", byte", "terminal", "server", "compilation", "configuration", "restore", "script", and "Java", as well as acronyms such as "RAM", "ROM", "CPU", "GB", "bps", "HTML", "ADSL", "Wi-Fi", and "ISDN", probably mean nothing when s/he is reading them (see also Finlay 1971: 122).

To solve the problem, a trainee or novice translator is advised to read extensively to accumulate a variety of background knowledge at spare time (cf. also Niedzielski and Chernovaty 1993: 125; Risku, Dickinson and Pircher 2010: 90). Such a process must be autonomous. In other words, the knowledge expansion process cannot be carried out totally through school education system. Moreover, a translator specialized in technical translation needs to learn not only individual terms alone; rather, the translator must read articles and books dedicated to the subject domain concerned so that s/he is able to conceptualize the fundamental ideas and principles behind the mechanism upon which the technology is established (cf. Byrne 2006: 5). Only in this way, can the translator be confident when decoding technical codes in EST texts, because the "reciprocal connections come about as a result of increasingly complex experiences with objects and events and the language associated with them" and are thus able to "evoke other language in ways similar to the spreading activation theorized in semantic-network models" (Sadoski and Paivio 1994: 586).

Very often novice translators tend to feel panic if they fail to determine the definition of a term

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in an EST text, although they know its meaning in general English perfectly. However, they will become more confident next time if they know the way how to solve such a problem. The commonly employed devices in technical translation include 1.) globally searching the occurrences of the term in the whole text so that comprehension of the term can be achieved by inferring its meaning form the context (cf. Byrne 2006: 139-140) and 2.) taking advantage of some nonverbal facilities available in the EST text, such as illustrations, charts and some other graphics that help the reader (*viz.*, "the translator" in our discussion) conceive the concepts related to the term (cf. Byrne 2006: 76, 131).

Some ESP scholars suggest that words should not be comprehended in isolation; rather, they must be understood in a global environment, such as the context, their relationship with other words, and the collocation they are frequently associated with (cf. Kennedy and Bolitho 1984: 62-66). Moreover, as "many word meanings are learned through implicit or contextual reference (inferring the meaning from cues in the verbal contexts in which the word is encountered)" (Daneman 1996: 525; cf. also Spiro and Myers 2002: 488; Byrne 2006: 139-140), it is important for technical translators to infer implicit meanings of unknown technical terms from the context they occur to solve the terminology problem (cf. Byrne 2006: 139-140; cf. also Risku, Dickinson and Pircher 2010: 85, 87, 90). Such strategies also apply to the reading comprehension process of EST texts.

Apart from the verbal problem-solving strategies, experienced translators also resort to nonverbal measures to solve the terminology problem when decoding technical codes that they have little or no knowledge about (cf. Byrne 2006: 5).

In their joint study on reading comprehension, Sadoski and Paivio propose a dual coding theory for reading comprehension. According to this theory, human experiences can be represented by verbal and nonverbal systems (Sadoski and Paivio 1994: 584-586). When verbal and nonverbal stimuli are detected in the environment by our senses, their corresponding mental representations will be activated in the verbal and nonverbal systems in our brain, during which, referential connections will take place between the verbal and nonverbal systems in addition to the associative reactions inside each system, followed by verbal and nonverbal responses (ibid). The nonverbal system can also be called the imagery system, which processes visual and auditory and some other information (ibid).

The significance of this theory lies in its revelation of the contribution of nonverbal, especially graphic, mental representations, known as "imagens" (ibid: 584), to our reading comprehension of highly abstract texts, especially EST texts. In other words, reading comprehension of highly technical texts will become easier when illustrations, charts, and other graphics are available (Kennedy and Bolitho 1984: 73; cf. also Hegarty, Carpenter and Just 1996; Byrne 2006: 76). This is how experienced translators solve the reading comprehension problems from time to time with the help of nonverbal interpretations from the accompanying graphics available in the EST texts. A case study later will provide its empirical evidence.

In decoding technical acronyms and abbreviations, translators often have to halt the translation process to identify the complete words of the acronyms or abbreviations so as to ensure a full understanding of the term in the EST text. Such problems often occur when the EST text is written by a technical writer who takes it for granted the comprehension of professional jargon, including technical acronyms and abbreviations, when rendering a text for professionals in EST without realizing that translators need the complete set of words of these acronyms and abbreviations before starting translation (cf. Finlay 1971: 88-90; Bryne 2006: 11-12). The solutions for the problem include:

1. find the acronyms and abbreviations in a dictionary, especially in a dictionary dedicated to abbreviations and acronyms, such as *A New English-Chinese Abbreviations Dictionary* (Shi 1995);

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2. search them from various online dictionaries of acronyms and abbreviations, for example, http://acronyms.thefreedictionary.com/ and http://www.acronymfinder.com/;

3. ask for help from other professional translators or technical writers through dedicated newsgroups or other online resources (cf. Finlay 1971: 60-65, 146-149; Risku, Dickinson and Pircher 2010: 89-90);

4. contact the translation agent for clarifications; or,

5. if possible, contact the technical writer directly for the complete words of the acronyms or abbreviations. If all the above measures fail, the translator may employ the strategy of guessing to figure out their possible component words (see Byrne 2006: 5; cf. also Kennedy and Bolitho 1984: 58, 65).

In dealing with newly-minted technical terms, some knowledge about lexicology, especially about word-formation, often plays a crucial role (cf. Kennedy and Bolitho 1984: 58-59; cf. also Adams 1973). If the translator knows how a large number of words, particularly those in chemistry, medicine and biochemistry, are formed, they can solve a lot of terminology problems by segmenting the term into the root, prefix and suffix derived from Latin and Greek to identify the basic meaning of each segment and figure out an integral meaning of the term and generate a newly-minted equivalent in the TL for the neologisms and coinages in the EST text (cf. also Fischbach 1993:94).

Should the problem still exist, leave the acronyms or abbreviations in a pair of brackets and put a tentative translation before them. That is what professional translators do as a last attempt to solve the terminology problem in technical translation.

4.3. Case studies

The following two case studies illustrate how linguistic knowledge and nonverbal clues help translators solve terminology problems in professional translation.

4.3.1. Case One: Word-formation knowledge for decoding a technical term

In the late 1990s, I received an assignment for translating a brochure for safety directions for the use of powder coatings. In the original text, there was a chemical called "triglycidylisocyanurate", which is an ingredient in powder coatings used in the metal finishing industry. As the chemical was newly invented at that time, there was no Chinese translation available. So I had to solve the terminology problem by deploying my word-formation knowledge. I segmented the long word into the root, prefixes and suffix and interpreted each with its possible Latin or Greek lexical meaning:

Root – *isocyanur(e)*: isocyanuric acid

Prefixes –

     - *tri*: three

     - *glycidyl*: *epoxy*

Suffix –

     - *ate*: salt or ester of an acid

Finally I provided a tentative translation based on the interpretations above for the user of the brochure to have a basic idea what this new chemical is roughly about.

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4.3.2. Case Two: Inference from nonverbal information for decoding a technical term

In the following technical text of a brochure about a baggage handling system used for airports, the term "cam bladed device" is rather implicit:

This cam bladed device transfers baggage from one line to another, or to a sorting destination, at a rate of 60 bags per minute, whilst maintaining the gentlest treatment of baggage through the unique constant velocity curved shape.

When one of my students were asked to translate the paragraph, she interpreted "bladed" as "a blade used in a razor" even though she had realized it did not make sense in the context. Male students were not sure, either. When I showed the following scanned picture, they had a much better understanding of the term "cam bladed device".

Figure 2: Illustration of a part of a baggage handling system used for airports

It is clear that the skill to take advantage of the nonverbal (in this case, the imagery) information and associate it with the verbal term does help EST readers and technical translators solve reading comprehension problems.

Due to space limitations, I am unable to provide more examples that show how technical translators often manage to solve problems with the strategy of contextual inference to decode a technical term or the guessing technique to decode an acronym.

5. Teaching technical translation with ESP reading skills as a backbone

With the rapid development of globalization, professional translators are in high demand; yet the outcome of training programmes for professional translation is far from being desirable (Ho 2008). At present, few universities in the world are able to offer a technical translation programme based on the real environment of technical translation (cf. Finlay 1971: 169-174). A similar situation also happens in EST teaching. As Hutchinson and Waters point out, the trouble that most teachers have encountered is the difficulty to cope with "subject matter beyond the bounds of their previous experience. Teachers who have been trained for General English teaching or for the teaching of Literature may suddenly find themselves having to teach with texts whose content they know little or nothing about" (Hutchinson and Waters 1987: 160-161). Such a bottleneck is mainly caused by teacher's unfamiliarity with "specialist knowledge and language" (ibid). There are several reasons behind this: 1.) English teachers "often receive little or no education in the Sciences" (ibid: 162); 2.) they are reluctant to be involved in teaching English language used in the highly technical or professional fields; and 3.) it is unreasonable to expect ESP teachers to know as much as possible in a wide range of subject domains, which are well beyond their knowledge realm (Kennedy and Bolitho 1984: 6, 51, 121; Hutchinson and Waters 1987: 162-163; cf. also Niedzielski and Chernovaty 1993: 125; Alexander and Jetton 2000: 293; but see Finlay 1971: 29, 37).

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It is therefore urgent and compulsory to find some solutions to solve the bottleneck problem of demand and supply in the job market for competent language experts specialized in technical communication across language barriers. In other words, the old paradigm for English Language Teaching (ELT) must be shifted to a new one that promotes researches and develops new programmes to accommodate the new environment changes in the global age (cf. Hutchinson and Waters 1987). But how?

Of course it is impossible for ELT teachers or general translation teachers to cross the boundary between the Humanities and the Sciences overnight. However, improvements can be achieved if language and translation teachers are willing to be adapted to the changing environment. The initial step is the change of attitudes (Hutchinson and Waters 1987: 163). This means teachers may try to be friendly with knowledge related to business, law, medicine, science and technology. They may also start reading certain popular science magazines rather than picking up books only related to romantic stories, poetry, arts and so on. In this way their knowledge domains can be expanded and their interests increased. Based on the new development in the background knowledge, they can be more confident when teaching ESP courses or technical translation texts.

As Hutchinson and Waters suggest "ESP must be seen as an *approach* not as a *product*" and "it is an approach to language learning, which is based on learner need" (1987: 19, italics in original; see also ibid: 2, 16). This means the design and application of a proper ESP programme should be learner-centred rather than contents-focused. The same applies to professional translator training programmes, in which the students play the key role in the classroom while teachers only provide advice to help them exert their own initiatives to solve the problems related to the technical texts (cf. Kiraly 1995, 2003; Johnson 2003).

Another problem is that the texts selected for ESP learning are often limited to those found in popular science books or introductory textbooks. More often than not, the reading materials are out-of-dated and contain merely general contents. Even these simplified and adapted texts may have challenged ESP students, as well as ESP teachers a great deal (cf. Hutchinson and Waters 1987: 160-162). In technical translation classes, such a challenge can become more severe, because the texts used in technical translation teaching and learning must be similar to those that technical translators may encounter in the real world of the profession and industry of translation. Those adapted and simplified from popular science books and introductory textbooks in EST simply do no good to trainee translators, because they will not facilitate their problem solving and decision-making skills and strategies (cf. Robinson 1991: 20, 56; cf. also Kennedy and Bolitho 1984: 48). In a learner-centred translator training environment, all that counts is how to help translation students to accumulate the procedural knowledge under the supervision of the teacher and experts from the translation industry (cf. Kiraly 1995, 2003; Johnson 2003; Alexander and Jetton 2000: 295; Kennedy and Bolitho 1984: 51). The same is also true for EST teaching and learning.

6. Conclusion

Translation, by nature, is a process of conveying a message written by a source language writer to its target languages reader(s). Its ultimate goal is to facilitate the communication task between the sender and the receiver of the message cross-linguistically and cross-culturally in various subject domains. Thus, the process of translation goes well beyond text transfer and cultural adaptation (cf. also Byrne 2006: 19). It should be extended to include a process of knowledge transfer in various subject domains. Accordingly, the goal of translation services is to establish a communicative channel between the sender and the receiver of the message who need translators' help to communicate with each other effectively.

When the subject matter in the message to be translated or interpreted concerns professional knowledge, such as business, technology, science, medicine, law, etc., which is exclusive to a small number of professionals, a good understanding of technical jargon, abbreviations and

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acronyms, as well as of the basic theory and principles of the profession or discipline concerned, is a prerequisite for any successful professional translation or interpreting services, as well as for those dealing with foreign language communications. In other words, the translator or interpreter's knowledge of the specialized topic in a certain profession or discipline decides the success or failure of the communication between the message sender and receiver across language and cultural barriers. For this reason, translation studies must take into serious consideration the study of the impact of specialized knowledge in professional domains on the quality of translation, particularly on that of professional translation. So should ESP research and teaching.

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The prediction role of subject knowledge and translation ability toward technical translation done by BA students of translation studies

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Abstract. Saving the Coherence of technical translation was always a challenge for the students of translation studies. They need Translation Ability and Subject Knowledge as prerequisites to save the Coherence. This article was conducted to investigate whether Subject knowledge and Translation Ability can significantly predict the Coherence in technical translation done by the BA students or not. To fulfill the purpose of the study, 51 BA students were selected based on their performances on TOEFL. Then, they were given General Translation, to test their Translation ability, Economic Translation to test how they save Coherence and Banking Information test to assess their Subject knowledge. After that, Multiple Moderating regression analysis was performed to analyze the data. The results indicated a significant relationship between Translation Ability, Subject knowledge and Coherence in technical translation done by the BA students. Moreover, the results also demonstrated that Coherence can be significantly predicted by Translation Ability and Subject knowledge. Besides, the scores of Coherence may also predict the Translation Ability. The significance of this study lies in the fact that unlike many previous studies, it was conducted on the prerequisite of saving the Coherence in technical translation by Translation Ability and Subject knowledge of the Translator.

Keywords. Coherence, subject knowledge, technical translation, translation ability.

1. Introduction

Nowadays technical text is one of those texts that play an important role in human life, because these texts help readers solve problems! Markel (2003) says that "technical communication is not meant to express a writer's creativity or to entertain readers; it is intended to help readers learn or do something"(p: 8).

Furthermore, many non-technical documents are aimed at a particular audience, but technical documents are more specific as regards the audience they are aimed at than most documents (Byrne, 2006:47). It means that the specific group of people refers to these texts in order to be familiar with a subject and improve their knowledge in that domain. Technical texts have also different kinds and characteristics as Byrne (2006:50-96) explains them in his book" *Technical Translation, Usability Strategies for Translating Technical Documentations*". He states that:

> Technical writers produce a wide range of documentation in an enormous variety of subject areas and industries. From gardening equipment and toys for children to aircraft maintenance manuals, tutorials for word processors as well as ice cream makers and nuclear submarines. The actual types of documents produced can vary according to the subject, the nature of the product and the industry within which the company operates. (p.50)

An increasing number of companies are using English as a working language so these technical texts should be transferred between these companies with different languages (Pinchuck, 1977). White (1996) concentrates solely on the need for linguistic compatibility of documents for different audiences and emphasizes certain cultural differences. He maintains that the way in which information is conveyed can vary quite significantly from culture to culture so translation

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can help the readers and technical text's users to understand these texts and solve their problems and improve their knowledge.

According to Kingscott (2002) it has been estimated that technical translation accounts for some 90% of the world's total translation output each year. Technical translation like technical text has different kinds, "It is commonly assumed that technical translation includes not only the translation of text in medicine and engineering but also such disciplines as economic, psychology, sociology, geography and law texts" (Javier 2004:92). One kind of technical texts as Javier (2004) mentions is economic text which is practical and consists of financial, banking and etc. (Stolez 2003: 188), also defines that "economic text is not just a "source text", it has to be conceived as a text from the word of economics".

Considering the above-mentioned characteristics of technical translation specially economic translation, in this study the researcher focused on this kind of translation. Then, the researcher will explain one of the most important factors in translated technical texts, coherence, which plays a vital role in understanding these texts. In other words, the two variables, translation ability and subject knowledge which coherence affected by will be explained and analyzed.

Technical translation like any other translation needs some prerequisites in order to be a good translation and usable for the readers; Wright and Wright (1993) claim that the translation of these texts requires: (a) a firm knowledge of the source and target language, (b) an informed layman's understanding of the subject field and (c) the writing skills needed to write on the discipline like an expert. Moreover, Robinson (2003) mentions that technical translators are like the actors and they should get to the characters. The reality is that, they should be armed with a good and solid understanding of the basic principles of translation. They should have translation ability, the ability which helps him or her in order to translate it into the target language. The others such as Byrne (2006) believes that technical translators need to impersonate the original author who is generally, though not always, an expert in a particular field and they need to write with the same authority as an expert in the target language. So in this case, the real challenge for the technical translator is to have expert knowledge of the way experts in a particular field write texts.

Although technical translators have different concerns such as transferring the information accurately, correctly and effectively and their challenge is to ensure that all of the relevant information is conveyed in such a way that the readers can use the information easily, properly and effectively also their aim is precisely the same as that of technical writing, but on the whole when considering all the above mentioned characteristics two factors are prominent; one is the translators' *subject knowledge* and the other is their *translation ability* (Byrne 2006). Fluck (1992) defines these two factors in another way "the ideal non-literary translator is often defined as a sort of a combination of the subject matter expert and the trained translator" (p. 221). So translators must have a thorough knowledge of the source language, a well-developed ability to analyse and some knowledge of the subject matter (Newmark 1988). The two discussed factors, translation ability and subject knowledge are both essential in order to write a coherent text. This study will discuss how these factors will predict the coherent in technical translation.

Coherence in writing can be achieved through the repetition of key words (Hamzah & Karuppiah, 1994). This is because repeating words is important to the sense of a paragraph's message. Such repetition emphasizes a word, connecting it through several sentences to tie them together internally. Sometimes, however, repetition becomes boring and monotonous. The repeated words should not be allowed to dominate as well. Repetition adds nothing to the sense of the paragraph; rather than pulling thoughts together more effectively (Hamzah & Karuppiah 1994). Besides, coherence in writing can be achieved through parallel structure. Parallel structures are created by constructing two or more phrases or sentences that have the same grammatical structure and use the same parts of speech. By creating parallel structures sentences will be clearer and easier to read. In addition, repeating a pattern in a series of consecutive sentences helps the reader see the connections between ideas (Hamzah & Karuppiah 1994).

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Teachers in technical translation classes also try to help the students to obtain sufficient abilities to do these kinds of translations but lack of coherence can be happened in all kinds of technical texts such as economic texts. Although, Lee (2002) believes that some lack of coherence with the communicative situation can be perceived by the target recipients in the case of the translation but the recipients will probably lack some culture specific knowledge and need more explanations, so according to Montalt Ressurreccíó, Ezpeleta Piorno, and García Izquierdo (2008) it seems that having subject knowledge for students beside their translation ability will help them in saving the coherence of the text and make it understandable for the readers. On the other hand, Kastberg (2009) rejects it and he believes that, since the translators do not stipulate it as a prerequisite that the literary translator be a poet (or a sailor or a matador for that matter) why then still saying that the students should also be an engineer, a lawyer or even a banker? He believes that translation ability is the only prerequisite in translation of technical texts. Besides, while the users read the translation done by students, as Kastberg (2009) mentions, they are not fully satisfied. Although teachers of technical texts tried to improve their translation abilities but they believe that while they read the translated text, the text is not understandable and somehow they can't get the purpose of it. It seems that the text is not coherent and there are no relations between the subjects through the text. Now as mentioned above due to some deficiencies like lack of coherence in technical translations done by the BA students the researcher attempted to answer the following question:

Q: To what extend does banking information and translation ability of BA students significantly predict the coherence of translated economic texts?

In order to find the answer of the above research question the researcher designed a model. According to Kenny (2011) in this model "The variable X is presumed to cause the variable Y. A moderator variable M is a variable that alters the strength of the causal relationship." It means that if we consider X as Translation Ability, Y as Coherence, so M is the Banking Information which is the moderator of this relationship. "Most moderator analysis measure the causal relationship between X and Y by using a regression coefficient. Although, classically, moderation implies a weakening of a causal effect, a moderator can amplify or even reverse that effect" (Kenny 2011:7). It means that Banking Information may resonate or even reverse the relationship between Translation Ability and Coherence. This model can be depicted as follows:

Translation Ability(X) ———→   ———→ Coherence(Y)

(M)Banking Information ————
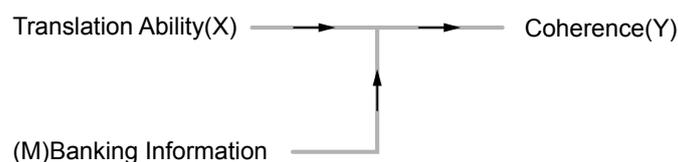
Figure 1: variables' model

2. Method

In order to find appropriate answer to the posed question, the researcher followed certain procedures and made use of certain instruments, which are reported in this section.

2.1. Participants

This study involved two groups of participants. It included BA students and raters. The researcher asked 71 BA students participate in this study. BA students were the senior students of Islamic Azad University Central Tehran Branch. In this study, the age and gender of the participants was not considered. They have been selected because of their characteristics and availability. In addition, in this study there were two groups of raters; the first group, which consisted of three raters, had postgraduate degrees in Translation Studies. Moreover, they were graduated from Islamic Azad University and most had experience in rating translated contexts. They also had several years of experience as teachers. These raters assigned in order to assess the

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participants' translation ability by rating their general translation test. The second group of raters included three raters who had postgraduate degrees in Persian language and they graduated from Islamic Azad University. They had several years of experience as Persian language teachers and editors of the media. Besides, they rate their student's products and help them to write Persian texts, prose, novels and short stories correctly. They assigned for assessing coherence factor in economic text translated by the participants.

2.2. Instrumentation

In order to capture all the possible results of the research question, the instrumentation had cautiously been presented in three different sections which have been arranged in one test package. In order to homogenize the participants, standard TOFEL (2004) test includes structure (15 items) and written expression (15 items) and reading comprehension (two passages) in 30min was administered to the participants separately to make them homogenized. This test was first piloted with a group consists of 20 samples who had the same characteristics as the participants. The Kuder-Richardson formula 21 (KR-21) index of reliability reported for this instrument was 0.876.Then, after item analysis, this test without any malfunction item was administered to them. Analyzing the results of this test of language proficiency, 51 BA students proved to be the main subjects of the present study by the help of mean and standard deviation of TOEFL and considering the subjects whose scores fell in the range of one standard deviation above and below the mean.

The other instrument employed in this research was an English text for translation from English into Persian with a general subject, consisting of two paragraphs. This test was administered to measure the participants' translation ability. Besides, this test has been measured by Waddington (2001) rating scale method C.

The next instrument was a banking information test in order to assess subject knowledge of the participants. This test was administered after running standardizing test consists of 40 banking information test through randomly 20 samples with characteristics similar to those of the target groups. The results showed the index of 0.885 for the reliability that is a high degree of reliability for a test could be used in the actual administration. Moreover, after conducting item analysis, 19 items from the whole test were distinguished faulty so these nineteen items were omitted from the banking information test.

The last section was economic translation test consisting of one passage with three paragraphs. The BA students were asked to translate the mentioned passages from English into Persian. The aim of the last test was measuring the coherence of translated technical texts, so this test has been measured by the TSA (Topical Structure Analysis) rating scale (Knoch 2007).

2.3. Procedure

Prior to the main tests, the TOEFL and the banking information tests were piloted on 20 samples who were not the main participants of the study but with the same characteristics. The TOEFL test was an actual one (2004) and after administration and calculating the IF (item facility) and ID (item discrimination) had not any malfunction. Besides, after administrating the pilot banking information test 19 items deleted and the rest was considered as the main banking information test. Moreover, the results showed that the banking information test was also reliable.

Then, the main TOEFL test administered for choosing and homogenizing 71 BA students of this study. Finally, 51 BA students who scored one standard deviation bellow and above the mean on this test were thus chosen to take the main tests. Then, all the mentioned tests (general translation, banking information test economic translation) named in the instrumentation part administered to the homogenized samples of the study.

In order to score the translation tests (translation ability and coherence) the researcher considered

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two groups of raters consist of three raters in each group. Then, to ensure the reliability of the scorings, an inter-rater reliability was run among three raters (who were instructors with related experience) in each group with a random sample of 10 out of 30 cases. The inter-rater reliability for all the three raters were high in each group thus they have been selected for the marking of the translation tests as raters. The first group used Waddington (2001) rating scale method C for assessing the translation test which was aimed to assess the translation ability of the participants and the second group used TSA rating scale (Knoch 2007) to assess the coherence of technical translation. The average score given by the three raters to each participant was ultimately calculated as the final score for him/her.

3. Results

In this study according to the model which the researcher aimed to work on, the moderating role of the subject knowledge (Banking Information) as a predictor, between translation ability and coherence of technical translation (economic translation) was investigated in BA students. In order to find the answer of the research question, the researcher used multiple moderating regression to find the answer. The data are used on this occasion to illustrate an analysis designed to test that the relationship between translation ability and coherence is moderated by banking information. So, there are three continuous variables in BA students; a predictor variable, an outcome variable and a hypothesized moderator variable, and the goal was to test the interaction between the coherence and the proposed moderator (banking information).

First of all to come up with a homogeneous group of subjects, 71 BA students took the TOEFL (2004) consisting of 51 items administered. Then, by the help of mean and standard deviation of TOEFL, the researcher selected 51 BA students whose scores fell in the range of one standard deviation above and below the mean.

After that, the researcher set the rater training sessions. According to (Weir 1990; McNamara 1996; Lumley, McNamara 1995), the most widely accepted purpose of the training session is to heighten inter-rater reliability. Hence, the researcher calculated inter-rater reliability among the raters of both translation ability and coherence to ensure the reliability of their scores on the main tests. To estimate inter-rater reliability among three raters, Cronbach's Alpha formula was applied Tab. 1.

Tests	Cronbach's Alpha	N of Items
Coherence	.969	3
Translation Ability	.895	3

Table 1: Inter-rater reliability

The index of 0.969 and 0.895 for Cronbach's Alpha entirely satisfied the researcher since it showed a high degree of reliability among raters based on Nunnelly's (1978) view that the value of Cronbach's Alpha should be greater than 0.70. In addition to computing Cronbach's Alpha, Pearson Correlation also was run to investigate the correlation between raters in pairs Tab.2.

Rater of the tests	Sig.(2-tailed)	Pearson Corr.
R 1&2 (C)	.01	.74
R 1&3 (C)	.01	.74
R 2&3 (C)	.00	.78
R 1&2 (TA)	.00	.89
R 1&3 (TA)	.00	.98
R 2&3 (TA)	.00	.90

Table 2: Correlations of raters in 10 samples Note: R; Rater, C; Coherence, TA; Translation Ability

The raters of this study had high correlation in scoring. The "Tab.2" also showed that the correlation coefficient was significant among translation ability raters and also between

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coherence raters in pairs and there was a high inter-rater reliability among them.

As cited before, the final scores on translation ability and coherence which used in this study, were the mean values given by three raters on each test. For example, the final score of BA students on translation ability test was the mean of three scores given by three MA English Translation raters. The descriptive statistics of the three tests illustrated above is presented in "Tab 3".

Tests	N	Min	Max	M	SD	V	Std.er
	stat	stat	stat	stat	stat	stat	stat
Banking information	51	1	19	9.66	4.47	20.02	.62
Translation Ability	51	3	9	5.74	1.92	3.71	.26
Coherence	51	4	8	5.82	1.16	1.34	.16

Table 3: Descriptive statistics of the main tests

After running SPSS software, the researcher first checked the prerequisites of multiple moderating regression; outlier, normality, linearity and homoscedasticity. According to Pallant (2007, p.38), "these all refer to various aspects of the distribution of scores and the nature of the underlying relationship between the variables." The results showed that there was no outlier and the scores were normal .Then, the researcher run the test of skewness. The results of these tests are demonstrated in "Tab.4". All obtained values of skewness divided by the standard error of skewness were within the range of -1.96 to +1.96, and thus the distributions were considered as normal in BA students (Dornyei 2007).

	N	Skewness	
	Stat	Stat	Std.Error
Banking information	51	.474	.333
Translation Ability	51	.343	.333
Coherence	51	.119	.333

Table 4: Skewness test for the distributions of scores

After that, the next step in this regard is to compute correlations between the three variables among participants' score; the predictor variable, moderator variable and the outcome variable should be correlated otherwise the results cannot be acceptable because there is no relation, interaction between them. In the Tab.5 the researcher computed them and presented them in a correlation matrix.

Variables	Sig. (2tailed)	Pearson.Correlation
C-BI	0.000	.608
C-TA	0.000	.650
BI-TA	0.000	.514

Table 5: Correlations of the variables Note: In this matrix C consider as Coherence, BI as Banking Information and TA as Translation Ability

According to Farhady, Jafarpour, and Birjandi (2001), the indexes of 0.608, 0.650, 0.514 for correlation are considered acceptable. Due to the above results the researcher entered the BA students' data into SPSS software in order to compute the multiple moderating regression to find the answer of the research question.

	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.724[a]	.524	.505	.703
2	.755[b]	.571	.543	.675

Table 6: Model Summary Multiple regression: a. Predictors: (Constant), banking information, translation ability; b. Predictors: (Constant), banking information, translation ability, moderating_effect

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In the above Tab.6 there are two models. In the first model, the correlation between predictors (Translation Ability and Banking Information) in BA students is significant with the outcome variable (Coherence) is; R=0.724 which means highly correlated. Besides, R^2=52.4%~ 52%, which means that about 52% of the seen variance in the coherence scores of BA students resulted from the translation ability and banking information. It also shows that 52% of the difference between the coherence in their translations resulted from their translation ability and banking information. Adjusted R^2 is the same as R^2 but the role of N is not considered as in correlation. The subject's number is important so it can be impressive and change the results. Here adjusted R^2=50% and is not too different with R^2. Besides, according to the next "Tab.7" ΔR^2 (R square change) of the BA students= R^2, because in this phase the interaction or the moderating effect (banking information) has not been entered into the model yet.

Model	Change Statistics				
	R Square Change	F Change	df1	df2	Sig. F Change
1	.524	26.462	2	48	.000
2	.046	5.066	1	47	.029

Table 7: Model Summary Multiple regression

Moreover it shows that F= 26.462 which is significant (F Change=0.000< 0.05), it means that R is a good predictor of it. In the second model Tab.6, there are not only translation ability, banking information but the moderating effect also added to the model. Moderating effect or interaction is the multiple of the z-score of the coherence with moderator (banking information). Then, in this model R=0.755 and R^2=0.571~57% which shows that about 57 % of the variance in coherence resulted from translation ability, banking information and the interaction between the banking information as a moderator and coherence.

Then, in the next phase, the role of the interaction itself was examined, so ΔR^2 should be considered and whether it is significant or not. In Tab.7, ΔR^2=0.046 which shows that the interaction about 4.6 %~5% which explain the variance in coherence and this is also significant (FChange=0.029<P=0.05). It also shows that banking information and moderating variable, 5% have effect on the relationship between translation ability and coherence in BA students. Moreover, if the banking information increases or even decreases, the relationship between translation ability and coherence can be weaken or even amplified. Besides, "Tab.6" shows that the difference in the coherence's variance also 54.3% explained by translation ability, banking information and moderating effect.

Due to the first regression equation; $y\hat{}=b_1x_1+b_2x_2+\ldots+a$, in this article, $(y\hat{})$ is the coherence, (x_1) is the translation ability, (x_2) is the banking information and (a) is constant. The "Tab.7" has presented that the R of this equation in this study is significant even the researcher entered the third variable to it. Moreover, the ANOVA matrix in the next page Tab.8 shows that the second F checks the significant of this equation in BA students. F in the next table shows that R in the model summary matrix is significant, besides, the second ΔF (ΔF checks the difference which occurred by interaction) also shows that ΔR^2 is significant. According to the second regression equation $(y\hat{}=b_1x_1+b_2x_2+\text{moderation}+a)$, in this study, Coherence=b_1Translation Ability+b_2 Banking Information+ Moderation +a. Besides, the matrix of the model summary R of this equation is 0.755 Tab.6 which is significant while referring to the F of the third row of ANOVA matrix (F=0.000<p=0.05). Moreover, F Change "Tab.7" shows that while interaction added to the equation R also changed to (5%) and was significant.

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Model	Sum of Squares	df	Mean Square	F	Mean Square
1-Regression	26.220	2	13.110	26.462	.000[a]
Residual	23.780	48	.495		
2-Regression	28.534	9	9.511	20.825	.000[b]
Residual	21.466	47	.457		

Table 8: ANOVA multiple regression: a.Predictors: (Constant),Translation Ability,Banking Information ; b.Predictors:(Constant), Translation Ability,Banking Information, moderating-effect; c.Dependent Varoiable: Coherence Scores

According to ANOVA matrix both model summaries in Tab.8 are significant because while the researcher refer to the first and third row of this matrix both are less than 0.05. Then, in Tab.9 the researcher tried to test that how the relationship between the variable effect the coefficient of the named equation. In other words in the first model the researcher tested the banking Information and translation ability and their effect on coherence in BA students then in the second model moderating effect added to this model. In the coefficient matrix, Tab.9, Beta is the standard form of B, because the researcher omitted the metric effect of B, so the variable which has the more Beta also has more effect on the equation.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 C	-5.211E-17	.099		.000	1.000
BI	.373	.116	.373	3.210	.002
TA	.444	.116	.458	3.950	.000
2 C	.108	.106		1.019	.313
BI	.448	.116	.448	3.848	.000
TA	.483	.112	.483	4.316	.000
M E	-.215	.095	-.233	-2.251	.029

Table 9: Coefficients (Dependent Variable: COHERENCE)

With regard to the Tab.9 Beta of the Banking information in both models is less than Beta of Translation Ability, (0.373<0.458 also 0.448 < 0.483) besides, Beta of Banking information is significant because t1 =0.002 < p= 0.05 in the first model and in the second model t2 = 0.000< p= 0.05 .Beta of Translation Ability also is significant (t1= 0.002 <p=0.05 and t2= 0.000 <p= 0.05). It can be found that in BA students, both Banking Information and Translation Ability, which are predicators of Coherence, are effective in order to have a Coherent translation. They can resonate or even weakening the Coherence of the Technical Translation.

Moreover, in the second model, Beta of the Moderating effect, the interaction between the Coherence as outcome variable and Banking Information as hypothesized moderator, is -0.233 which is less than Translation Ability. In addition, Beta is negative which means that the moderating effect may reverse the relationship between the Translation Ability and Coherence. It means that while Banking Information and Translation Ability of the BA students increase, it is the Coherence which causes a good Technical Translation and enables them in doing these kinds of translations. In addition beta of moderating effect is less than Translation Ability which can be inferred that the effect of Translation Ability of BA students in this model is more than moderating effect. Besides, the amount of constant in the first model (-5.211E-17) confirm that there is no error and just the three mentioned variables are predicators.

4. Discussion

According to the results, it can be found that the significant relationship between subject knowledge, translation ability and Coherence was affirmed in BA students. Moreover, the researcher found that subject knowledge and translation ability can significantly predict the coherence in technical translation. Moreover, according to the results, it can be found that

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although both banking information and translation ability are predicators of coherence but having Translation Ability is more helpful in order to have a coherent translation than having Subject Knowledge. Besides, the amount of Beta for Translation Ability is more than Subject Knowledge. It can be shown that the effect of translation ability on coherence is more than subject knowledge. In addition, it means that translation ability is more effective and it can even resonate or weakening the coherence of the technical translation in BA students.

Furthermore, in the second model, Beta of the moderating effect (the interaction between the coherence as outcome variable and banking information as hypothesized moderator), is (-0.233) which is less than translation ability. Moreover, Beta is negative which means that the moderating effect may reverse the relationship between the translation ability and coherence Fig.2. According to Kenny (2011) it means that while subject knowledge, banking information, of BA students increases, the coherence of technical text will be also increased. The results show that it is their translation ability which causes a coherent technical translation and enables them in doing these kinds of translations. In Fig.2 this result is depicted.
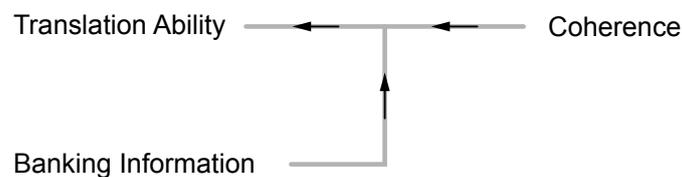

Figure 2: variables' model (result)

5. Conclusion

This research provided evidence that coherence in translated economic texts is the most important problem of these kinds of translations. The researcher also found that there is a significant relationship between subject knowledge, translation ability and coherence of technical text. In simple terms, the higher the translator's subject knowledge and translation ability, the better their ability in saving the coherence of technical text. As a result, while the Subject knowledge increases so the relation between Coherence and Translation Ability also increases.

On the other hand, while studying BA students, the prediction power of Translation Ability is more than Banking Information and moderating effect (relation between Coherence and subject knowledge). May be it can be shown BA students' Translation Ability can significantly predict the Coherence of technical translation.

In addition to the fact that there was a linear correlation between the three aforementioned variables, a predictability relationship was also established between these three. Hence, the subject knowledge can significantly predict the coherence in technical translation. In other words, BA students with high scores on the banking information test are expected to get high scores on the coherence.

Furthermore, the results showed that moderating effect was negative. Consequently, it reverses the relationship between the Translation Ability and Coherence. It means that while subject knowledge increases, the technical text becomes coherent and increases Translation Ability of the BA students. In other words, it is the Coherence which causes a good Technical Translation and enables BA students in doing technical translations.

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Enhancing students' skills in technical writing and LSP translation through tele-collaboration projects:
Teaching students in seven nations to manage complexity in multilateral international collaboration

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Abstract. Partnerships involving language projects have been common, but most have paired just two nations at a time (Jarvenpaa & Leidner, 1999; Flammia, 2005, 2012; Herrington, 2005, 2008; Humbley et al., 2005; Stärke-Meyerring & Andrews, 2006; Mousten et al., 2010). That changed in 2010, when universities in five nations, long involved in the Trans-Atlantic Project (TAP) began a far more complex international learning-by-doing project (Maylath et al., 2013). By 2012, universities in two more nations were added. In forming their students into cross-cultural virtual teams (CCVTs), instructors asked, how can students best learn experientially to manage complex international/interlingual technical documentation projects? During multilateral collaborations, two projects took place simultaneously: a translation-editing project and a writing-usability testing- translation project. The undertakings' complexity was central in the students' learning, thereby preparing students for the international, multilingual, multicultural environments in which students can be expected to operate after they graduate. Further, the projects succeeded in increasing trans-cultural and language awareness among students with little in extra funding.

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Keywords. Collaboration, international, localization, managing complexity, multilateral, multilingual, multicultural, technical writing, translation, usability testing.

1. Introduction

This paper describes the design of a multilateral international project (Thompson & Carter, 1973; Moreno-Lopez, 2004) in technical communication and translator training programs in Europe and the United States. The largest and most complex such international learning-by-doing collaboration to date, the Trans-Atlantic Project (TAP) involves students collaborating in cross-cultural teams, either translating and editing texts and/or writing, usability testing, and translating texts (Humbley et al., 2005; Maylath et al., 2008; Mousten et al., 2008; Mousten et al., 2010a; Mousten et al., 2010b; Mousten et al., 2012). As Spilka (2010) puts it, the work in technical communication "typically takes place in complex, multiple social environments" and "we now need to negotiate a complex, often global world of intersections and interrelationships, multiple goals and constraints, and new ways of creating, disseminating, storing, and retrieving information and of managing knowledge and content" (pp. 8–9). The TAP is an opportunity for learning LSP in a wider context. A description of the project with its types of projects follows, stressing various LSP features. But the TAP turned out to have added value: students learned about timing in LSP-professions, face and power issues in LSP settings, and the importance of knowledge in LSP activities.

2. Bilateral projects

The TAP typically involves a bilateral writing-translation project between just two classes in two countries. The first project started in January 2000 with a technical writing class at the University of Wisconsin-Stout, USA, and a translation class at what was then called the Mercator College in Ghent (now Ghent University), Belgium. The North American technical writing students wrote a procedural text and carried out a user test before they sent it to Europe. They then answered the European translator's questions. For the European translation students, it meant that they received an American English source text that they needed to translate for a comparable audience in their own language area (official language being Dutch). It also meant that they were able to contact the source-text writer to ask any comprehension questions that they might have and that they could put their own texts to the test.

A second type of bilateral project, the translation-editing project, occurs less frequently. The direction of text travel is reversed. It begins with the translator, rather than the writer. The English-speakers become reviewers or editors of translations, rather than writers of the source text. The first translation-editing project took place in 2001 between a translation class at Aarhus School of Business in Denmark and the technical communication capstone seminar at the University of Wisconsin-Stout. The students in Denmark selected a journalistic type of published text, which they sent to their reviewers in Wisconsin, who edited the translation with an American English audience in mind. Both asked questions of the other.

3. Multilateral projects

3.1. Managing complexity

By 2010, awareness arose that the typical bilateral projects would not be sufficient to prepare technical writing students in a new International Technical Writing course, designed and taught by Maylath at North Dakota State University (NDSU), for the whirlwind of complex projects that they would have to handle simultaneously in the workplace. Discussions with practising technical writers confirmed that a course in international technical writing would need to make managing complexity a prominent feature. In business and industry, globalization has led to mounting concern about how to manage complexity (Lissack and Gunz, 1999; Marrewijk and

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Hardjono, 2003; Gottfredson and Rigby, 2009; Helbing, 2010). Researchers in business schools have been paying close attention to what is involved in managing complexity. Maznevski, Steger, and Amann (2007) have, for instance, found that complexity is generated by four factors: diversity, interdependence, ambiguity, and flux. In this project, the mediation does not concern text alone but also activities. Writing activities are dispersed in space and time and performed by means of several mediating artefacts (e.g., Google Drive, social networks, e-mail) that carry traces of the values and ideologies that motivate their use.

In addition, Schwaniger (2000) has found that managers must create an "intelligent organization" adept at meeting three criteria: efficiency, effectiveness, and legitimacy. Legitimacy is a problematic concept. Many translators have had a hierarchical understanding of the translation process and felt as though the authors were the masters of the text, while the translators were the faithful and unquestioning servants. As Maylath pondered how best to help students learn to manage complexity, he thought about how he could simulate diversity, interdependence, ambiguity, and flux to achieve efficiency, effectiveness, and legitimacy, by drawing on the TAP network's array of courses in international technical writing, usability testing, and translation. The solution was to multiply: multiply the number of projects, the number of partners, and the number of nations, cultures, and languages. Using Blommaert's (2010) theoretical tools, we can see that student collaboration developed at several different scale-levels (scale = vertical, power-invested space), where different orders of indexicality (informed by a variety of semiotic systems) dominate, resulting in a polycentric context in which writing activities and communicative behaviours were pushed and pulled in various directions.

3.2. Co-authoring

In 2012, another complexity was introduced: international co-authoring between students in the U.S. and Spain. Cross-cultural virtual teams (CCVTs) of students in NDSU's International Technical Writing course and engineering students from the Polytechnic University of Catalonia's (UPC's) Technical Writing course in English co-authored sets of instructions on technical topics. Adding international co-authoring between subject-matter experts and language specialists multiplied complexity much more than first anticipated. The project grew in complexity in relation to (i) language proficiency, (ii) self-perception of status and roles in the collaboration and negotiation involved in the co-authoring process, (iii) task management, and (iv) localization.

For students in Spain, the collaborative project provided their first contact with technical English, simultaneously introducing them to the basics of technical writing in the disciplines while also developing their proficiency in English. Mixed proficiency levels and lack of familiarity with technical writing practices posed several challenges to Spanish students and affected their self-perception of their status and role in the project. Despite their role as subject-matter experts (SMEs) and the fact that they had chosen the topics, the engineering students tended to relinquish control of the process, relying too much on the students in the U.S. for the latter's (near-)native status. This perception was probably reinforced by certain views of the role of engineers in technical communication, leaving responsibility in the hands of language experts. Linguistic challenges also included the pragmatics of cross-cultural professional communication. Challenges related to task management included coping with differences in timing (e.g., different semester starts) and working across time zones, deciding on and using technology for the project, meeting the deadlines required by the translators, and responding to the demands from different partners (co-authors, usability testers, translators). Thus, the engineering students had to learn about basic concepts essential to technical writing (process, genre, audience) at the same time that they were asked to perform as if in a real-life professional situation, which requires the management of complexity and professional communication skills. Localization was also a key issue that arose as the engineers needed to take into account the global and local dimensions of the project, such as identifying and referring to the objects of the instructions (e.g., dealing with a specific machine in different countries and settings, addressing different types of audiences), as well

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as dealing with the semiotics of international communication (e.g., what language, symbols, illustrations, are globally understandable?). As they faced these key questions during the project, students learned experientially.

The TAP provided students with invaluable experience and practice in key concepts in technical writing (audience, purpose, etc.), and because of the deadlines for project stages—for example, the project had to start very early in the term—students needed to learn concepts fast. As they did, the writing instructors learnt ways to help students cope with challenges, including introducing some intensive instruction or awareness-raising activities early in the term, sometimes complemented with self-study material or references. In subsequent co-authoring projects, the instructors now require students in Spain to do their own usability testing, with the aim of making the project more tangible, so that they can anticipate questions and issues that arise during the process. It is clear, however, that, with the project occupying a central space in the course, we need to align the technical writing course for engineers more closely with the project.

These reflections from the UPC instructors participating in the project are complemented by the useful insights provided by two graduate students from NDSU who participated in the project. Both are citizens of Europe studying in the U.S. To Massimo Verzella, one of the Ph.D. students in NDSU's International Technical Writing course, it seemed that the engineering students appeared to be a bit overwhelmed by the co-writing project. Because their competence in English was relatively low, they hesitated when writing the instructions. Many of them implicitly invited the NDSU students to take the lead and start writing so that they could then revise and elaborate on specific sections of the document.

Like Verzella, Tatjana Schell, another Ph.D. student in NDSU's International Technical Writing course, noticed the Spanish students letting the American collaborators take the lead. However, she does not think this was due to low English skills but rather an assumption that their American partners would have a better grip on best word choice because of their authority regarding proper vocabulary. However, because she saw this project as a collaboration with them, she often felt all by herself when it came to constructing the document. Only after the project wrapped up did she think that more face-to-face interaction through the means of Skype, or other media, would have been more beneficial and less time-consuming than emails for the sake of speedier problem solving, thus revealing the importance of negotiating the roles and tasks of each partner in such a project during its entire duration. For the future, we can see that it could be beneficial if students in the International Technical Writing course are asked to investigate topics chosen by the engineering students and to take the lead in writing the document so as to facilitate the task of non-native speakers and ease them into the collaborative process, which entails facilitating the conversion of expert jargon to Global English.

3.3. Usability testing

Usability testing is often conducted in bilateral writing-translation projects but was not done internationally until 2010, when multilateral projects were launched, when usability testing took place simultaneously with the English source texts in both the U.S. and Finland. In 2012, when engineering students chose the text topics, the students conducting usability tests in North Dakota and Vaasa discovered that their universities' engineering labs often lacked equipment, such as instruments for measuring the consistency of a metal, which the engineering students in Catalonia were accustomed to using. In the end, the students were able to test 11 out of 18 topics. Students in the U.S. and Finland had to familiarize themselves with usability of instructional documentation and usability testing methods. Interaction with users made writers also aware of what they did with language and other communicative codes. The students in all three countries also learned from each other by comparing their usability testing reports with somewhat differing results yielded from tests of the same sets of instructions.

Interaction with users made writers aware as well of what they did with language and other communicative codes. Having users test a set of instructions allows authors to achieve a

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metacognitive awareness of how their writing process is shaped by their spatio-temporal situatedness, their use of specific mediating artefacts and by such factors as personal level of expertise, personal and cultural assumptions (which inform a local understanding of processes).

3.4. Translating

The TAP provides translation students grand opportunities to enhance their LSP competencies. Effective work planning and time management were a challenge because of universities' different semester schedules and proved to be a significant factor in how far-reaching and in-depth the collaboration could be. The class in the U.S. began in mid-August and the class in Spain in early September, while the classes in Belgium, Denmark, and France started in mid to late September. However, the classes in Finland and Italy did not begin until October. To overcome the problem of having less overlapping time available, the students in Padua worked in groups simulating professional teams. Each group had a project manager, a terminologist, a translator, and a reviser.

Scheduling has always been an issue in the translation process, in particular because translation is often the last phase of a documentation project. Translators can often be heard complaining that schedules are short because clients do not know that translation is not merely a process of pressing a button. Skilled translators have to go through a long list of procedures to complete their work, and they usually know how to manage the schedule. During the writing-testing-translation project, two weeks were devoted to translation, but sometimes, in particular when the co-authors spent too much time on the documentation phase, translators had to cope with tighter schedules. This was a good lesson for them since they would eventually have to learn that tight schedules often happen "out there in the real world." One way to deal with the issue is to be proactive in the planning phase, as some French students took the initiative to do: some of them asked partners in America for at least the topics of the documents or, better yet, for intermediate unfinished drafts. They wanted to anticipate the research phase of translation, by browsing the Internet and looking for books and documents on the topics to get ready for the translation phase. Translators are not SMEs, so they have to master a subject to understand the general meaning of a document and also specific terminology to be able to translate into their native language. Translators are SMEs regarding translation and know this research phase is of great importance. Even when the French students had limited opportunities to negotiate writing issues, they learnt that they had to prompt feedback from the co-authors by asking questions. Feedback is fundamental: the aim is to create interactions between actors. Interactions foster professional skills, confidence, and dynamism. They also boost productivity and quality in the final products—in this case, the technical document on the one side and the translation on the other. Feedback is also about engaging experts to improve quality.

The more limited the time, the more limited were the opportunities to negotiate writing issues. As the technical writers attempted to revise their texts and rush them to each set of translators for each of the three target languages, a key question arose: Are instructions globally translatable into a standard set of actions? In Paris, Minacori realized her students needed a clear list of procedures to translate the document. It was quite astonishing to find out that translating student-authored texts in the TAP seemed to the translation students to be very different from translating a text provided by an instructor. Some students' questions revealed that they seemed lost. Even when Minacori asked the students to get in contact as quickly as possible with their counterparts, very few students took the opportunity to do so. Most of the French students waited till the co-authors sent a completed text to them, rather than starting with intermediate drafts. At project's end, the French students realized that they could have done a better job if they had at least known the topic of the document that they would be translating well in advance. That way they could have done the ample and appropriate research that any translator has to do before getting started.

For their part, the co-authors expected the translators to ask more questions than they did; apparently, the translators felt as if their task was merely to translate what the authors wrote. This hierarchical understanding of the translating process (author as owner or master of the text,

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translator as faithful servant) reminds us of Venuti's (1995) case for redressing the problem of the translator's invisibility. In their book The Prosperous Translator, Durban and Seidel (2010) argue against translators' isolation from authors and point out the improved quality of the text in the target language when translators ask questions of the source texts' authors. Asking questions creates feedback and always improves the quality of the translation.

In some cases, the French students proposed modifications to the technical document to improve readability. For example, one student decided to add a transition sentence between two different parts of a document: a first phase was about programming, and a second one, about simulation. To demarcate a clear division between the two parts, the French student decided to add the following sentence: "Once programming is over, you can go on with the simulation" (Une fois la programmation terminée, vous pouvez commencer la simulation). In this example, the translator behaved as an expert wanting to help a potential reader. In another example, a French student modified a sentence in the document to make it more readable. The original sentence in the source text was "This is a very simple application, but you can add a lot of things and make it a complex application." The French student thought the word "thing" was not precise enough and could also be misleading. Thus, he chose to adjust it by adding the concept of "option" for "thing." In the target language the sentence became "Cette application est très simple d'utilisation, mais vous pouvez y ajouter de nombreuses options selon votre convenance" (This application is very simple, but you can add as many options as you wish). In the same document, the French student read, "Click on Text and Text again." To avoid the repetition and be more concise, he modified the text to "Click on Text twice."

In addition to translation, localization needs to be understood broadly and be seen as not only the translator's problem. The writers too need to take into account the fact that the text will need to be localized in varied cultural locales. In particular, writers have to take into account whether a reference to something outside the text should be used globally—i.e., as a system-bound reference—or whether it may need to be replaced by a local item. When aware in this way, good authors provide guidelines for these points, so that the translators know what is preferred. Of course, the translators can provide guidelines as well, so that the text is localized appropriately and not only according to the authors' notions of what works globally or what works locally. An example of useful interactions and feedback in this regard came from one of the American co-authors who wished to anticipate some questions from the translation teams and give them a nice lesson about localization. The American wrote, "You said that you know little about what you should be doing. I think you should be 'localizing' the text which means translating it into French and thinking about what changes are necessary to make it more appropriate for hypothetical users in France. For instance, think about how you want to translate words like 'software' or 'keyboard' or 'key.' Are there any synonyms for those terms in French or do you tend to use the English words for them? Also, think about what voice is appropriate for the instructions. In American English, it is usual to use the declarative voice in instructions, e.g. 'To open the program, click the button in the bottom left corner' or 'To start the program, open Adobe Photoshop.' These sentences kind of sound like commands, right? But this is how it is the most appropriate to have a text of instructions for American public. No use of 'to start the program, the user has to open Adobe Photoshop' with the 3rd person singular. Finally, here are a few things that you as translators might be interested in in general:

1. Note the use of the punctuation style appropriate in American English. For instance, in AmE we place a comma or a period (a full stop) inside the quotation marks instead of outside of it as in British English, e.g. 'apply the "Radial Gradient," and then...' (American English) vs. 'apply the "Radial Gradient", and then ...' (British English). You would need to fix the punctuation if it is different in French.

2. When talking about the audience of the instructions, I use the plural form of 'user' as in 'users.' To refer to the users, I alternatively use the pronoun 'them.' This helps me avoid referring to the user as 'he' (which is deemed as sexist language) or choosing between 'he/she' or "she or he" when talking about the user.

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3. I have included a small glossary in the first part of the instructions before the actual steps. Based on your consideration of how to appropriate the text for your local user, you can move the Glossary toward the end of the document and place it after the steps. You can also add something to it, e.g. the definition for 'cursor' or 'keyboard' in your language. However, since I thought that the audience for the document would have some basic knowledge of how to operate a computer, I chose to omit adding the definitions for things like 'cursor' or 'keyboard.'"

3.5. Editing

The translation-editing project presented its own challenges to the students. When translating into their L2, translation students had problems with collocations and idiomatic English. They were free to choose the articles they wanted to translate. In most cases, these articles presented a local cultural perspective. For instance, when Italian was the source language, the translators needed to solve problems such as how to present Italian culture-bound concepts to American readers who might have partial or different knowledge of the topic. A prominent example is the different views of the mafia in America versus Italy.

Schell found the translation-editing project to be far more fun than the writing-testing-translating project. She reports that she had a far clearer sense of what was her share of work and what she had to do as an editor. As a co-author, she found herself significantly more challenged in juggling many more partners, cultural differences, strict deadlines, and, overall, understanding her role in the project.

As with the writing-testing-translation project, the time available to work on the three different translation-editing projects (from different source texts in Danish, Dutch, and Italian) was the most visible challenge. Close behind were the nature and quantity of suggestions that the U.S.-based editors could offer to the translators. To make the situation clear, Schell and her NDSU co-editor explicitly pointed out to the translators that their editing suggestions were indeed only suggestions and that the final decision lay with the translator. She reports that, for the translation-editing project, the email communication seemed far more effective than it did in the writing-testing-translating project. Also, in the translation-editing project the translators' and editors' discussions about the characteristics of a U.S. audience developed naturally and quickly. In contrast, such discussions in the writing-testing-translation project tended to be toned down, perhaps because of the wider array of target languages and cultures was not as well understood.

Schell notes that it was very interesting to discuss with her partners particular questions concerning the translation process, including about audience awareness and vocabulary used in the text. While her being a non-native English speaker did trigger some uncertainty in her problem solving with regard to the best word choices (she is a native speaker of both German and Russian), she very much enjoyed the collaborative and negotiating side of this project. Also, although she spent far less time with editing the text from her Danish collaborator than with her Belgian collaborators, her knowledge of German was of good help when working with the Flemish Belgians' translations from Dutch to English. Her editing work for the Danish student concentrated largely on discussions of syntax, while the focus of her collaboration with her Belgian partners focused mainly on audience awareness and choosing the correct vocabulary for the intended readers. She concludes that the experience she gained during the project not only included an understanding of how such projects might work in professional settings but of what should be discussed about the translation process, and how, during an international documentation project.

Suggesting improvements for a text, as editors did for their translators, can produce a face-threatening situation in negotiation situations. Face in this context is defined as "the value a person places on his or her public image, reputation, and status vis-à-vis other people" (Thompson 2014: 90). In the field of intercultural communication, Ting-Toomey (1988) developed an explanatory framework for face concerns and conflict behaviour. Suggesting improvements for a text can

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produce a face-threatening situation that may in turn become a conflict and impede progress and collaboration.

In an example from the translation-editing project between Denmark and the US, a bilingual/ bicultural student (culturally half-American, half-Danish) was paired with an editor who was herself bilingual/bicultural as a New American who had emigrated from Sudan eight years earlier. Though the Sudanese-American was comfortable with vernacular American English, learned at her high school in North Dakota, she sometimes still struggles to gain a full mastery of standard English. This was evident already in the introductory email exchanges, in which the Sudanese-American editor revealed that she lacked fully proficient knowledge of the English language and American culture. The American-Danish translator felt that her integrity was threatened or being undermined and was afraid that her work would be ruined. The Sudanese-American editor felt that the task was daunting and hesitated to revise anything. In consultation with each other, the instructors added a second American editor to this team. We can see that it is important for instructors to match personnel and subjects to obtain the right balance and add value to the text. Face can easily be lost on both ends, and conflicts may arise and grow if intervention does not take place. This episode is an example of when intervention was crucial. In retrospect, questions about power distribution between professions, persons, and languages emerge and lead to yet another question, which may become more relevant in future: how does one define a native speaker?

Respect was fundamental for joint problem-solving. A joint-solving strategy involves describing your interests, using open-ended questions, and listening actively (Lewicki et al., 2011:91). Showing respect and listening to reasons why aspects of a text are important are keys to finding correct and appropriate solutions regarding a text's topic, appropriateness, and usability. They need to be coupled with open dialogue and a willingness to follow the advice given.

Power issues were always lurking in the background. Power has four vantage points; potential power, perceived power, power tactics, and realized power (Kim et al. 2005:799-822). In our projects, we found that the best results came when teams shared an even distribution of power and knowledge. We saw that the potential power was hierarchical and followed the direction of text travel, so that the originators of a text (the co-authors in the writing-testing-translation project and the translators in the translation-editing project) seemed to have more power over the text than did subsequent receivers. However, we rarely saw power tactics being exercised overtly, perhaps because our participants were one-time participants. Longer-term relationships might reveal power tactics employed more overtly.

Of course, professional knowledge is an enormous and legitimate power and often the key to good results, as Lewicki et al. (2011:156) make clear, but sometimes it is not recognized was such. An episode from one of the translation-editing collaborations illustrates the importance of knowing the profession, the power that goes with it, but also the time it takes to have it recognized, and not without resistance: One of the Danish students was a trained physicist, in addition to being a translation student. She translated from Danish an article on how Newton's second law works in practice. In addition to improving the language, the U.S.-based editorial team moved an adverbial to a more grammatically appropriate place in the sentence and thereby accidentally changed the whole logic of the text. Many email exchanges followed, until the editors gave up on the translator, while the translator was frustrated that the editors never understood why it was important that the adverbial be linked to a word and not to the whole sentence. To echo what Jan Engberg pointed out on during his keynote address at the 2013 LSP symposium, knowledge exists within each of the participants, and the contribution of knowledge and insistence on knowledge may occur at all levels. The precondition for consensus is continued explanations, discussions and understanding from all parties involved in the project.

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4. Conclusions

Our experience taught us several lessons. First, as the collaboration closely resembles the complexity of international documentation workplaces of language service providers, it provides invaluable learning-by-doing exposure to, and practice at, realistic language for specific purposes. In relation to preparing students for global careers, we found that this type of collaboration strongly underpins the value-added aspects of interpersonal relations and cooperation to achieve a high-quality result that caters to both senders' and receivers' goals and needs.

In spite of its complexity, students and lecturers are satisfied with the results of the project, which offers possible models to be applied in other interdisciplinary or cross-curricular courses. Students appreciate the opportunity to connect globally, which in their view contributed to preparing them for challenges related to today's global professional settings. This satisfactory experience is reflected in students' comments (see 5. Appendix).

5. Appendix

BSc student in Industrial Design, Polytechnic University of Catalonia, Spain: "This project gave us the possibility to connect globally and this is important for us, engineers, who need to work with partners worldwide."

MA student in technical translation, Aarhus University, Denmark: "I've learned to look at my own text from someone else's perspective and most often I can get why the person has made the suggestion that she has. If you get a comment on something in your text that you hadn't thought about from the other person's point of view, then it'll only make you cleverer."

BA student in English language and translation, University of Trieste, Italy: "A positive and useful experience [...] giving us the possibility to test our abilities in a different situation from the usual classroom environment and giving us a glimpse of what professional translation can be like."

Assorted students at Vaasa University, Finland: "[The project] helped us to see things from the writer´s perspective." "This project improved my confidence in communicating using English." "It was interesting to compare the results of the user-testing conducted here [in Vaasa] and in the US."

Assorted students at University College Ghent/Ghent University, Belgium: "Most positive was seeing the differences between countries (attitude, language competence level, institutions)." "It is a good exercise to ask the writer of a source text the right and most important questions." "We saw what other aspects besides linguistic equivalence were important, e.g. usability testing." "I learned that technical writers look at a text from a different point of view."

Assorted students at University of Paris Diderot, France: Students got insights into the professional experience and gained knowledge in different subject matters. They experienced different aspects of collaborative work and participated in rich cultural exchanges. They said they would benefit from early contact with partners and following development of documents as they move down the line, through a collaborative platform.

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Anregungen für den Einsatz der interaktiven Tafel im studienbegleitenden Wirtschaftsdeutsch

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Abstract. Like any innovation, the use of interactive whiteboard in teaching has provoked many negative responses as well as positive ones. Some people consider it a useless decoration in a classroom, others see it as a challenge. The author of this paper takes the latter view.

The aim of this research is to present the use of interactive whiteboard in teaching by using texts from field of German for Economics. All methodological suggestions contain three phases: before, during and after the IWB use.

Keywords. Whiteboard, innovation, challenge, German for economics.

Abstrakt. Wie jede Innovation, so verursachte auch der Einsatz der interaktiven Tafel im Unterricht viel Skepsis, aber auch Befürwortung. Für einige ist die interaktive Tafel ein überflüssiger, teuerer Schmuck im Hörsaal, für andere wieder eine Herausforderung.

In diesem Beitrag wird die interaktive Tafel als Herausforderung betrachtet. Anhand einiger, an die interaktive Tafel angepassten Unterrichtsmaterialien aus dem Bereich Wirtschaftsdeutsch, werden einige Vorschläge für den Einsatz der Tafel im studienbegleitenden Deutschunterricht in Serbien dargestellt. Die methodischen Anregungen beziehen sich auf die Arbeit vor, während und nach dem Einsatz der interaktiven Tafel.

Schlüsselwörter. Interaktive Tafel, Innovation, Herausforderung, Wirtschaftsdeutsch.

1. Einleitung

Jede Neuerung bringt Missvertrauen mit sich und Stimmen dagegen. Ich kann mich noch daran erinnern wie meine Großmutter die Küchentücher noch lange in einem Topf auf dem Herd gekocht hat, weil sie kein Vertrauen in die Waschmaschine hatte. Sie erklärte ihr Verhalten wie folgt: die Waschmaschine kann nicht das, was meine hausgemachte Seife, das Wasser und mein Topf können.

So ist es auch mit dem Unterricht. Jedes neue Medium stoßt am Anfang auf Ablehnung. So war es mit dem Tonband, mit dem Computer und heute mit der interaktiven Tafel. Sie wird von vielen Lehrern als eine überflüssige, teuere Investition angesehen. Ihrer Meinung nach, ist alles was man mit einer interaktiven Tafel erreichen kann, auch mit einem Baemer und einer Leinwand oder einer weißen ev. grünen Tafel für viel weniger Geld ebenso erreichbar. Mit dieser Arbeit möchte ich diese Auffassung nicht bestreiten, und nicht gegen Beama, Leinwand etc. plädieren und für interaktive Tafel werben. Nein, ich möchte dem neuen Medium eine Chance geben. Zuerst eine Chance in meinem Unterricht und dann auch im Unterricht meiner Kolleginnen und Kollegen.

2. Was ist eine interaktive Tafel?

Als interaktive Tafel wird eine Weißtafel bezeichnet, welche „mittels Beamer das Bild eines angeschlossenen Computers übermitteln kann. Über diesen, am Whiteboard abgebildeten Computerbildschirm, können je nach Hersteller per Hand oder mit einem speziellen Eingabestift

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alle Funktionen des Computer am Whiteboard interaktiv gesteuert werden" (Hauke 2011: 3).

Eine interaktive Tafel besteht aus einem Computer, einem Beamer und einem Bildschirm. Auf den ersten Blick nichts Neues. Aber doch. Der Bildschirm unterscheidet sich von jedem anderen Bildschirm und von jeder anderen Tafel. Der Bildschirm, dh. die Tafel, ist interaktiv. Das bedeutet, dass die Fläche dieser Tafel berührungsintensiv ist, man kann auf ihr vorbereitetes Material zeigen und gleichzeitig verändern und zwar ohne Hilfe der Computertastatur, nur durch den einfachen Fingerdruck an die Tafel oder Schreiben mit Stift. Also, das was wir mit einer herkömmlichen Tafel und mit einem Computer, einer Leinwand und Beamer erreichen können, können wir alles mit nur einem Medium, mit der interaktiven Tafel. Und nicht nur der interaktive Bildschirm unterscheidet die Tafel von den genannten Medien, sondern auch zahlreiche andere Möglichkeiten, die dem Benutzer zur Verfügung stehen.

3. Die Vorteile der interaktiven Tafel

3.1. Speichermöglichkeiten und Zeitersparnis

Die interaktive Tafel gibt die Möglichkeit das Tafelbild oder mehrere Tafelbilder zu Hause vorzubereiten, sie abzuspeichern und jederzeit aufzurufen. Bei der herkömmlichen Tafel muss man sich diese Zeit entweder vor dem Unterricht oder von dem Unterricht nehmen, was dann sowohl für den Lehrenden, als auch für die Lernenden ungünstig ist. Piepho (Reinfried 2007: 417) war der Meinung, dass man die Flächen der herkömmlichen Schiebeklapp -Tafeln im Fremdsprachenunterricht einteilen sollte. Eine Fläche sollte z.B. für Assoziogramme benutzen werden, die andere für Wortschatzarbeit und die dritte für Grammatik. Das ist alles mit der interaktiven Tafel auch möglich. Der Vorteil liegt darin, dass man die Aufgaben und Übungen zu Hause vorbereitet, sie aufruft und dann noch nur die Lösungen an die Tafel schreibt. Die gelösten Aufgaben können gespeichert werden und mit ihnen kann man in der nächsten Stunde oder in einem anderen Stundenabschnitt weiterarbeiten, oder sie mit einer anderen Gruppe bearbeiten.

3.2. Visualisierung

Einer der bedeutendsten Vorteile der interaktiven Tafel ist die Visualisierung von Schriften, Grafiken und Übersichten. Dieses ermöglicht den Lernenden, sich besser zurechtzufinden und dem/der Lehrenden, ein genaues und gezieltes Tafelbild vorzubereiten.

Die Funktion der Tafel, die Handschrift in eine Druckschrift umzuwandeln, kann bei der Kontrolle der Lösungen sehr hilfreich sein. Sehr oft ist die Handschrift der Lernenden, aber auch der Lehrer undeutlich, was das Abschreiben von der Tafel erschwert, aber auch die Kontrolle, der in Gruppenarbeit oder Einzelarbeit gelösten Aufgaben.

Sehr oft werden im Unterricht Graphiken, Tabellen, Landkarten usw. benutzt. Die kann man mit der Tafel beliebig vergrößern und selbstständig noch beschriften. So kann man mit einer Landkarte, die auch im Fremdsprachenunterricht sehr oft eingesetzt wird, interaktiv an der Tafel arbeiten.

Die Präsentation der Ergebnisse mit der Tafel ist auch erleichtert. Mit der Hilfe eines Scanners können sie direkt aus dem Heft oder vom Papier an die Tafel übertragen werden. Das spart Zeit, Material und ist für alle Lehrende von ihrem Platz aus sichtbar.

3.3. Berücksichtigung der Lerntypen

Die interaktive Tafel gibt die Möglichkeit die Lernstile der Lernenden zu berücksichtigen „indem spezifische Zugangsweisen (auditiv, sensorisch, visuell) aufgabenbezogen variiert werden können" (Hauke 2011: 6). So können textuelle Inhalte mit Bildern, Ton oder Film unterstützt werden. Dieses aktiviert gleichzeitig mehrere Sinneskanäle und ermöglicht einen effizienten Lernerfolg.

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Die Präsentationen kann man vor dem Unterricht vorbereiten. Voraussetzung dafür ist, dass man eine Software außerhalb des Unterrichts frei benutzen kann und zwar auf dem eigenen Computer.

3.4. Aktualisierbar

Die Unterrichtsmaterialien können mit der Hilfe der interaktiven Tafel fast täglich aktualisiert werden. Nachrichten aus der Wirtschaft können in den Unterricht einbezogen und die im Lehrmaterial angegebenen Angaben aufgefrischt werden. Das gilt besonders für die statistischen Angaben. Die, die in den Lehrmaterialien angegeben sind, sind meistens veraltet. Mit der interaktiven Tafel kann man die aktuellsten Angaben direkt aus dem Netz zeigen und sie mit denen im Lehrmaterial vergleichen, Prognosen für die weitere Entwicklung geben usw.

3.5. Ersetzt nicht nur die herkömmlichen Tafeln, sondern auch das OHP, Fernesehapparat, CD-DVD Player

Auf der interaktiven Tafel kann man wie auch auf einer herkömmlichen Tafel mit der Hand schreiben, allerdings braucht man keine Kreide und keinen Schwamm. Die Handschrift kann sehr schnell in eine Druckschrift konvertiert werden.

Mit der interaktiven Tafel kann man auch Power Point Folien benutzen und sie auch mit der Hand während der Präsentation ergänzen (wie beim herkömmlichen OHP).

Die interaktive Tafel hat einen integrierten CD-DVD Spieler und man kann hier Audio- oder Videodateien problemlos abspielen lassen.

Der große Bildschirm ermöglicht den Lehrenden einen Film oder Bildmaterial angenehmer anzuschauen, als mit einem Fernsehapparat.

3.6. Die Interaktivität selbst

Meiner Meinung nach ist dieses der größte Vorteil der Tafel. Die o.g. Funktionen sind auch mit anderen Medien erreichbar, aber die aktive Oberfläche der Tafel ermöglicht es, dass man im Unterricht Bilder und Objekte verschieben kann, dass die Lernenden auch selbst an der Tafel handelnd üben können, was mit dem Lehrwerk oder mit dem gedruckten Lehrmaterial nur begrenzt möglich ist. Der/die Lehrende können gemeinsam mit den Lernenden ein Tafelbild während des Unterrichtes entwickeln. Dieses erhöht die Motivation und macht den Unterricht interessanter und dynamischer.

4. Die Nachteile der interaktiven Tafel

Die interaktive Tafel ist ein Ersatz für die Medien, nicht für den Lehrenden. Sie ist also nur als ein Mittel, mit dem man den Unterricht effizienter gestalten kann zu verstehen. Dieses bedeutet, dass man die Tafel vernünftig einsetzen soll. In einer Stunde sollte die Tafel nicht mehr als 20 Minuten von dem Lehrenden benutzt werden. Das ist die Zeit, die man für einen Input oder für eine Präsentation braucht. Danach sollte auf der Tafel mit den Lernenden eine Aktivität durchgeführt werden, oder sie sollte beiseite gelegt werden und man sollte mit anderem Material arbeiten. Alles andere wäre übertrieben und verbirgt die Gefahr aus der Stunde eine „One –Man –Show" (Müller 2011: 20) zu machen.

1. Die Anaschaffungskosten sind sehr hoch;

2. Die interaktive Tafel verbraucht viel Energie;

3. Die Beamerlampen sind sehr teuer;

4. Das Schreiben an der Tafel nimmt Zeit in Anspruch;

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5. Die Schreiboberfläche ist begrenzt;

6. Das Einsetzen der Tafel im Unterricht braucht eine Schulung der Lehrkraft, ansonsten besteht die Gefahr, dass sie als eine herkömmliche Tafel benutzt wird.

Trotz all dieser Nachteile, war ich der Meinung, da eine interaktive Tafel an meiner Fakultät schon vorhanden ist, dass man sie im Unterricht wenigstens ausprobieren soll. So habe ich eine Blockstunde mit der Einbindung der interaktiven Tafel zum Thema „Grundlagen der Ökonomie" vorbereitet.

5. Beschreibung der durchgeführten Stunde

Stundenplan

Zeit:	4 x 45 Minuten (zwei Blockstunden)
Studentenanzahl:	12
Thema:	Grundfragen der Ökonomie – Bedürfnisse und Bedarf
Sprachniveau :	A2 + bis B1 im Bereich Fachsprache – Wirtschaftssprache
Ziel:	Die Studenten können am Ende der Blockstunden in der deutschen Sprache den Unterschied zwischen Bedürfnissen und Bedarf erklären

1.	**Einstieg in die Blockstunden** ○ Erklärung der einiger Funktionen der interaktiven Tafel ○ Kalibrierung	
2.	**Aufgaben vor dem Lesen** Einstieg in das Thema ○ Tafelbild mit Objekten ○ Arbeitsblättern mit demselben Tafelbild	Die Studenten lösen die Aufgabe in Zweiergruppen auf ihren Plätzen. Danach kommen sie nacheinander zu der Tafel, verknüpfen die Objekte und erklären warum sie eben diese zwei Objekte verbindet haben.
3.	Diskussion im Plenum aufgrund der Fragen auf dem Arbeitsblatt	
4.	**Aufgaben während der Lesens** *Aufgabe 1* Das in die richtige Reihenfolge Bringen eines zerschnittenen Textes	Die Studenten lösen die Aufgabe in Dreiergruppen.
5.	Das in die richtige Reihenfolge Bringen eines zerschnittenen Textes	Das Tafelbild wird zweiseitig gezeigt. Auf der linken Seite sind die Textteile. Sie sollen in die richtige Reihenfolge nach den Vorlagen auf der anderen Seite des Tafelbildes mit Fingerschieben gebracht werden.
6.	*Aufgabe 2* Stimmt die Aussage mit dem Text überein oder nicht?	Nachdem die Studenten die Aufgabe als Einzelarbeit auf ihren Plätzen gemacht haben, erfolgt die Kontrolle an der Tafel.
7.	*Aufgabe 3* Beenden Sie die Sätze!	Die Aufgabe wurde zuerst auf den Plätzen als Einzelarbeit ausgeführt, danach erfolgte die Kontrolle an der Tafel.
8.	*Aufgabe 4* Lückentext	An der Tafel wird der Text mit farbigem Hintergrund und den Lösungen in derselben Farbe gezeigt. Die farbige Hintergrundfläche wird für die Kontrolle gelöscht.

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9.	**Aufgaben nach dem Lesen** *Aufgabe 1* Beantworten von Fragen mit vorgegebenen Antworten	Die Aufgabe wurde im Plenum gemacht.
10.	*Aufgabe 2* Ordnen Sie zu!	Die Aufgabe wird zuerst auf dem Platz in Zweiergruppen gelöst und danach an der Tafel. Objekte werden verknüpft.
11.	*Aufgabe 3* Vorzeigen des Kurzfilmes – Grundfragen der Ökonomie mit Aufgaben	
12.	Besprechung der Lösungen im Plenum	
13.	*Aufgabe 3* Schreiben Sie einen Dialog zu der folgenden Situation: Sie haben Besuch aus Wien. Es handelt sich um ihre Verwandten, die eine Tochter haben, die, die Wirtschaftsschule in Wien besucht. Sie spricht kein Serbisch. Sie lernt gerade über die Grundfragen der Wirtschaft und bietet Sie ihr den Unterschied zwischen Bedürfnissen und dem Bedarf zu erklären. Welche Fragen stellt Sie? Wie lauten Ihre Antworten?	
14.	Vorführen des Dialogs - Rollenspiel	

6. Evaluation der Blockstunden

Die Blockstunden verliefen in einer angenehmen und dynamischen Atmosphäre. Die Studenten waren sehr Engagiert und führten ihre Arbeiten mit großem Interesse aus.

Zu dem Einsatz der Tafel habe ich folgende Bemerkungen:

1. Das Schreiben an der Tafel ist viel schwerer als an einer herkömmlichen Tafel. Da braucht man nicht nur Geduld und Zeit, sondern vor Allem Übung, was sowohl für die Lehrkraft, als auch für die Lernenden gilt. Die Sätze die ergänzt sein sollten, konnte man ebenso auf einer herkömmliche weiße Tafel zeigen und sie mit einem üblichen Stift an der Tafel ergänzen. Dazu braucht man keine interaktive Tafel.

2. Die Kontrolle des Lückentextes durch den farbigen Hintergrund und der Lösungen in derselben Farbe kann ebenso mit dem Beamer und der Wand durchgeführt werden. Dazu braucht man ebenso keine interaktive Tafel.

3. Für das Vorzeigen des Films eignet sich der Bildschirm der Tafel sehr gut. Hier handelte es sich um ein Seh-Hörverstehen und da die Tafel ihre eigene Lautsprecher hat, ist das Vorzeigen eines Filmes oder das Vorführen eines Hörtextes hiermit viel einfacher, denn bei den mobilen Beamern muss man noch die Lautsprecher mitbringen.

4. Am besten eignet sich die Tafel für die Aufgaben, die eine Verbindung von Objekten vorsieht. Diese Funktion hat keine andere Tafel. So können an der Tafel Bilder mit Text oder Textabschnitte mit Titel verbunden werden oder Textabschnitte in die richtige Reihenfolge gebracht werden usw. Man kann auch mit zweisprachigen oder einsprachigen Wortlisten arbeiten.

5. Man kann ganz schnell von einer Seite bis zu der anderen springen, Lösungen der Gruppe speichern und sie mit dann einer anderen Gruppe weiter bearbeiten.

Die genannten Funktionen sind nur ein kleiner Teil der Funktionen der interaktiven Tafel, die man im Software Smart Notebook ausführen kann. Die Software bietet noch einige Möglichkeiten, die hier noch nicht ausprobiert wurden wie z.B. das Einsetzen des Würfels für Wortschatzübung

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oder des Timers für die Einprägung der Uhrzeiten. Ebenso verfügt diese Tafel über eine eigene Software für PowerPoint-Präsentationen. Diese wurde hier auch nicht eingesetzt. Um alle diese Funktionen kennenzulernen und sie anzuwenden braucht man viel Zeit, was uns Lehrern am meisten fehlt. Trotzdem lohnt es sich ab und zu eine Stunde mit der Einbindung der Tafel vorzubereiten und durchzuführen. Dieses zeigen auch die Ergebnisse der Umfrage, die ich nach der Stunde unter den Studenten durchgeführt habe.

7. Die Meinung der Studenten

Die Umfrage umfasste fünf offene Fragen in der Muttersprache:

1. Wie haben sie sich im Laufe der Stunden gefüllt?

2. Welcher Teil der Stunden gefiel Ihnen am meisten? Warum?

3. Welcher Teil der Stunden gefiel Ihnen nicht?

4. Sollte man die interaktive Tafel auch weiterhin in unserem Unterricht benutzen?

5. Haben Sie etwas besser gelernt in dieser Stunde, als in den herkömmlichen Stunden?

Die Antworten lauteten:

Frage 1

.....gut, angenehm, es war sehr interessant, wir haben viel mehr an der Stunde teilgenommen

Frage 2

.... als wir die Tafel benutzten, das Bewegen von Objekten, Schreiben, das Schreiben und Vorführen des Dialogs, die Arbeit in Gruppen, das Zusammensetzen des Textes

Frage 3

Die Zeile blieb leer

Frage 4

*Fast alle Antworten lauteten einfach **ja** eine **zeitweilig***

Frage 5

Ja, weil

......wir die Gelegenheit hatten die Wörter selber an die Tafel zu schreiben, die Lösungen zu sehen, den Video zu sehen, es interessant war, wir motiviert waren.

Aus allen diesen Antworten, aber auch aus meiner eigenen Beobachtung und Erfahrung, konnte ich die Schlussfolgerung ziehen, dass die Einbindung der interaktiven Tafel für meine Studenten eine neue, interessante Erfahrung war, dass sie mit viel Motivation die Aufgaben gelöst haben und am Ende der Stunden das Ziel tatsächlich erreicht haben. Sie haben mit ihren Dialogen gezeigt, dass sie den Unterschied zwischen *Bedürfnissen* und *Bedarf* erklären können, vor Allem aber, dass sie zu diesem Können auf eine, für sie fast spielerische Art und Weise gekommen sind.

8. Schlussbemerkung

Die interaktive Tafel ist ein neues Medium, das noch im Unterricht seinen Platz sucht und in einigen Jahren auch finden wird. Die Vorteile der Tafel sind ihre Interaktivität, die man bis jetzt mit keinem Medium erreichen konnte, und die Tatsache, dass sich mehrere Medien in einem befinden, was Zeit und Platz im Unterricht spart. Die Tafel ist aber keine Zauberkiste. Sie kann uns die Unterrichtsvorbereitung nicht herauszaubern, sie kann die Lehrkraft nicht ersetzen und den Lernenden das Wissen und Können nicht einfach auf die Hand legen. Sie ist hier, um der Lehrkraft die Unterrichtsgestaltung zu erleichtern. Neben dieser Tafel soll weiterhin im Hörsaal

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die herkömmliche Tafel stehen. Sie braucht man wegen des Schreibens, denn diese Funktion ist noch nicht dermaßen entwickelt, dass man sie effizient im Unterricht einsetzen kann. Sie beansprucht viel Zeit, Übung usw. Die Funktion des Schreibens sollte von den Herstellern weiter entwickelt werden.

Was die Anschaffungskosten betrifft, die Tafel ist heutzutage noch teuer. Aber, wie es der Fall mit der ganzen Technik ist, wird sie bestimmt vom Tag zu Tag billiger. So wird es sich eines Tages dann sicher lohnen statt Fernsehapparat, Beamer, Leinwand, Lautsprecher etc. ein einheitliches Medium anzuschaffen. Für diese Zeit sollten wir uns als Lehrer schon heute anfangen vorzubereiten.

Heute braucht die Tafel spezielle Softwares, die auch teuer sind. In einigen Jahren werden sie auch billiger und bedienungsfreundlicher sein.

Da die junge Generation heute schon mit Handy und Computer aufwächst, ist für sie jedes technische Medium eine Selbstverständlichkeit. Sie schreiben viel leichter eine SMS als mit Bleistift auf Papier. Diese Tatsachen sollte man auch berücksichtigen, wenn man das Einsetzen von Medien im Unterricht plant. Natürlich, wenn die Fakultät gut ausgestattet ist, alle Geräte noch funktionieren, sollte man sie auch weiterhin benutzen. Eine Tafel, die irgendwo in der Ecke steht, braucht man tatsächlich nicht. Wenn die Ausrüstung jedoch schon veraltet ist und neue Anschaffungen fällig sind, sollte man darüber nachdenken, ob es nicht sinnvoll wäre, einige Räume mit der interaktiven Tafel auszustatten.

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A digital revolution in the ESP classroom? The potential of apps, podcasts, e-mags, and social networks revisited

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Abstract. The digital revolution provides users with almost unlimited information access to English sources anytime, anywhere. What effects does this have on the teaching and learning of English for Specific Purposes (ESP) in the classroom and in self-directed study? It is the aim of this contribution to briefly examine the potential of online dictionaries, e-learning platforms, e-magazines, podcasts and other applications for developing communication skills in ESP. The contribution starts by evaluating the expectations and needs of the learners. It then briefly introduces the program structure of ESP courses at the University of Applied Sciences in Zwickau (Germany) focusing on English for Computer Science. In this subject, students are particularly prone to use state-of-the-art technology and material. Therefore, some authentic means of communication used in the classroom and for self-directed study are presented. Students highly ranked the turn to an increasing number of authentic language activities based on digital material because this also turned out to be applicable during lectures and seminars at the domestic institution and when studying abroad. Thus, ESP lecturers are challenged to reconsider traditional schedules and incorporate more practice-oriented, media-based assignments to maintain students' interest and to achieve long-term ESP learning outcomes.

Keywords. E-learning, podcast, e-magazine, app, English for specific purposes, students, lecturers.

1. Introduction

1.1. Technical developments and their effects

The digital revolution and the emergence of an increasing number of mobile devices allow users access to almost unlimited sources of information, from authentic texts to videos anytime, anywhere. Gadgets such as ultrabooks, tablets and smartphones as well as fast Wi-Fi availability in class make information retrieval an easy and challenging task for learners. Even smaller devices will penetrate the market in the forthcoming years such as smart watches and Google Glass with their augmented reality functionality. They will probably change the way of acquiring knowledge and practising languages entirely due to their unlimited Internet access. They will also tremendously change the structure of English classes and other study programmes. In the future, students will have much more opportunities and freedom to apply their language skills in social media, blogs and other networks. They can retrieve real-time information and enter yet unknown areas. This will immensely spur their motivation to learn and use a foreign language, in particular English. From the teaching perspective, on the other hand, the technical developments will prompt ESP lecturers to not only familiarize with modern devices but also to design new concepts for their course structure and for testing the acquired knowledge. The digital revolution in the classroom has only begun. To provide some support to ESP teachers in this endeavour, this paper briefly examines the state-of-the-art in the field, seen from a German ESP teacher's perspective. The paper provides some insight into currently available digital materials and their practical use.

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1.2. Students' expectations and needs

First of all, it is important to underline that the learning outcome is highly dependent on the motivation of students to acquire knowledge and language skills. In order to evaluate students' major motivation and objectives, Werthebach (2012) recently performed a survey on the expectations of technical students from their English language classroom. The results reveal that the acquisition of new specialist vocabulary (85%) is still the most commonly mentioned learning target of students. Moreover, they expect a proper preparation for the English exams (75%) (almost ignoring that the acquired foreign language skills are useful for their professional career), the development of writing skills (57%) and repetition of grammar (58%). Their major objectives include: (1) Fluency in speaking (71%); (2) Understanding LSP texts (16%); (3) Improving listening skills (10%). Considering these expectations and the future professional needs (research tasks, company communication, business deals), work in the classroom needs to be highly authentic, up-to-date, purposeful, motivating, interactive and above all also entertaining. Such sophisticated goals represent a really challenging task for ESP lecturers, first because there is a limited schedule for teaching and second, the subject matter to be taught is highly specific and requires some insight into possible interaction and communication settings as well as current developments. What digital material can be applied in this context and how can it serve the needs of both lecturers and students? This question will be addressed in the following chapters.

1.3. ESP programmes at the University of Applied Sciences Zwickau

The University of Applied Sciences Zwickau offers ESP modules for almost all of the approx. 35 study programmes basically referring to natural sciences and technology. The basic course is mainly scheduled for 120 hours of teaching in one term, which in fact means one third on-site teaching hours and about two thirds self-instructed study. The language level taught in the basic programme targets intermediate language proficiency (B2 according CEFR). The examinations comprise of an oral exam (professional presentation on a chosen subject, 10-15 minutes per person) and a written test (90 minutes) including subject-relevant vocabulary tests, general academic English as well as grammar and an ESP reading assignment. When designing ESP courses, several components need to be considered. In order to boost both the motivation of the students and to meet the requirements of the professional practice, the following aspects need to be incorporated: Academic English (e.g. listening to lectures and talks), Professional English (e.g. subject knowledge on software and hardware, interaction skills to present and defend a subject-specific topic during conferences or meetings), Business English (e.g. skills to manage business-related tasks, e.g. writing e-mails, making phone calls) and Intercultural Communication, since the majority of the students will work at some point for global players (see Fig. 1). Moreover, both contents and skills are to be developed. Because of this complexity, which is hard to handle in just one term, some elective courses were introduced basically focusing on the ability to speak about a subject topic and to write a longer piece of argumentation (professional essay). The language level target of the elective courses is B2+/C1 level (according to CEFR). Learning outcomes show that this combination of compulsory and elective training lets students better master language requirements in both their studies and in professional activities. Class surveys among computer science students on the effectiveness of their courses revealed that they would like to use more digital opportunities to acquire knowledge and practise it. Fig. 1 summarizes the interconnection between the required ESP course elements.
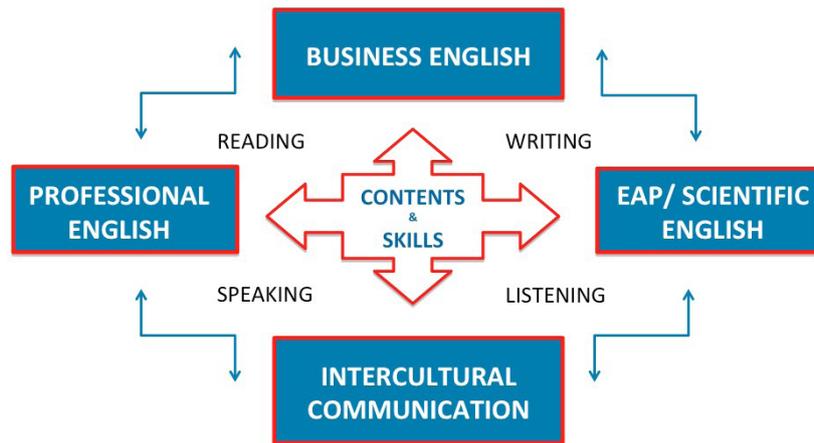
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Figure 1: Overview of required course components

1.4. Course specification for Computer Science students

The first-term compulsory English course for B.A. students of Computer Science focuses on topics relating to computer hardware and software, operating systems, programming languages, software applications, virtual reality, artificial intelligence and mobile computing. Moreover, students deal with general science topics such as the use of numbers, symbols and graphs as well academic issues, for example the study at the University of Applied Sciences in Zwickau. The business-related aspects briefly refer to the development of letter and e-mail writing skills, the preparation of job applications and interviews for the internship as well as the presentation of a project and the writing of an abstract/ summary.

The third-term elective module spurs the development of productive skills, in particular the writing of an essay on a current topic in computer science as well as on the short presentation of a stated opinion in form of a science slam.

Finally, the module Global Business and Project Management in English (which is part of the Master's degree in Computer Science) finally targets a solid level C1+ (CEFR). On that level, students should be able to properly speak and write about subject-specific items as well as complete business-related professional assignments.

2. Overview of digital material

2.1. Online dictionaries

Formerly, there has often been a debate on which type of dictionary to be used in a language classroom – monolingual or bilingual. Today, online dictionaries and apps are a very valuable source for students to get proper and real-time information on the meaning of words both from a bilingual or monolingual format. The developed general online dictionaries for English (e.g. the Oxford Advanced Learners Dictionary, http://oald8.oxfordlearnersdictionaries.com) as well as the bilingual dictionaries like (dict.cc, www.dict.cc) and text-based sources (e.g. linguee.com, www.linguee.com) prove to be very comprehensive for fast information retrieval on terms and usage. Subject-specific sites, e.g. the German Computer Dictionary (see http://www.computer-woerterbuch.de/) or English for Computer Science Words (see http://cs.joensuu.fi/kielikurssit/englanti/compukeyword.html), are also a sound reference for developing terminological knowledge, for defining concepts and for learning about context use of terms. Such continuously updated and improved dictionaries can now also be accessed from mobile devices, so it will be easy to retrieve the usage pattern of a word (e.g. meaning, grammar features, collocations and pronunciation) on the go.

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2.2. Applications and e-learning platforms

Traditional ESP teaching has basically been relying on English textbooks for the subject to be taught, on script material and journal articles. For some years now, the material of publishers has successively been accompanied by workbooks and CDs. In Germany, publishing houses like Cornelsen, Klett and Hueber have developed short course series of textbooks for many application areas (see respective websites). More recently, these materials have been supplemented by online worksheets and/ or audio/ video files in MP3 or MP4 formats. However, the majority of teachers and students would like to use more authentic and topical materials in the classroom without the need of time-consuming searches on the Internet and developing script material, which may infringe copyright law. So there were a couple of good reasons to develop e-learning platforms and apps that support both teachers and learners in their daily routine.

A brief i-Tunes search for „English language programmes" available online revealed more than 100 applications on various language levels and for a multitude of target audiences. These prove to be valuable add-on materials for self-instructed study and exercising.

Moreover, several types of e-learning platform have evolved. In Germany, it is in particular Moodle and OPAL (developed by a Chemnitz-based company) that took the lead. However, the development and implementation of online course programmes and assignments or hybrid learning arrangements in such contexts requires not only profound technical skills of the lecturers but also a lot of time. Moreover, test scenarios and control mechanisms need to be implemented to make it a learning material used by the students with proper motivation and self-instruction. Once the program is finalised, it will already be outdated to some point, in particular in subjects like Computer Science. So continuous updating is required on the part of the programme designers and lecturers. Nonetheless, the achieved standard is fairly high. Let us examine two examples of web-based courses:

Professor Uwe Bellmann (HTWK Leipzig) was one of the first who developed a web course following a very systematic approach. E-xplore Technical English addresses the needs of students in technical subjects on the language level B1 targeting C1 and offers plenty of opportunities for self-instructed study and exercising. The course includes both skill-related assignments as well as content-based text material. Fig. 2 provides a general overview of topics covered (free access). Moreover, there are units that require login data and paid consistent self-study.

Figure 2: Web course e-Xplore Technical English

Professor Christine Sick (HTW Saarbrücken) and EuroKey Software GmbH developed the online programme TechnoPlus English focusing on both engineering topics taken from Mechanical and Automotive Engineering, Electrical Engineering, Computer Science and Communications Engineering, Mechatronics and Sensor Technology, Biomedical Engineering and Civil Engineering. Fig. 3 provides an overview of text material used in the programme (Source: http://www.technoplus.info/konzept.htm).

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Figure 3: TechnoPlus (screenshot taken from: http://www.technoplus.info/konzept.htm)
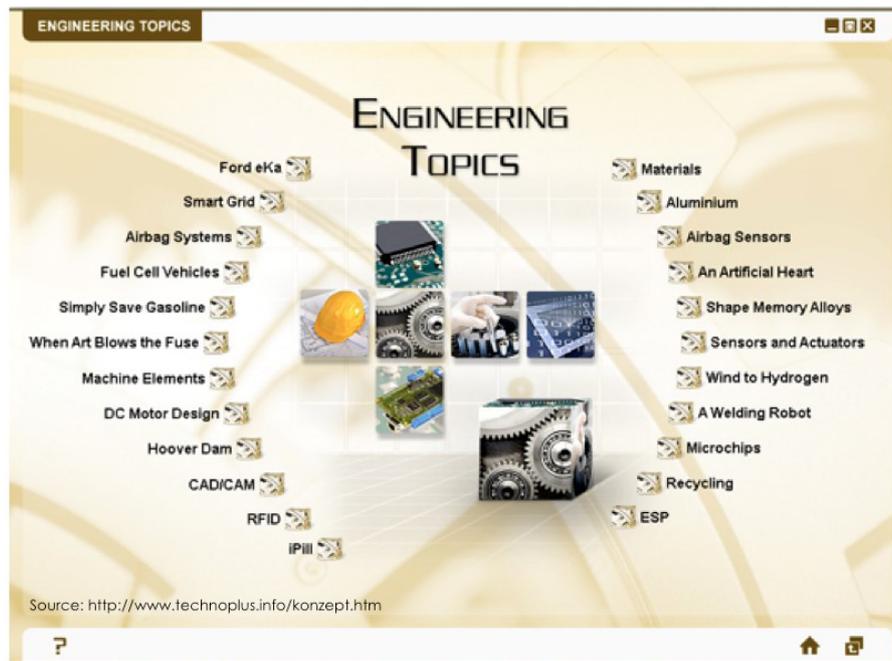
Apart from the provided contents, the programme TechnoPlus English also considers business-related issues, for example Enquiries, Arrangements, Negotiating, Meetings, Order Processing, Presentations, Applying for a Job. Fig. 4 is a screenshot taken from the Chapter Arrangements dealing with telephone calls. A demonstration unit (Hoover Dam, see demo tour at http://www.technoplus.info/online_demo.html) illustrates the approach. A video comprehension task introduces the unit, then comprehension exercises are provided as well as different kinds of vocabulary exercises and grammar trainings. This particular unit also focuses on numbers and measurements.

Figure 4: TechnoPlus (screenshot taken from: http://www.technoplus.info/konzept.htm)

The two examples presented are excellent evidence for the high quality standard of e-learning material achieved. Both programmes include topical and challenging assignments for the students of technical subjects. The offered assignments can be used both in-class or in self-instructed study.

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2.3. E-magazines and newsletters

In order to supplement the traditional and new e-learning resources for ESP teaching, lecturers may refer to material provided by e-magazines and e-newsletters. Very valuable sources in this field include:

1. *Scientific American* (www.sciam.com) and *MIT Technology Review* (http://technologyreview.com) with up-to-date reports on scientific progress in many technological fields;

2. *How it Works Magazine* (http://www.howitworksdaily.com/), focusing on developments in technology, science, history, environment, transport and space;

3. Engine – Englisch für Ingenieure (http://www.engine-magazin.de/engine-Log.htm) including video and audio sequences, a blog and reports on recent technological developments, technical term lists, vocabulary and grammar exercises as well as country portraits and intercultural case studies.

4. E-Newsletters of professional magazines are also an interesting resource of up-to-date developments. Daily or weekly updates on very specific topics are provided, for example by: TechRepublic (Daily Digest), MIT Technology Review and Solid State Technology (MEMS). Moreover, blogs accompany many technology and company websites, which also may be applied for interaction between ESP lecturers and experts or even between students and experts. However, blogging has not yet been used too often in my ESP classrooms because students do not want to leave their digital fingerprint on the web and sometimes do not dare to discuss critical issues on the Internet.

2.4. Podcasts and webinars

Students sometimes complain about the "incomprehensibility of authentic English". They are often not familiar with the various English dialects and accents. Therefore, podcasts and video files represent a useful tool to develop both awareness for the varieties of English and for training listening comprehension skills in a variety of fields and communication scenarios. The journal *Scientific American* (ww.sciam.com), for example, offers several podcasts on their website that only last about 60 seconds: *60 Second Tech, 60-Second Science, 60-Second Earth, 60-Second Mind* as well as *Science Talk*. These short sequences of up-to-date information can effectively be used in class to check listening comprehension on the one hand but also to develop own speaking fluency on the other (for example, when the text needs to be back-read for time). Short statements are an ideal stimulus for discussions or for writing a short comment (e.g. for a blog entry).

The more advanced students can also refer to longer podcasting sessions. *IT Conversations* (http://web.archive.org/web/20130729200341id_/http://itc.conversationsnetwork.org/), for example, provided interesting talks and interviews on developments in the field of Computer Science. Unfortunately, the website does not exist any longer but one may refer to a rich text and file archive. *TED Talks Ideas Worth Spreading* (http://www.ted.com/talks?lang=de) is another interesting source to be considered, providing access to talks and lectures on specific technological advancements.

BBC Click and other broadcasting stations offer weekly series on technology and engineering topics so that teachers can easily retrieve interesting audio/ video material for use in-class or self-instructed study.

Webinars are increasingly being offered by professional organizations and educational institutions. Since the number of lectures in English is still low at my domestic institution, it will be a very good opportunity to use webinars as an additional instrument for teaching/

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learning subject content and for training listening comprehension in English. After introducing the genre in the classroom, students are asked to attend webinars on their own and to check their understanding with the help of comprehensibility assignments. Moreover, the interactive character of this genre will also spur real professional interaction of students. For this purpose, students should be prepared properly to discuss current issues and respond to requests.

2.5. Social networks and blogs

The majority of students is affiliated with one or the other social network these days. However, computer students are a little hesitant in this respect. They often do not want to be followers of Facebook, LinkedIn or other social networks because they are in particular aware of the benefits and drawbacks of such media use. They, of course, also benefit from real-time communication with many participants in order to exchange their views upon specific issues. Networks are often used to retrieve information fast or to get rapid feedback on study-related issues. However, the language used in this context is often of poor standard, too colloquial and shortened with a number of mistakes. So the overuse of such communities can also spoil the achieved foreign language quality, in particular in terms of writing habits and speaking competency. Therefore, lecturers should consider a careful and purposeful use of social networks without anonymous and unqualified responses. An alternative to established broad social networks is TANDEM work, that means, forming learning partnerships on-site between native and non-native speakers/ students of a language or institutionalized exchange networks between domestic university and cooperation partners abroad.

3. Conclusion

This paper introduced some useful digital resources for teaching in the ESP classroom and briefly touched upon their enormous, yet unexplored potential. Online dictionaries allow easy access to the meaning of words and terms as well as to their proper use and pronunciation. They are also available on mobile devices and can therefore be used anywhere, anytime. The many applications available on the go and the developing e-learning platforms as well as podcasts and webinars offer plenty of opportunities for the student learners to acquire new knowledge and to train reading, listening and speaking skills in almost authentic situations. Moreover, social networks and blogs offer plenty of opportunities to enter semi-professional and professional communication. The lecturers have a portfolio of new materials at their disposal to supplement traditional teaching and to better prepare students for their professional career. Moreover, e-magazines and professional newsletters give lecturers and students an insight into the development of technology so that they can interact on challenging topics in the classroom and organize an efficient and motivating self-instructed study process. Social networks and blogs can be used for authentic communication, which can motivate students even more to practise their acquired language skills.

The multitude of opportunities offered by the Internet challenges ESP lecturers to reconsider traditional schedules and incorporate more practice-oriented, media-based assignments to maintain students' interest and to achieve long-term ESP learning outcomes. This will also have a tremendous impact on the type and contents of English examinations. The digital revolution of the classroom has only started and it is up to the lecturers and students to make it a profitable reality!

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Taking a more active role in the classroom through oral presentations

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Abstract. This paper illustrates the results of a study aimed at investigating EFL students' attitudes towards group work. The data were collected through the administration of a questionnaire to 125 participants attending a Business English for Academic Purposes course at the University of Calabria, Italy. In particular, the survey aimed at verifying the usefulness of group work and task-based activities (oral presentations) in large mixed ability groups, the reasons for possible reticence towards working in groups, and the extent to which participants found preparing and delivering oral presentations effective in improving their language skills. Results indicate that LSP oral presentations are beneficial to students for both their study and work needs since they replicate real-life tasks. Moreover, working in groups can help students improve their language competence, overcome their reluctance to actively participate in class and enhance their study as well as social skills.

Keywords. Collaborative learning, ESP, group work, oral presentations, task-based learning.

1. Theoretical framework

The diversity of needs of English language learners has long been acknowledged (Tarone & Yule 1989) and the focus on such diversity has led to the encouragement of the adoption of a learner-centered or communicative approach in EFL classrooms in order to meet these needs. One way to achieve these goals is to focus on students' potential for interdependent study through group work, creating thus a suitable environment for students with different proficiencies and learning styles. Indeed, various scholars (Long & Porter 1985, Johnson & Johnson 1991, Nunan 1992, Davis 1997) have emphasized the value and efficacy of group work and cooperative learning. Although there are different definitions of cooperative learning, the basic elements are the same for all. Cooperative learning is a system of learning and teaching techniques in which students are able to interact with and learn from each other as well as from the teacher (Olsen & Kagan 1992). Moreover, as suggested by Vygotsky (1986) working in groups may help students fill the gap between what they could do on their own and what they could accomplish working with others, a process which is known as 'scaffolding'.

Group work has become an increasingly popular classroom technique used to facilitate second language (L2) acquisition (Long & Porter 1985, Pica & Doughty 1985, Davis 1997). As with any teaching technique and strategy there are various advantages and disadvantages of working in groups. Cooperative, small group learning is a pedagogical practice that provides positive benefits to students' learning, motivation and relationships with others in all curriculum areas (Gillies 2003). Moreover, in cooperative learning situations each learner is fundamental to the group, since everyone is responsible for achieving the group's goals as well as offering peer support (Donato 1994, Jimenez & Ruffolo 2010). However, while there is a great deal of existing research on both the benefits and the types of cooperative learning (Johnson & Johnson 1988, Slavin 1995, Gillies 2003), studies on the disadvantages of and students' reticence to working in groups are less extensive.

According to a study conducted by Martine (2006), both teachers and students are concerned about the drawbacks of group work. In fact, the study revealed that although teachers recognize the validity of cooperative learning, they also worry about the limitations. These include the fact that in single language classrooms group work may encourage students to speak in their L1,

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which may lead to defeating the whole purpose of improving the foreign language; or the risk that students may learn incorrect English from the other students. Moreover, studies have shown that students are not always willing to work in groups for several reasons (see Horwitz, Horwitz & Cope, 1986; Cheng, 2000; Martine, 2006). For example, some students believe that this type of work will not provide any help for exam preparation, or that the workload will not be carried out equally among the members of the group. Furthermore, students' reluctance to participate in group work may depend on cultural or psychological traits, but it may also regard other factors, such as teaching methodology, the way tasks are formulated, the topics chosen and the students' own perceptions of being active in class (Cheng, 2000). Moreover, other factors that may cause students' reticence to speak in class or may lead to foreign language anxiety are communication apprehension, test anxiety, and fear of negative evaluation (Horwitz, Horwitz & Cope, 1986). Furthermore, some studies reveal that most students tend to focus more on accuracy than on fluency as this would help them avoid making mistakes or experiencing loss of face (Bond, 1991; Mao, 1994), leading thus to an increase in the reluctance to actively participate in class.

Much has been written on Asian EFL learners' passivity and reticence to speak in class (Xiao 2006), claiming that this behavior "results from cultural attributes of Asian societies" (Cheng 2000:1). However, foreign language learning is a complex process, which strongly depends on learners' individual characteristics, whether Eastern or Western, and their different social, cultural and educational background. A decisive cause of students' reticence to work in groups and actively participate in classroom activities is low language proficiency. "Language difficulty is a significant factor in inhibiting effective communication between NNS [non-native speaker] students and their NS [native speaker] teachers and counterpart" (Jones 1999:257), as well as between low proficiency NNS students and advanced NNS learners. Moreover, students are reluctant to speak in class or in group because of their fear of making mistakes in front of the class, which may depend on, among other factors, the fact that students have focused more on developing receptive skills rather than the productive ones (Tsui 1996).

One way to overcome students' reticence is to engage them in task-based communicative activities which allow them to rehearse speaking in public while at the same time supporting identity development through familiarization with the routines of the academic community or work field (Morita 2000). Among the various task-based communicative activities that can be used in class, oral presentations may be a solution to this specific problem since the work carried out by students leads to purposeful language use (Sheppard & Stoller 1995, Jimenez & Ruffolo 2010). Oral presentations specifically in English for Specific Purposes (ESP) settings can be an effective tool as they provide authentic language use, authentic tasks, focus on language at the discourse level and learner centeredness (Sheppard & Stoller 1995), which are at the basis of the agenda for Language for Specific Purposes (LSP) analysis and instruction outlined by Swales (2000). Moreover, this task can lead to the actual development of the skills required for participation in the academic and work community (Beaufort 2000, Morita, 2000). Furthermore, ESP oral presentations "give learners the chance to be creative and innovative as well as to personalize topics that regard their studies or interests" (Jimenez & Ruffolo 2010:11)

In light of this, the following sections will report on a study carried out in a Business English for Academic Purposes (BEAP) course, providing an overview of how the course was structured and illustrating the findings of a questionnaire administered to the students. The final section considers the pedagogical implications and suggests further lines of research.

2. The study

2.1. Research aims

The main aim of the study was to investigate students' attitudes towards group work, with particular focus on possible reticence towards working in groups on the part of lower proficiency students. Specifically, the study explored the advantages and/or disadvantages of group work

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and task-based activities in large mixed groups as well as the effects of oral presentations on foreign language development.

In particular, the study addressed the following research questions:

1. What are the reasons for choosing to work individually or in groups? Are there different reasons depending on students' proficiency level?

2. Do students working on oral presentations find group work useful?

3. Are oral presentations useful for the learning of a foreign language?

2.2. The teaching experience: the participants and the context

The study was carried out within a BEAP course in which approximately 200 first year students majoring in Economics were enrolled (Department of Economics, Statistics and Finance). The students, all native speakers of Italian, attended an English course in the first semester of the academic year. The course was divided into two modules. The first module was structured around an EFL integrated syllabus which emphasizes the importance of structures and how they are related to their communicative function. Particular attention was paid to speaking and reading skills as well as to the acquisition of specialized vocabulary in the field of business. The module was held over a 6-week-term for a total of 36 hours and was organized as tutorials to allow the students to work in relatively small groups (about 35 students). The aim of this first module was to prepare students for the second module, which is an integration of English for Specific Purposes (ESP), with emphasis on language used in business, commercial and marketing sectors, and English for Academic Purposes (EAP) with a focus on academic discourse and study skills.

After completing the first module, students took a mid-term test, the results of which were used to divide them into two larger groups (about 100 students) based on their language competence. Students whose average proficiency in English was B1 following the Common European Framework of Reference (Council of Europe 2001) were placed into Group 1, while the students with an A2 level of competence were placed into Group 2. The students then attended the second module, which consisted of 15 two-hour lessons taught by the authors over a 6-week-term. The aim of this second module was to introduce students to the main features of academic discourse and develop study skills (e.g., identifying and understanding main concepts and key words, summarizing main points, taking notes) that are useful for students when attending seminars or consulting sources in English. Moreover, since most of these students will need to give and/or attend an oral presentation in English sometime during their academic or professional careers, part of the course focused on the structure and language of oral presentations as well as strategies necessary for preparing and delivering an effective talk. All students were required to prepare an oral presentation on a business, economic or socio-economic issue which they would present as part of their oral exam. They were given the choice of working on their presentation alone or in groups of up to 4 people.

2.3. Data collection

The data were collected through a questionnaire purposely designed for the present study to investigate students' attitudes towards group work, the reasons for choosing to work alone, and their views on oral presentations in a foreign language (see Appendix 1). The questionnaire was compiled in Italian to ensure that students could understand the questions and fully express their opinions. It was administered to the 125 students who took the exam in the winter and summer sessions, individually and immediately following each oral exam.

The questionnaire consisted of thirteen items which included questions on the modality of the work done as well as specific questions that regarded their presentation, e.g., how they organized their work, how much time they spent preparing the presentation, which skills they had improved. For the purposes of this paper, only the questions directly related to the research

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aims will be addressed, namely why students chose to work alone or in groups, the advantages and disadvantages they found, and the extent to which oral presentations are useful for improving language skills.[2]

2.4. Data analysis and discussion

Of the 125 students who answered the questionnaire, 78 were in the intermediate group (Group 1) and 47 were in the pre-intermediate group (Group 2).[3] Overall, most students chose to work on their own (Figure 1), with 75 students working alone compared to 50 students working in groups (cfr. Questionnaire item 1). However, it is interesting to see that there is a substantial difference between the two groups (Figures 2 and 3), in fact whereas only 19% of the students in Group 2 (9 students) decided to work with other students, this percentage was much higher (53%) for students in Group 1, with 41 students working in groups.
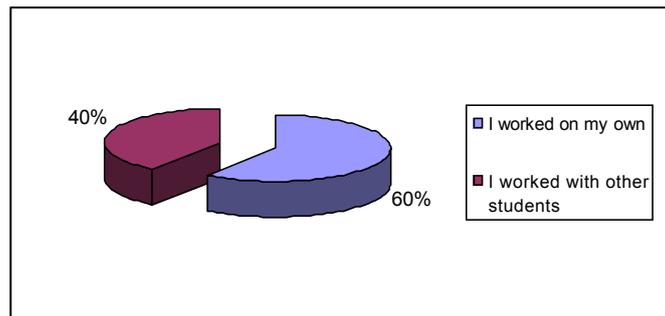

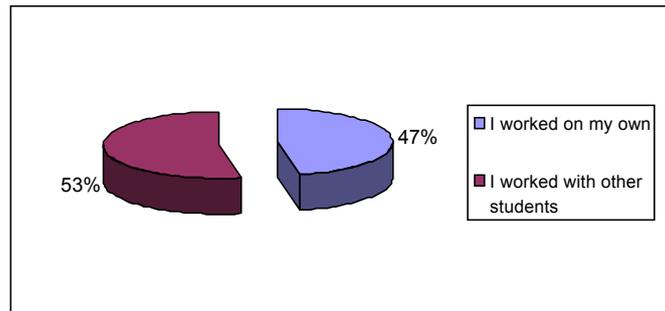Figure 1: Did you prepare your presentation on your own or did you work in a group?
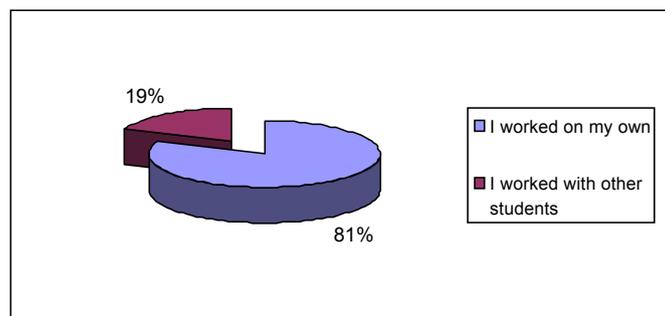

Figure 2: Group 1

Figure 3: Group 2

The reasons why students chose to work in groups are summarized in Tab. 1, while those given by students who worked alone are in Tab. 2 (cfr. Questionnaire items 2 and 6).[4] As regards students who worked on their presentation with other students, their answers can be grouped into three macro areas. 'Socializing' was the reason given by 38% of the students (answers *a* and *b*), in addition to being a good way to learn about a topic. 32% referred to the idea of 'helping each other', which can make studying easier (answers *c* and *e*). 26% stressed that collaborating with

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other students can 'lead to better results'.

Why did you decide to work with other students?		Group 1 (total=41)	Group 2 (total=9)	Total (N=50)
a.	Because it's a good way to get to know each other while also learning more about the topic	9	1	10 (20%)
b.	Because it's more fun and a good way to socialize	9	0	9 (18%)
c.	To help each other gather more information about our topic and make studying easier	5	0	5 (10%)
d.	To help each other get ready for the exam by speaking in English	3	1	4 (8%)
e.	To simplify and reduce the work	5	3	8 (16%)
f.	Because collaboration means sharing ideas and coming up with new ideas together and this leads to better results	7	0	7 (14%)
g.	Because group work leads to better results since we can deliver a more complete presentation and compare ourselves to others	3	3	6 (12%)
h.	No answer	0	1	1 (2%)

Table 1: Reasons for choosing group work

On the other hand, students who chose to work alone gave a wider range of reasons for doing so. 23 students (30.7%) said that they achieve better results when they work alone (answers *a* and *b*), while 9 students (11.6%) said they prefer being autonomous and making decisions on their own (answers *c*, *d* and *e*). 15 students (20.0%) said they do not feel comfortable working with others (answer *f*), underlining in some cases that group work can be intimidating (answers *g* and *h*). Having different proficiency levels was the reason 9 students (11.9%) gave for not working with other students (answers *i*, j, k and *l*). 3 people (4.0%) also mentioned the unfairness of group work since sometimes one person does most of the work. 5 students (6.7%) said they had already chosen a topic and therefore wanted to work alone, while 1 student could not find anyone else who was interested in her idea for the presentation. Finally, 8 students (10.7%) gave practical reasons for working on their own, such as distance or time.

Why did you decide to work alone?		Group 1 (N=37)	Group 2 (N=38)	Total (N=75)
a.	*I do a better job when I work alone*	7	11	18 (24.0%)
b.	*To organize my work better and take full advantage of my potential*	2	3	5 (6.7%)
c.	*To be more autonomous, I don't like to depend on others*	5	2	7 (9.0%)
d.	*I wanted to be able to make changes without having to ask others*	1	0	1 (1.3%)
e.	*I don't like group work because I don't like my ideas to be influenced*	0	1	1 (1.3%)
f.	*I prefer to work alone, it's hard to work with/ talk to others*	5	7	12 (16%)
g.	*So I wouldn't be so nervous at the exam since I'm intimidated by other students*	0	1	1 (1.3%)
h.	*To be able to fully express my ideas without feeling intimidated*	1	1	2 (2.7%)
i.	*I didn't want to be a burden for the others because my English isn't very good*	1	2	3 (4%)
j.	*Because I didn't want the others to have to present my part if I didn't pass the written exam*	0	1	1 (1.3%)
k.	*It was easier because my level of English is low so I needed to work at my own pace*	0	4	4 (5.3%)

l.	*I don't think people with different language competences can work well together*	0	1	1 (1.3%)
m.	*To avoid people taking advantage of just one person by making them do all the work*	3	0	3 (4.0%)
n.	*I don't think I would have been able to collaborate with others since I already had a topic in mind*	4	1	5 (6.7%)
o.	*I couldn't find anybody who was interested in my idea*	0	1	1 (1.3%)
p.	*I had very little time because I work*	1	1	2 (2.7%)
q.	*It would have been difficult for me to meet the others because I live far away*	4	0	4 (5.3%)
r.	*I wasn't sure when I wanted to take the exam*	1	0	1 (1.3%)
s.	*It allowed me to have more time to get ready*	1	0	1 (1.3%)
t.	*No answer*	1	1	2 (2.7%)

Table 2: Reasons for choosing to work alone

The results would seem to indicate that lower proficiency students may prefer to work individually rather than with other students. In fact 81% of the students in Group 2 chose to prepare and deliver their presentation on their own compared to 47% in Group 1. This might be due in part to the fact that students with a lower level of language competence may experience a feeling of uneasiness and apprehension when working with students that they consider more proficient in the language. However, there were other reasons for choosing to work alone, including wanting to be more autonomous, which was mentioned by students in both groups. Turning to the answers given by students to motivate their choice of working with others, students stressed the idea that group work can lead to better results while also simplifying and reducing the workload. The large difference in the number of replies from students in the intermediate group (41) and the pre-intermediate group (9) makes it difficult to state whether the reasons given depend on proficiency level.

Question 4 aimed at understanding how students who worked in groups organized their work (see Tab. 3). 34.0% of the students said they had divided the work up equally but did not specify how (answer *a*). Other students gave more detailed explanations as to how the work was divided (answers *b*, *c*, *e*, *f*, *g* and *h*). As can be seen, 20.0% of the students divided the tasks based on what they had more knowledge about (answer *c*) or on their abilities (answer *e*), while 40% did not say what the division was based on (answers *b*, *g* and *h*). 8.0% said they worked on everything together.

	How was the work divided among the group?	Group 1 (N=41)	Group 2 (N=9)	Total (N=50)
a.	*We divided up the work into equal parts*	13	4	17 (34%)
b.	*Each member of the group conducted research on one of the subtopics we had decided on and then the material was organized and put together as a group*	11	3	14 (28%)
c.	*We divided the topic into subtopics and each person focused on the subtopic they knew more about*	7	0	7 (14%)
d.	*We worked on everything together*	3	1	4 (8%)
e.	*We divided up the work based on our abilities*	3	0	3 (6%)
f.	*One person was responsible for the introduction, another for the body, and another for the conclusion*	3	0	3 (6%)
g.	*We worked on the whole presentation together and then each member rehearsed their own part*	0	1	2 (4%)
h.	*One person concentrated on the content and one on the power point slides*	1	0	1 (2%)

Table 3: How group work was organized

The answers given to question 5 are essential to understanding the extent to which students found group work useful. All 50 students said that working with other students was indeed beneficial. Their answers, which can be grouped into 4 macro areas, are illustrated in Tab. 4. 28 students (56.0%) highlighted that group work allowed them to exchange ideas, which helped them improve their language skills (answers *b*, *c* and *e*) and do a better job (answer *d*). Having a 'lighter work load' was an advantage which 6 students (12.0%) referred to, of which 2 also said led to a better presentation (answer *g*). Other reasons included that it was a good way to socialize and have fun (answers *h* and *i*) and that it was interesting and motivating (answer *j*). 11 students (18.0%) did not specify why it was useful. From these responses we can affirm that collaboration helped students improve their language skills as well as giving them the chance to exchange ideas and socialize with their peers, which confirmed some of the reasons given above for choosing to work with others.

	How was group work useful?	Group 1 (N=41)	Group 2 (N=9)	Total (N=50)
a.	*It gave us the opportunity to exchange more ideas*	13	0	13 (26%)
b.	*It gave us the chance to work together and help each other improve our skills*	5	1	6 (12%)
c.	*By collaborating we learned from each other*	3	1	4 (8%)
d.	*We were able to do a better job (e.g. well-organized, interesting, in-depth study) by sharing ideas*	1	3	4 (8%)
e.	*It gave us the chance to compare different study strategies and learn more*	0	1	1 (2%)
f.	*We didn't have to do as much work as the people who worked on their own*	3	1	4 (8%)
g.	*We were able to share the workload and as a consequence do a better job*	2	0	2 (4%)
h.	*It was a good way of socializing*	2	0	2 (4%)
i.	*We had fun together*	2	0	2 (4%)
j.	*It was interesting and motivating*	3	0	3 (6 %)
k.	*No answer*	7	2	9 (18%)

Table 4: How group work was useful

Students who worked on their own were also asked to explain how they organized their work (cfr. Questionnaire item 8). Unlike students who worked in groups, these students gave more details about their organization (see Tab. 5), perhaps also because this question was interpreted in different ways.[5] 27 students (36%) referred to how they organized the presentation itself (answers *a* to *c*) whereas 21 (28.0%) described some of the steps taken to prepare their presentations (answers *d* to *n*). 1 student said that she focused on the most difficult parts first, while 2 students explained what linguistic aspects they had focused on (answers *o*, *p* and *q*). Answers *r* to *u* refer to when or how much students studied, while answers *v* and *x* refer to the final product. 10 (13.3%) students did not provide an answer.

	How did you organize your work?	Group A (N=37)	Group B (N=38)	Total (N=75)
a.	*I developed the different sections I wanted to present, mainly following the outline given by the teacher (introduction, body, and conclusion)*	12	8	20 (26.7%)
b.	*In three parts, focusing equally on all of them*	2	2	4 (5.3%)
c.	*First I introduced myself then I presented the topic*	0	3	3 (4%)
d.	*I did some research online and then prepared the PPT presentation*	1	2	3 (4%)

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e.	*I found the information online and then I summarized it*	2	3	5 (6.7%)
f.	*I found biographical information as well as economic information and put it together*	1	0	1 (1.3%)
g.	*I rewrote the information I had found into a spoken form*	1	0	1 (1.3%)
h.	*First I rewrote the information I had found and then I rehearsed it*	1	0	1 (1.3%)
i.	*I chose a topic and started looking for information*	1	1	2 (2.7%)
j.	*I got information about the company by talking to one of the managers, I put everything together using this information and my personal knowledge, and then summarized everything*	1	0	1 (1.3%)
k.	*First I found the information, then I created an outline which included the most important points*	1	1	2 (2.7%)
l.	*I found some information on the Internet and some other news in magazines*	1	1	2 (2.7%)
m.	*I used the information in the hand-out as a starting point and then looked for more information online*	1	0	1 (1.3%)
n.	*I found the information in Italian, translated it and learned it*	1	1	2 (2.7%)
o.	*I focused on the most difficult parts first*	0	1	1 (1.3%)
p.	*First I learned the key words, then I worked on my grammar*	0	1	1 (1.3%)
q.	*First I focused on the vocabulary then on my pronunciation*	0	1	1 (1.3%)
r.	*Learning and revising day after day*	1	1	2 (2.7%)
s.	*Studying 3 or 4 hours every two days*	1	0	1 (1.3%)
t.	*I studied when I had time and tried to be very organized*	0	1	1 (1.3%)
u.	*I didn't have much time so I prepared everything in one day*	1	0	1 (1.3%)
v.	*A prepared a brief PPT presentation*	4	4	8 (10.7%)
w.	*I created a brochure*	1	0	1 (1.3%)
x.	*No answer*	3	7	10 (13.3%)

Table 5: How students who worked on their own organized their work

To address the other aim of this study, which was to investigate the effects that preparing and delivering an oral presentation can have on foreign language development, the students were asked to self-assess their improvement (cfr. Questionnaire item 11). Tab. 6 illustrates the answers given by students who worked in groups as well as by those who worked alone.[6] Not surprisingly, oral production was the skill which most students felt they had improved (59.2%), followed by oral interaction (40.0%). Students also said they had improved their reading (38.4%), writing (36.8%) and listening skills (28.8%). Only 2 (1.6%) students said they had not improved any skills, in addition to 5 students (4%) who did not choose any skill.

Skill	Worked in groups (N=50)		Worked alone (N=75)		Total (N=125)
	Group 1	Group 2	Group 1	Group 2	
Reading	17	5	12	14	48 (38.4%)
Writing	17	3	9	17	46 (36.8%)
Oral interaction	16	3	15	16	50 (40.0%)
Oral production	21	5	24	24	74 (59.2%)
Listening	11	4	7	14	36 (28.8%)
None	0	2	0	0	2 (1.6%)
No answer	1	0	2	2	5 (4%)

Table 6: Language skills students have improved

The students were also asked if they had encountered any difficulties. As illustrated in Tab. 7, of the 125 respondents, 67 (53.6%) stated that they had not had any problems, while 31 (24.8%) said that they had. 27 students (21.6%) did not answer this question. This high number of students who did not give an answer makes it difficult to draw any conclusions about whether there are differences between students who worked in groups or those who worked alone or between Group 1 and Group 2. However, if we look at the valid percent, which does not take into account answers left blank (Tab. 8, 9 and 10), it would appear that overall students in Group 2 had more difficulties (36.6%) than those in Group 1 (28.1%), and those students from Group 2 who worked alone had the most difficulties (37.5%).

Did you have any difficulties?	Worked in groups		Worked alone		Total number of students (125)
	Group 1 (N=41)	Group 2 (N=9)	Group 1 (N=37)	Group 2 N=38	
Yes	10 (24.4%)	3 (33.3%)	6 (16.2%)	12 (31.6%)	31 (24.8%)
No	19 (46.3%)	6 (66.6%)	22 (59.5%)	20 (52.6%)	67 (53.6%)
No answer	12 (29.3%)	0	9 (24.3%)	6 (15.8%)	27 (21.6%)

Table 7: Whether or not learners had difficulties- Raw percent

Did you have any difficulties?	Worked in groups		Total number of replies (N=38)
	Group 1 (N=29)	Group 2 (N=9)	
Yes	10 (34.5%)	3 (33.3%)	13 (34.2%)
No	19 (65.5%)	6 (66.6%)	25 (65.8%)

Table 8: Whether or not learners had difficulties- Valid percent group work

Did you have any difficulties?	Worked alone		Total number of replies (60)
	Group 1 (N=28)	Group 2 (N=32)	
Yes	6 (21.4%)	12 (37.5%)	18 (30.0%)
No	22 (78.6%)	20 (62.5%)	42 (70.0%)

Table 9: Whether or not learners had difficulties- Valid percent individual work

Did you have any difficulties?	Group 1 (N=57)	Group 2 (N=41)	Total number of replies (N=98)
Yes	16 (28.1%)	15 (36.6%)	31 (31.6%)
No	41 (71.9%)	26 (63.4%)	67 (68.4%)

Table 10: Whether or not learners had difficulties- Valid percent per group

Examining the answers given by the 31 students who said they had encountered difficulties (see Tab. 11), we can see that 16 students referred to problems with using English (answers *a*, *b*, *c*, *d* and *e*). In particular, students had problems presenting the topic in English, writing the slides and understanding sources, while 1 student mentioned that her low proficiency made it difficult to prepare the presentation. 7 students referred specifically to problems learning specialized or

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technical vocabulary related to their field of study. Other students had problems summarizing the topic and rehearsing the presentation. 1 student stated that she felt isolated because she had worked alone.

What difficulties did you have?		Worked in groups		Worked alone		Total N= 31
		Group A N=10	Group B N=3	Group A N=6	Group B N=12	
a.	Speaking/presenting a topic in L2	1	2	2	5	10
b.	Writing the slides in L2	0	0	2	1	3
c.	Understanding sources in English	2	0	0	0	2
d.	I have a very basic knowledge of English	0	0	0	1	1
e.	Learning specific/technical vocabulary so that I could use appropriate language in the field of economics	3	1	1	2	7
f.	Summarizing the topic	2	0	0	1	3
g.	Rehearsing the presentation	0	0	1	1	2
h.	Felt isolated	0	0	0	1	1
i.	No answer	2	0	0	0	2

Table 11: Difficulties encountered

Overall, the large majority of students (80.0%) said that delivering an oral presentation was a positive experience. This percentage was the same for both students who worked in groups and those who worked alone. If we consider only the valid data, the percentages are even higher: 97.6% for group work and 98.4% for individual work; 98.4% for Group 1 as a whole and 97.6% for Group 2 (see Tab. 12, 13 and 14).

Has delivering an oral presentation been a positive experience?	Worked in groups		Total number of students (N=50)	Total number of replies (N= 41)
	Group 1 (N=41)	Group 2 (N=9)		
Yes	32	8	40 (80.0%)	97.6%
No	0	1	1 (2.0%)	2.4%
No answer	9	0	9 (18.0%)	--

Table 12: Positive experience (group work)

Has delivering an oral presentation been a positive experience?	Worked in groups		Total number of students (N=75)	Total number of replies (N= 61)
	Group 1 (N=37)	Group 2 (N=38)		
Yes	28	32	60 (80.0%)	98.4%
No	1	0	1 (1.3%)	1.6%
No answer	8	6	14 (18.7%)	--

Table 13: Positive experience (individual work)

Has delivering an oral presentation been a positive experience?	Group 1 (N=61)	Group 2 (N=41)	Total number of replies (N=102)
Yes	60 (98.4%)	40 (97.6%)	98.0%
No	1 (1.6%)	1 (2.4%)	2.0%

Table 14: Positive experience- valid percent per group

In order to investigate why the experience had or had not been positive, the respondents were asked to provide details for their answers, which are illustrated in Tab. 15 and 16. A wide range of answers were given by both students who worked in groups and those who worked on their own. Among the answers provided, we can see that oral presentations were useful for improving language skills and the English language in general, developing study skills, developing group

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skills, and socializing. There is also an emphasis on the importance of learning specialized vocabulary and improving their knowledge of their subject area. Finally, oral presentations were useful because they were given the chance to engage in a real-life situation which will be useful for their future.

	Why or why not? (in groups)	Group A (total=41)	Group B (total=9)	Total (50)
a.	*It helped me overcome my shyness*	6	0	6 (12%)
b.	*I now understand the importance of group work*	5	0	5 (10%)
c.	*We became better friends*	2	0	2 (4%)
d.	*It gave me the chance to exchange ideas and learn words that can help me understand texts in my area*	3	1	4 (8%)
e.	*I learned more about the topic*	0	1	1 (2%)
f.	*I learned specialized vocabulary which is very useful for my studies*	3	1	4 (8%)
g.	*I improved different language skills and I learned more about the topic*	0	1	1 (2%)
h.	*I improved my oral production and interaction skills*	2	1	3 (6%)
i.	*I had the opportunity to present a topic in English, which I think will be useful in the future*	3	1	4 (8%)
j.	*It helped me understand how to do an oral presentation*	2	0	2 (4%)
k.	*It made it easier for me to present my ideas*	1	0	1 (2%)
l.	*We had the possibility to present/talk about our region.*	1	0	1 (2%)
m.	*I learned to organize my work notwithstanding my basic knowledge of English*	1	0	1 (2%)
n.	*It encouraged me to study more in English and in a different way*	2	0	2 (4%)
o.	*It was useful and above all interesting*	0	1	1 (2%)
p.	*No answer*	10	2	12 (24%)

Table 15: Why oral presentations were or were not a positive experience- group work

Why or why not? (alone)	Group A (37)	Group B (38)	Total (75)
It increased my motivation to study	2	0	3
It will help me interact with teachers of other subjects	1	1	2
It helped me overcome my shyness	1	0	1
It helped me overcome my shyness and expand my knowledge	0	1	1
It helped me improve my English in general	2	2	4
It helped me overcome many difficulties in English	1	0	1
It is useful to express yourself in a foreign language and improve your language competence in general	0	2	2
I expanded my knowledge.	1	3	4
I learned more about the topic	2	1	3
I improved my English competence and learned more about the topic	0	1	1
I improved my oral production and interaction skills	4	8	12
I think I have improved my oral interaction skills as well as my reading skills very much.	1	0	1

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I improved my summarizing and oral production skills	1	0	1
I improved my vocabulary and my oral production skills	1	0	1
I learned new vocabulary	0	2	2
It was a new experience thanks to which I learned new vocabulary and hopefully it will be useful for my future job.	1	0	1
It encouraged me to study more in English and in a different way	2	4	6
It was my first experience in presenting an economic topic in English.	1	0	1
It is useful for the English exam and for the world of work.	1	0	1
It is useful for my future studies and job	4	1	5
It gave me the opportunity to present a current topic which I think is very important and interesting	2	4	6
I learned more about local companies	1	1	2
No, because I had already done a presentation.	1	0	1
No answer	7	7	14

Table 16: Why oral presentations were or were not a positive experience- individual work

Thus we can see that as regards the effects of preparing and delivering an oral presentation on foreign language development, the vast majority of students said they had improved at least one skill. This is very important because oral presentations not only helped students reflect on language form and specialized vocabulary, but presenting a topic in English also gave learners the chance to engage in a real life task which they felt would be useful in the future. At the same time, this activity was useful in developing and enhancing study skills.

3. Conclusion

Various scholars have highlighted the beneficial effects of employing oral presentations and group work in LSP classrooms. In particular, this study aimed at investigating students' attitudes towards group work as well as exploring the possible advantages of group work and oral presentations in a LSP class. The results of the study showed that preparing ESP oral presentations can have positive effects for students. As highlighted in other studies (Gillies 2003, Donato 1994, Jimenez & Ruffolo 2010), this specific task encourages students to reflect on language form, language use and communicative effectiveness issues. The findings also showed that when preparing ESP oral presentations, students focus on specialized vocabulary which can be useful in their future studies and careers, thus providing them with strategies and competences that can be employed in their area of interest. Moreover, working in groups on oral presentations may facilitate language learning, and, if we consider the project from a more humanistic point of view, it encourages students to overcome their reluctance to speak in class and improve their social skills.

Future research will involve investigating the extent to which students who worked on their own found individual work beneficial. In fact, students who worked in groups were explicitly asked the extent to which they found group work useful, while this type of information could only be inferred for those who worked on their own. Finally, a last question regarding students' willingness to repeat the experience could have been included in the questionnaire.

In a teaching reality in which university language teachers are often faced with large numbers of students, it is important to find techniques that are effective on a variety of levels and which may be of interest to students outside of the classroom. Therefore, LSP oral presentations may be a valid tool to implement in courses which involve very high numbers of students and a limited amount of hours in the classroom.

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4. Appendix

Oral Presentations

This questionnaire is aimed at collecting your opinion about oral presentations. In particular, your answers will help us understand students' attitudes on preparing and delivering an oral presentation in class. Please take some time to answer the following questions, which refer to the presentation you have just completed. The questionnaire is anonymous and the findings will be used for research purposes only. Thank you for your collaboration! ☺

1. Did you prepare your presentation on your own or did you work in a group?

   ☐ alone **[go to question N°6]**

   ☐ with other students **[go to question N°2]**

2. Why did you decide to work with other students?

3. Why did you choose the topic of your presentation?

4. How was the work divided among the group?

5. Was working with other students useful?

   ☐ Yes   ☐ No

   Please provide details.

   [go to question N°9]

6. Why did you decide to work alone?

7. Why did you choose the topic of your presentation?

8. How did you organize your work?

9. Which of the following sources did you use to prepare the presentation? If you used more than one source, number them starting with the source you used the most (i.e. 1: main source).

   ☐Books   ☐Our English course handout   ☐   Newspapers/magazines

   ☐Internet   ☐Background knowledge   Other _____

10. How long did you spend on your presentation?

    ☐Less than a week   ☐   1 week   ☐2 weeks

    ☐3 weeks   1 month   ☐Other_____

11. Which language skills do you think you have improved? If you choose more than one, number them starting with the skill you have improved the most.

☐Reading   ☐Writing   ☐Oral interaction

☐Oral production   ☐Listening   ☐ None

12. Did you have any difficulties? If so, please provide details.

13. Has delivering an oral presentation been a positive experience?Please provide details.

Thanks for your collaboration!

5. Notes

[1] Although the authors have co-operated in the research work and in writing the paper, they have individually devoted specific attention to the following sections: Jimenez: 2.4; Ruffolo: 1, 2.1, 2.2, 2.3, 2.5.

[2] cfr. items 1, 2, 4, 5, 6, 8,11,12, and 13.

[3] The difference in numbers between the two groups is due to the fact that students had to pass the written exam, which was the same for both groups, before they could sit the oral exam. Not surprisingly, the pass rate for Group 1 was higher.

[4] The students' answers, which were all in Italian, have been translated by the authors. This regards all the questionnaire items that are open-ended. Since the questionnaires were anonymous, we have used 'she' to refer to both males and females.

[5] This question was designed to collect information on how the students had prepared for the presentation, but when analyzing the responses we realized it was not clear as some students referred to the structure of the presentation per se.

[6] Students could choose more than one skill, which is why the percentages do not add up to 100.

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Relevance of online video clips for autonomous learning of maritime English

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Abstract. The content of teaching of Maritime English is dictated by the 1995 International Convention on Standards of Training, Certification and Watchkeeping (STCW), as amended, which sets qualification standards, including a high proficiency level in Maritime English, for masters, officers, and officers of the watch on merchant ships. However, still more than 30 % of accidents at sea or in ports can be attributed to communication problems, in particular to the poor knowledge of English. The pre-existing language competence of students that enrol in the programs of nautical studies and marine engineering at the Faculty of Maritime Studies and Transport of the University of Ljubljana, Slovenia, ranges from A1 to C1. Therefore, in addition to class work we need to look for interventions that might allow less successful students to catch up with their peers and more successful students to upgrade their language knowledge in the field of Maritime English. Using authentic video is intrinsically motivating for students and may affect student behaviour outside the language classroom. Series of Maritime English video materials are commercially available (e.g., Seagull) but not accessible to students. As a result, this paper explores video materials that are universally available online and could be used as a springboard for autonomous learning of students outside the language classroom. In order to corroborate the relevance of these video materials in terms of real and carrier content, an analysis of online clips that depict the maritime world, in particular different types of ships, was made. The primary aspects that this paper focuses on are relevant carrier content and Maritime English vocabulary.

Keywords. Authentic video materials, maritime English, teaching, vocabulary.

1. Introduction

The product of teaching of Maritime English (ME) is dictated by the 1995 International Convention on Standards of Training, Certification and Watchkeeping (STCW), as amended, which sets qualification standards, including a high proficiency level in ME, for masters, officers, and officers of the watch on merchant ships. Adequate knowledge of the English language is defined as, for instance, the ability of the

officer to use charts and other nautical publications, to understand meteorological information and messages concerning ship's safety and operation, to communicate with other ships and coastal stations and to perform the officer duties also with a multilingual crew, including the ability to use and understand the IMO Standard Marine Communication Phrases (IMO SMCP). (IMO 2011: 105)

Therefore, the language competence that students need to have acquired after completing their higher education studies undoubtedly is high. On the other hand, research has shown (Jurkovič 2009) that 25 % of students had not managed to reach beyond levels A1 and A2 prior to higher education enrolment. As a result, we need to look for interventions that might allow less successful students to catch up with their peers and students at higher levels of language competence to become (more) successful lifelong learners. A possible classroom intervention aiming at enhancing these processes is the use of authentic video materials for the autonomous learning of ME and English for General Purposes (EGP).

Several CALL applications exist for the learning of ME: results of projects that are freely available

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online (e.g., MarengPlus 2010; Captains 2012) or commercial (e.g., Seagull applications). However, none of these includes authentic video materials. In the teaching of EGP these have an established role but have not been subject to integrated research within the ME domain. In addition, Discovery Channel (e.g., Mighty Ships, Mega Builders) and National Geographic Channel (e.g., Megastructures) series could be used for educational purposes but are protected by copyright.

As a result, this paper explores video materials that are universally available online and could be used as a springboard for autonomous learning of ME outside the language classroom. In order to corroborate the relevance of these video materials in terms of real and carrier content, an analysis of online clips that depict the maritime world, in particular different types of ships, was made. The primary aspects that this paper will focus on are relevant carrier content and ME vocabulary.

2. Theoretical framework

ME is a division of English for Specific Purposes (ESP). It is designed to meet the needs of the discipline it serves, in this case the needs of ME users within the maritime community. ME is an umbrella term that encompasses five subvarieties: English for Navigation and Maritime Communications or Nautical English (including e.g. seamanship, cargo work, ship handling, and meteorology), English for Maritime Commerce, English for Maritime Law, English for Marine Engineering, and English for Shipbuilding (Bocanegra-Valle 2013). Therefore, ME also refers to the English used by various shore-based parties (Trekner 2000) but still Nautical English is often considered the "quintessence" of ME (Bocanegra-Valle 2013: 2). Yet, poor knowledge of English remains one of the most common causes leading to shipping accidents (Ziarati et al. 2008). Among the aspects that can cause communication problems often, very often or rather often, the following were identified: correct pronunciation, grammar, vocabulary, technical/nautical vocabulary, listening, speaking, Standard Marine Communication Phrases, reading, and writing (Vangehuchten et al. 2010).

To meet the needs of the maritime industry, the '4E' concept has been developed within the METNET and GLOMET projects (see Pritchard 2003). ME at the essential level is restricted to IMO SMCP. The objective of SMCP is to enhance navigational safety, standardize the language used in maritime communication, and assist MET institutions in training sea-based and shore-based personnel. The extension module is most commonly found at higher education institutions worldwide, and extends to shore-based activities and content. The enrichment module is intended mainly for management level students as it involves activities and topics such as business operations in shipping and terminal operation. Finally, the objective of the elevation module is to provide master's degree students with the language knowledge that they need to become good communicators and future managers. As far as the role of EGP is concerned, it permeates all levels, and is most prominent in the elevation module. This means that both EGP and mastery of ME are necessary for safe and efficient shipping operations.

Therefore, balancing ME and EGP language skills and systems appears as a necessity (Pritchard 2003; IMO 2009). In the teaching of EGP, the use of authentic video materials has an established role. It has been found that using video has positive effects on the development of listening comprehension and oral production (Weyers 1999), narration and description as micro speaking skills (Rifkin 2000), listening comprehension and vocabulary (Lin 2002), grammar (Herron et al. 2006), cultural competence, knowledge of contextualized use of language, speaking and listening skills in particular, vocabulary knowledge, and other not language-related skills (for instance critical and creative thinking skills) (Seferoglu 2008), vocabulary (Yuksel and Tanriverdi 2009), overall language proficiency (Mekheimer 2011), student interest and motivation (Mekheimer 2011; Tabatabaei and Gahroei 2011), and writing (Čepon 2011). In the ME Model Course 3.17 (IMO 2009), however, video is only assigned the role of "a useful resource for listening practice that catches students' imaginations, if used carefully." (IMO 2009: 101) Therefore, we can safely

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conclude that in the teaching of ME the role of authentic video has been underestimated and neglected.

With reference to using authentic video in the language classroom, the short-sequence or long-sequence approach can be used. A significant advantage of watching short clips is that they allow focusing on language details, such as specific vocabulary or grammatical forms (Swaffar and Vlatten 1997; Seferoglu 2008). In addition, the short-sequence approach can be used for less advanced learners while the long-sequence approach is more suitable for mature and more advanced learners (King 2002). Watching short excerpts may prevent the development of skills and strategies for extensive viewing of videos that characterize proficient users of a foreign language and the way we naturally watch video in real life circumstances. Therefore, students should be exposed to self-contained videos or sections of varying lengths, in accordance with the learning objectives (Swaffar and Vlatten 1997).

Another important issue is genre given that each has its specific structure, characteristics, benefits and drawbacks. This is the reason why students need to be exposed to a variety of genres. While documentaries have a number of benefits (see Sherman 2003), in the lecture format the visual sign is of minimal importance (Mekheimer 2011) and yet students are frequently exposed to this genre in real life situations.

3. Methodology

Textual and content analysis was used to determine the relevance of online authentic video materials for autonomous learning of ME.

In the first step of the research, www.youtube.com was used to find authentic online video materials on different types of merchant vessels. The following search terms were used: "general cargo ships", "bulk carriers", "oil tankers" +ship, "container ships", "reefers", "heavy load vessels", "ro-ro ships", and "merchant ships". As the search words "reefers" and "heavy load vessel" only returned approximately 48 and 21 results respectively, they were excluded from further analysis.

The results were sorted by relevance and the first 100 results for each search term or a total of 600 were examined. All videos with no sound (the vast majority of the videos found were amateur videos depicting vessels entering or leaving ports) and those with sound in languages other than English were eliminated, thus reducing the number of videos to be analysed to 70. Several videos were found to be protected by copyright (e.g., videos from the Discovery Channel's Mega Builders or Mighty Ships series), which reduced the inventory of potentially useful videos to 50. Tab.1 presents the approximate number of results for each search term as given by youtube, the number of videos examined, the number of videos with sound in English found, and the number of analysed videos.

	General cargo ships	Bulk carriers	Oil Tankers + ship	Container ships	Ro-ro ships	Merchant ships	Total
Approximate number of results	3,010	10,800	2,570	48,400	216	4,660	69,656
Number of videos examined	100	100	100	100	100	100	600
Number of videos found	5	9	12	25	3	16	70
Number of videos analysed	5	9	10	10	3	13	50

Table 1: Approximate number of results, number of videos examined, number of videos with sound in English, and number of videos analysed

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The total length of the 50 analysed videos was five hours, 16 minutes, and 36 seconds. Other descriptive data are as follows:

- shortest video: news report (00:00:55 seconds)
- longest video: lecture (00:54:31)
- average length: 00:06:28
- mode 1: 00:01:45
- mode 2: 00:02:28
- median: 00:02:28.

As far as the genre of the identified videos is concerned, the initial inventory consisted of 24 news reports, one computer simulation, six documentaries, five amateur videos, six commercials, two lectures, one interview, and three training videos.

All of the examined videos were uploaded in the last six years: three in 2008, four in 2009, six in 2010, 15 in 2011, 16 in 2012, and five in 2013.

In the second step transcripts of all sentences that contained at least one token that would be classified as belonging to ME vocabulary were made. The vocabulary that was identified as belonging to ME referred to any maritime activity or occupation, and included (Pritchard 2003):

- strictly nautical or technical terms (e.g., starboard, abaft),
- general English words that acquire specific meaning when used in the maritime context (e.g., check line),
- function words and semi-lexical items (e.g., set [sail]),
- multi-word units consisting of General English words that have a specific meaning in the maritime context, which can be compound nouns (short-sea shipping) or prepositional and adverbial phrases (e.g., heave up [anchor]), and
- linguistic expressions of speech acts in the maritime context (e.g., message markers in radio communication).

The final selection of videos was then made based on the following criteria:

- the ME token-per-minute ratio is higher than 5.0,
- videos shorter than two minutes are removed unless the ME token-per-minute ratio is higher than 10.0, which indicates high lexical density,
- a variety of genres is covered,
- a variety of carrier content is covered,
- videos vary in length,
- the video with the higher ME token-per-minute ratio is kept if two or more videos examine the same topic (e.g., shipping accidents),
- a section of a long video can be used instead of the whole.

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4. Results and analysis

The final inventory consists of 14 videos. A brief description of each can be found in Tab. 2.

Title	Carrier content	Genre	Length	No. of lexical units	Ratio
Bulk Carrier Adrift in the Coral Sea1	Shipping accident	News report	0:02:29	23	9.3
Sinking of the MV Derbyshire2	Shipping accident	Computer simulation	0:03:19	48	15.1
Making of Bulk Carrier in Cochin ShipYard3	Shipbuilding	Documentary	0:19:10	86	4.5
Huge ship - horrific hurricane4	Navigation in adverse weather	Amateur video	0:04:50	46	3.8
CMA CGM Marco Polo in Southampton5	Increasing ship size	News report	0:02:38	18	6.8
Container shipping - the world in a box6	History of containerization	News report	0:04:10	19	4.6
Newest, biggest container ship7	Increasing ship size	News report	0:01:40	17	10.2
Marine Transportation – reefer ships8	Reefers	Commercial	0:04:19	31	7.2
Ships - Merchant Ships & Classifications9	Classification of merchant ships	Presentation with video	0:09:17	80	8.6
Men and ships 1940 - Merchant Marine 8115010	History of the merchant marine	Documentary	0:06:21	53	12.2
SkySails bring windpower to container ships11	Wind as an alternative propulsion system	Commercial	0:05:38	27	4.5
Merchant shipping self protection12	Anti-piracy measures	Training video	0:13:55	37	2.7
Lightering of Oil Tankers Offshore US Coast.wmv13	Lightering	Documentary	0:07:50	71	9.1
Mod-01 Lec-15 RO-RO Ship14	Ship description	Lecture	0:07:00	46	9.9
TOTAL			1:32:36	602	
Average			0:06:37	43	7.7

Table 2: Title, carrier content, genre, length, number of ME tokens, and ME token-per-minute ratio in the selected videos

Finally, ME vocabulary was categorized. The initial categorization was based on Fabe's (2005) division into semantic categories but was then adjusted to produce the following groups (with corresponding subcategories): vessels, deck department, shore side, weather, and other. Tab. 3 presents the number of tokens in each category and subcategory, and share. Examples for each subcategory can be found in notes.

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	Tokens	Share (%)
Vessels	348	58
○ Types of vessels15	117	19
○ Parts of vessels16	100	17
○ Ship particulars17	22	4
○ Ship's tackle, equipment, aids18	65	11
○ Location on the vessel/with reference to the vessel19	19	3
○ Ship movement20	25	4
Deck department	150	25
○ Crew and duties21	59	10
○ Helm orders22	15	2
○ Cargoes, cargo activities, other vessel contents23	69	11
○ Radio communication24	7	1
Shore side	48	8
○ Ports and port activities25	37	6
○ Legal entities in shipping26	11	2
Weather27	33	5
Other - collective nouns and multi-word units28	23	4
TOTAL	602	100

Table 3: ME categories (number of tokens and share)

5. Discussion and conclusion

The objective of this paper was to explore video materials that are universally available online and to corroborate the relevance of these video materials in terms of real and carrier content for autonomous learning of ME outside the language classroom. Thus, the analysis represents the first step of informed materials design (the final result will be the creation of an online workbook with tasks related to these videos).

The analysis has confirmed the availability and relevance of online video materials for autonomous learning of ME. All selected videos display a high frequency of ME tokens and a high ME token-per-minute ratio. They cover a variety of ME categories although the categories of vessels and deck department are significantly larger than others. In addition, some categories found in previous research (Fabe 2005; Jurkovič 2012; Jurkovič 2013) have not been found, for instance engine room department and shipbuilding. All categories belong under the umbrella term of Nautical English (see Bocanegra-Valle 2013).

The final selection of videos includes a variety of genres, from documentaries and lectures, to commercials and news reports. Therefore, the benefits of each genre can be exploited to their full potential when designing the language tasks. Also the length varies, from the longest video (19.10) to the shortest one (1.40), which allows for the long-sequence and short-sequence approach.

The final inventory of 14 videos was made based on the initial inventory of a total of 600 authentic videos found and sorted by relevance using www.youtube.com, which represents a significant limitation of this study. The first 100 results per search term only were examined because the identification of potentially useful videos proved to be the most time-consuming part of the research process. Other search terms and other search engines might produce different results, which this paper does not explore. Finally, the search terms only referred to different types of merchant ships and produced results that can be classified under the category of Nautical English while no other Maritime 'Englishes' were represented in the videos although they are essential parts of the extension, enrichment, and elevation ME modules. In order to corroborate the relevance of online video materials for the teaching and learning of other aspects of ME, other and broader search terms would have to be used.

The analysis has shown that freely available online video materials could be used as a relevant tool for autonomous learning of ME. This would not only expose students to authentic language

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used in context, introduce the target community of the maritime world to pre-experience students, and primarily allow them to improve their language competence. It may also stimulate them to refer to other authentic video materials outside the ME classroom. The element of motivation, together with other desired results, however, would have to be corroborated through empirical quantitative or qualitative research.

6. Notes

1 http://www.youtube.com/watch?v=_m23xOd4Y5I (in the analysis referred to as BC1)

2 http://www.youtube.com/watch?v=9tN4xROtMjI (BC2)

3 http://www.youtube.com/watch?v=-dh1AfR6Z9o (only the time frame between 00:09:40 and 00:19:10 is included in the analysis) (BC3)

4 http://www.youtube.com/watch?v=GSvuMupKjlA (only the time frame between 00:00:00 and 00:04:50 is included in the analysis) (BC4)

5 http://www.youtube.com/watch?v=6Oh8i-u3d7Y (CS1)

6 http://www.youtube.com/watch?v=IDmLEFDDd-c (CS2)

7 http://www.youtube.com/watch?v=z3rRf2fY4V0 (despite the short length, this video was kept because of the high ratio of Maritime English lexical units per minute) (CS3)

8 http://www.youtube.com/watch?v=qxjSDvb8eTU (GCS1)

9 http://www.youtube.com/watch?v=zskbBNb5LXI (MS1)

10 http://www.youtube.com/watch?v=vi-UCMu8ZkM (only the time frame between 00:00:00 and 00:06:21 is included in the analysis) (MS2)

11 http://www.youtube.com/watch?v=qyLjISR6XQQ (MS3)

12 http://www.youtube.com/watch?v=StwxJl_OP0c (despite the low ratio of Maritime English lexical units per minute, this video was kept in the inventory for the relevant and interesting carrier content) (MS4)

13 http://www.youtube.com/watch?v=GjfSYmXU1EQ (OT1)

14 http://www.youtube.com/watch?v=jrZJvmc006s (only the time frame between 00:00:00 and 00:07:00 is included in the analysis) (RR2)

15 Bulk carriers are ocean going vessels used to transport unpackaged cargo items in bulk, such as iron ore, cement, bauxite, coal, grain in their cargo holds." (MS1)

16 "The fore peak ballast tank takes on water with every wave, and in less than 12 hours is more or less filled." (BC2)

17 "Gross tonnage: 160,000, TEU: 16,020, length: 396m, beam: 54m, draft max. 16m." (CS4)

18 "Auto pilot for auto steering, GPS navigator, AIS, upgraded radars, and comprehensive data display." (BC3)

19 "Decks are continuous from port side shell to starboard side shell." (RR2)

20 "The ID integrity had no cargo on board unlike the Shen Neng that ran aground on the Great Barrier Reef off central Queensland in 2010." (BC1)

21 "One hour per day, in fair weather or foul, bosun, chips, able seamen, oiler, fireman, wiper, steward, cook, and messboy into the lifeboat, for American ships - already the safest in the world - must be kept safe." (MS2)

22 "Hard-a-starboard." (OT1)

23 "Pallets are loaded through the ship's side door to the storage warehouses." (GCS1)

24 "Mayday mayday mayday. // This is MV Way, MV Way. // In position 12 degrees 30 minutes North, 045 degrees East, transiting the international recognized transit corridor. // We are under attack. // Shots have been fired. // We are under attack on the port side. // Mayday Mayday mayday." (MS4)

25 "A dredging campaign is to start shortly to bring a new deep water container berth on stream by the beginning of 2014." (CS1)

26 "A French container ship operator took over from Maersk Line the record of the shipping line owning the world's largest capacity container ship." (CS4)

27 "As the typhoon approaches and conditions worsen, the master – following normal practice – turns to keep the waves at a slight angle to the bow." (BC2)

28 "The ships that are invariably reported in the greatest of difficulty tend to be ships under flags of convenience." (BC4)

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What research can tell us about how best to prepare business students for the multilingual workplace

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Abstract. Due to the internationalisation of companies resulting in the increased mobility of workers, a large number of employees interact on a daily basis with colleagues with whom they do not share a mother tongue and often even work in geographically dispersed multilingual teams. In Europe the language which is mostly chosen as the common or corporate language in business is English. But even though English may have been established as a corporate language, the employees' daily activity is reflected in the language choice for work purposes and negotiated between the interactants in everyday interactions in the workplace.

Drawing upon interviews with employees in international companies in South-Eastern Europe, this paper explores language choice in multilingual workplaces and which communicative challenges employees face when working in a foreign language. The findings show that English and other languages are used in very specific communicative situations and employees face particular linguistic challenges. In addition, using local languages rather than English in various communicative workplace situations results in specific but not general competence in English. Based on these findings, implications for teaching Business English to (future) employees in multilingual workplaces will be discussed.

Keywords. Communicative challenges, English as international language, language practices, multilingual workplaces, teaching business English.

1. Introduction

Over the last few decades, the nature of (business) workplaces has changed in many ways. The trend of companies transcending national borders for business as well as technological novelties have led to an increase in the number of workplaces that are situated in multinational companies. These changes have resulted in different kinds of tasks and, above all, skills which are demanded and expected from employees in these workplaces.

Among these skills which have gained importance are the linguistic skills of employees. In particular, in multinational companies whose staff comprises people from various backgrounds and with differing mother tongues, employees need to be fluent in more than one language. Language skills or the lack thereof may function as gatekeepers to these kinds of jobs (see e.g. Marschan-Piekkari, Welch & Welch 1999, Cheng & Curtis 2010, Moore 2007, for research on language as gatekeepers in various sectors). Depending on the region, different languages are drawn upon to facilitate communication, and taking Europe into consideration (which is the locus of this paper), it is English which has become the most prominent language (or lingua franca) used in business (Rogerson-Revell 2007).

As many companies have adopted English as their corporate language to enable communication between their subsidiaries in various countries, it is language skills, or even more importantly, communication skills in English which are essential to have and be able to apply in every day work life. And it is exactly this language interface, which makes research of what happens linguistically in the workplaces, more important than ever. The questions arise what really happens regarding language use in these workplaces, which communicative skills are necessary to master and, consequently, should be taught to business students. To take it one step further, research on language and communication practices can help make lecturers in business English

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be aware of what their students will need and, consequently, how to adapt their curricula to workplaces in the real world.

The changing nature of workplaces and teaching was already addressed by Warschauer (2000) and even earlier with the advent of email by Louhiala-Salminen (1996). There is numerous research on what language/communicative skills business students need and what the nature of English classes in tertiary education should be like (e.g. Kassim & Ali 2010, Crosling & Ward 2002, Zhang 2013, Belcher 2004, Zagan-Zelter & Zagan-Zelter 2010). This paper contributes to this line of research by adding research data from a less researched area in Europe, i.e. South-Eastern Europe. The research results reveal the language ecology in multinational companies in this region and, in a second step, which suggestions can be drawn from it for teaching English to business students which prepares them most appropriately for the real-world of business workplaces.

The next section gives a short overview of English as an international language in business settings followed by an introduction to the data and methodology used. The third and fourth sections address the employees' perceptions of language use in workplaces. The discussion section will outline the suggestions drawn from the results and also refer to whether selected course books for business English touch upon these aspects.

2. English as the international language in European business settings

Europe is by no means a homogeneous area and therefore, depending on the region within Europe, French, German, Spanish and Russian may be used to facilitate communication between employees with different mother tongues. Over the last decades English has become the most widely spoken *foreign* language in Europe as well as the most-widely used *working* language in Europe. The Eurobarometer, which was published in 2006 by the European Union, reports that 25% of the respondents use English daily at work and English was also regarded as the most useful language for one's personal career (Eurobarometer 43 2006: 12). It is thus not surprising that English has become firmly established as the language/lingua franca for (international) business in Europe. The prevalence and importance of English has not been ignored by researchers (e.g. Seidlhofer et al 2006, House 2002, Meierkord 1998). Since the mid-1990s research has taken on momentum and stretched its feelers to many subjects in the field (see e.g. Bargiela-Chiappini, Nickerson & Planken 2013 for an excellent overview of the numerous studies addressing various aspects connected with language in business). Seminal and general studies dealing with language/English used in business are, e.g. the special editions on English as a lingua franca in international business contexts (Nickerson 2005) and the two special editions on language matters in the Journal of Business Communication (Louhiala-Salminen & Rogerson-Revell 2010 a and 2010 b).

Research that is most relevant for this paper addresses the aspect of languages other than English used in the workplaces. Poncini (2002) analyses business meetings with multicultural participation and focuses on how language is being used to construct business relationships and corporate culture. Gunnarsson (2006) and Angouri (2008) explore the language practices and multilingualism in international companies in Europe. Another set of studies have analysed the employees' perception of working in English and their experience. Thimm et al. (2003) report on communication experiences and expectations of men and women in different work settings as well as gender differences in communication situations. Rogerson-Revell's (2007) valuable study addresses language issues such as participation and language challenges of non-native speakers in multilingual meetings. Kankaanranta & Louhiala-Salminen (2010) and Angouri & Miglbauer (2012, fc) present research results on the perception of employees concerning the use of English and other languages as well as the challenges of working in English.

This paper is situated in this strand of research and presents the perception of employees on the use of English and what results can be drawn for teaching business English in tertiary education. Before these results are outlined, the data and the methodology are presented in the next section.

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3. Methodology

This paper draws on interview data with employees of 5 companies and 1 NGO in Zagreb, Croatia and Belgrade, Serbia. The companies operate in the area of telecommunications, finance and manufacturing and have English as their official company language. The interviewees were between the age of 23 and 45 years but the majority of them were in their late 20s and early 30s. The interviews lasted between 35 and 90 minutes, whereas the majority lasted around 60 minutes. The interviews were conducted in English and were digitally recorded on the companies' premises. The reason not to use either Croatian or Serbian, despite the fact that the local language and mother tongue is the language of the people's private lives and private experience (Levy & Hollan 1998: 338), is a very simple one: The interviewer's command of either of these two languages does not go beyond simple communication and the interviewees' command of English was at a very high level.

This data is taken from a larger project on work characteristics in multinational companies in Croatia and Serbia. This region was chosen due to historical reasons and the relatively new phenomenon of multinational companies operating in this region (see Miglbauer 2010 for more details). The employees were interviewed about their workday, work routines, communication, work with expatriates, status of their workplaces, to name but a few topics addressed.

The data was coded according to the Grounded Theory (Glaser & Strauss 1967, adapted and revised by Strauss & Corbin 1998). No pre-conceived conceptions were applied as "the data speaks for itself". Thus open coding was used, which means that according to the topics that appeared in the interviews, corresponding codes were applied to the data by doing a "microanalysis which consists of analysing data word-by-word" (Strauss & Corbin 1998: 65). The codes have been put into more specific categories and the ones relevant for this paper are the role of English, the role of local languages and challenges of using English. The analysis of these categories is presented in more detail in the next two sections.

4. Employees' perceptions on the use of English and other languages

(1)   [English] plays a very eh (.) big role (..) I think eh (.) it's obviously widely spoken (.) in the business community (.) […] obviously the job is such that eh you communicate with eh (.) a very wide range of people in terms of geography in terms of background (.) so it's really great communication tool

Working in a company where English is the corporate and working language results in English being very prominent in everyday work life. It is uncontested that English has become the language to use when doing business and it is the accepted language to use when communicating with members of the business community when there is not a shared L1. English functions as a tool, as a means to facilitate contact and build relationships which may be essential for the company's daily business. It is the linguistically heterogeneity of a group of employees which impacts both employees and the companies. Some research has shown how diversity among the staff influences their performance (see e.g. Lattimer 1998, Kochan et al. 2003). Taking the language aspect into consideration, it means that employees need to be skilled in successfully communicating with people of many different backgrounds, with different accents, different levels of English and differing communicative norms.

Talking about communicative norms, when English serves as the company language, official communication occurs in English, as this interviewee points out:

(2)   I mean all eh our written documents are in English (.) reports eh website contracts eh applications so (.) even our internal communication between ourselves when it's eh official it's in English so it's (.) English all the time.

All the documents that are disseminated to a wider audience are written in the corporate language, such as texts that are used for branding purposes on the internet. Internally, English is

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used for HR affairs, such as work contracts as well as technical programmes/applications, as the interviewee points out. Official internal communication, such as meetings and communication with other subsidiaries (e.g. by phone and email), is also conducted in the official corporate language. However, this quote also points to the use of local languages in the workplace. By saying 'even our internal communication between ourselves' the interviewee reveals that the employees share the same mother tongue but use English when/because the communicative situation demands it.

According to Vollstedt (2001: 103), "[t]he more employees are involved in the international communication, the more English is used", and adds that whereas English is used in most contacts between employees with different mother tongues, not all communication takes place exclusively in English. Similarly, Fredriksson et al. (2006: 406) draw from their research the fact that introducing English does not automatically mean its adoption, "nor does it make it 'shared' throughout the organization." And Nickerson concludes that "[c]ommunicative events are considerably more complex than the label English as a *lingua franca* would suggest." (2005: 371; italics in original).

So, what does this all mean when taking a closer look at the complexity of language use in multinational and multilingual workplaces? If English is neither the 'exclusive language' nor 'shared throughout the organization', why is it not used and what happens then to facilitate communication? Research shows that as soon as it is not necessary to use English for communication with each other because the interlocutors share L1, the communication occurs in L1 (see e.g. Angouri 2008).

(3)   I mean we don't (.) speak English you know here in the office because we're all Croatians so

(4)   well we're not like trying to speak English whenever possible you know only when there is the need

Despite English being the official language, there is no need to speak English if there are employees working in the same office who share L1. This also means that the local language, which is the easiest language option, has an interpersonal function of showing solidarity. Small talk and talk not necessarily connected with the job are carried out in the mother tongue. Yet, as one interviewee adds, it does not matter how big the group of people is, if there is one person who does not share L1, then English is used (however, see Ailon-Souday & Kunda's study (2005) about how the local language is intentionally used to exclude the non-local employees). Nevertheless, the communicative events are getting more complex – to borrow Nickerson's phrase – when the communication leaves the office and moves to communication between subsidiaries as the next quote shows:

(5)   we don't speak English between us but (.) with all of our offices except for the Belgrade one Slovenian one (.) eh we speak English so Czech office (.) Polish office Austrian office Russian office Bulgarian Romanian whatever (.) we speak English

Whereas English is used to communicate with colleagues in other subsidiaries all over Europe, the situation with offices in the region (in this case the Western Balkans) is slightly different. Interviewees who commented on the communication in the region refer to the fact that they all use a "regional language" when talking to each other: *"when we work (.) I mean together with Belgrade or Slovenian office we communicate in (.) ((laughs)) we call it REGIONAL language (.) they talk in Serbian we in Croatian but we understand each other"*. Depending on the history and the proximity of languages, regional or "mixed" languages replace English as the lingua franca, such as in the Yugoslavian successor states (Miglbauer 2010) and in Scandinavia (Louhiala-Salminen et al. 2005).

Having set the field about language use in multilingual workplaces, the question arises what the perceived challenges of employees are when working not in L1 but L2 or L3. This will be addressed in the next section.

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5. Challenges of using English in the workplace

Despite a high standard of English, the interviewees have voiced challenges connected with working in English. These challenges are in the areas of vocabulary, phonology and the use of English for specific functions. The need to speak in a foreign language is indeed a challenge in itself.

> (6)   Of course it's not ehm (.) comfortable for us (.) to switch to English all the time because we cannot express ourselves in English as we in eh (.) our mother language but (.) it's not a problem because I understand that eh I imagine if I (.) would be in that situation I would like (.) or I would appreciate very much that others are speaking the language that I can understand so it's (.) minimum respect to others

No matter how high the command of English is, there is always a difference between speaking L1 and L2. Obviously it is not a problem but it is uncomfortable, at least sometimes. However, this interviewee also shows that using L2 as a working language is simply the reality in today's multinational workplaces, and, in order to enable access to communication for everyone, English is the language to be used.

Another challenge reported is the 'fear' of talking to native speakers of English, particularly at the beginning of employment in a multilingual workplace.

> (7)   Well I guess all the people have a barrier (.) at the start (.) when (.) they are talking to a native speaker (.) yeah they think oh he's gonna (..) you know track my mistakes :and: ((laughing)) you know they test me because of them

Most communication in English in international business in Europe occurs between non-native speakers of English or speakers who use English as L2 or L3 (Kankaanranta & Louhiala-Salminen (2010: 205). Kankaanranta & Louhiala- Salminen (2010: 207) report in their study that whereas communication with native speakers was considered hierarchical with the roles of teacher-student because people with English as their L1 can "exploit […] their mother tongue to the full", in non-native speaker conversations, everybody felt they were on the same footing. My data confirms their research result. The example above already points to the (wrong?) impression that native speakers assess non-native speakers' command of English. It also hints that not being able to speak English like a native speaker may be disadvantageous. Some interviewees claim that speaking to non-native speakers is, indeed, different to and more comfortable than speaking to native speakers. Interestingly, they also add that native speakers sometimes have problems in understanding non-native speakers' English (see e.g. Miglbauer 2010), which underlines Briguglio's claim that the "responsibility for developing the skills for English as a global language falls on all students, be they first or second language speakers of English" (Briguglio 2012: 123).

Interviewees also encountered challenges in the area of vocabulary. And as examples 8 and 9 show, it is both in the areas of general as well as special terminology.

> (8)   I was very fearful at the beginning in my first year I really was trying to prepare :thoroughfully and to think thoroughfully: ((laughing)) about what am I gonna say especially in terms of that terminology and I was using that black legal dictionary

> (9)   for me it's relatively easy to speak about my core eh job my core business and expressions within that […] but if we have to expand our conversation to some private things to (.) things around us I am faced with some difficulties

Specific terminology can be acquired with the help of dictionaries and specialised books relatively quickly and easily. Talking about business-related topics is not reported as challenging. However, some of the interviewees admitted to having difficulties in extending their communicative skills to small talk and private-related topics. This aspect has also been reported by Louhiala-Salminen et al. (2005).

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Different non-native speaker accents in English also sometimes pose difficulties in enabling or having successful communication.

> (10)   there is some kind of various accents various people from the various offices talk (.) some of them talks very strange English :for me: ((laughing)) with (.) ((xxx)) from (.) Polish colleagues then from you know from Czech Republic (.) they have a specific accent

In contrast to Rogerson-Revell (2007) who covers perception and difficulties with native speaker accents, the interviewees in my data do rather talk about non-native speaker than native speaker accents. Most interestingly, even though they are all native speakers of a South-slavic language, they mostly mention "funny" accents in other Slavic language speakers' English or the inability of Austrian German speakers to pronounce plosives: *"On a daily basis I had to communicate with [company's name] or [company's name] or whoever (.) and ehm (.) and there is one guy who speaks funny English language actually he doesn't speak English good and eh this guy mixes eh "b"s and "p"s".*

So to summarize, challenges occur on the language and on the communicative level. Based on the research results, the discussion in the next section will provide suggestions of which aspects of language teaching should be included in instruction and how selected course books take up these aspects.

6. Discussion or how best to prepare business students for a complex linguistic reality

The reality in multilingual workplaces varies depending on the company, the location and the background of the staff members. However, language and communicative skills in L2 have become essential for multinational companies and their success (e.g. Fredriksson et al. 2006, Feely & Harzing 2003, Charles 2007).

Research (e.g. Gunnarsson 2006, Angouri & Miglbauer 2012, Nickerson 2005) has revealed that English is the common sense language to use to communicate with people, no matter whether it is the company language or not. However, as soon as it is possible to communicate in one's mother tongue, then it is L1 which is used for communication. There is also a difference in language use regarding function – whereas English is rather used for official written and oral communication, it is the local language that is used for small talk or "office talk". Challenges when using English as a foreign language are numerous, be it the fear of speaking to native speakers or the difficulty in comprehending different non-native speaker accents in English.

So what are the suggestions for lecturers of business English which can be drawn from research? Which skills are necessary for business students to have in order to stand the test of working in a multinational company?

Based on my research, I would like to highlight four broad areas, which seem to be most vital: diversity, written skills, general business terminology and interpersonal communication skills.

As most communication in business occurs between non-native speakers, the aspect of diversity in accents in and varieties of English cannot be neglected any longer (see also Briguglio 2012). This is not to say that grammatically incorrect English should be taught, but English which is regarded as correct but spoken by speakers with non-native accents should be used in audios. Depending on the region in Europe, a focus could be put on non-native speaker accents which students may most likely be confronted with. For instance, due to the geographical location and the fact that many Austrian companies have subsidiaries in Eastern and South-Eastern Europe, Austrian graduates of business studies are most likely to work with colleagues in subsidiaries in Eastern- and South-Eastern Europe and exposed to Slavic accents in English. Coursebooks (e.g. MacKenzie 2011, Duckworth & Turner 2008, and Cotton et al. 2011) have included non-native speakers in their audio files in order to portray the linguistic reality of present day workplaces.

Additionally, it may be worthwhile to refer to L1 interferences in the most relevant languages

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so that graduates are aware of typical peculiarities in other people's English (see example about the difficulty of pronouncing plosives above). Swan & Smith (2001) are a valuable exception as they have included an overview of L1 interferences of quite a few languages in English in their teachers' book.

Regarding written skills, business correspondence in the form of different types of emails is undoubtedly highly relevant. Being able to have written fluency in a broad area of different contexts (e.g. dealing with orders and complaints, writing sales emails and internal emails) is essential for today's employees and coursebooks usually address different aspects of writing. Briguglio (2012) found out in her case study that reports for internal use are mostly informal. Nevertheless, different types of business emails demand a particular level of formality, therefore teaching different registers is still of utmost importance. The more so the more diverse the clients and colleagues are.

Admittedly, what I have named 'general business terminology' may be a bit of a contested area. Employees report that specific terminology is acquired very quickly and fast on the job. However, having acquired basic vocabulary of the most important areas in business during one's university studies is undeniably advantageous and essential. Obviously, it is debatable about where to draw the line about what counts as specific and general business terminology. One way to deal with this aspect is to decide how specific the terminology needs to be in a class based on the individual students and their needs.

Having a high level of fluency in oral communication has been stated as the most essential skill by quite a few studies (e.g. Kassim & Ali 2010, Briguglio 2012, Crosling & Ward 2002, de Beaugrande 2000). And it is both work-related oral communication (such as in meetings, negotiations, presentations, telephoning) as well as more private-related communication (small talk in the office, networking). Most coursebooks deal with work-related aspects of oral communication in various details such as pre-meeting small talk, negotiations, presentations, dining out (e.g. Handford et al. 2011). Yet what most coursebooks lack is specifically addressing interpersonal communication by teaching communicative strategies. Such strategies are, for example, how to enter and exit conversations, how to be negative diplomatically, how to make small talk with colleagues in the office, how to listen actively, how to exchange contact details and do networking, how to deal with communication breakdowns (see Duckworth & Turner 2008) but also the benefits of being able to ask questions to facilitate communication, for instance (see Cotton et al. 2011, Handford et al 2011). Technological advancement also increases the numerous options for communication. Kassim & Ali (2010) mention participating in teleconferencing as an important skill necessary and Duckworth & Turner (2008) have incorporated teleconferencing in their coursebook. The technicalities of applying a language in various communicative situations seem to be one of the most essential skills required by employees nowadays.

Like Crosling & Ward (2002) have already pointed out by saying that oral communication is significant and most of this oral communication is informal in nature, the most important suggestion that I bring forward is that oral communicative skills for work-related formal and informal conversations are highly important skills to acquire and consequently need to be focused on in teaching.

As a last point, I would like to highlight which impact the fact that communication in English is most likely to occur between non-native speakers of English may have on teaching English in the future. One of the interviewees in my data says

> (11) When you speak to somebody who's a native speaker (.) then it's difficult for you to understand him and eh for him to understand you […] but (.) you know when you speak between yourself you know like people from this region or Central Eastern Europe then you can understand yourself

The interviewee unfortunately does not give any reason why it is difficult for both native speakers and non-native speakers of English to understand each other. However, what is of more

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importance is the reference to non-native speakers forming their own group, who 'can understand each other' both linguistically but also by familiar and similar kinds of communicative behavior. Native speakers of English are increasingly 'othered' by non-native speakers as they do not belong to the largest group of employees in international companies. They use English as their L1, whereas the others find themselves in the same boat when struggling with language. So, the question arises what this may mean for teaching English to business students and employees in the future and what kind of English should/will be taught in the future. Will it be some 'Euro-English'? Seidlhofer propagated this idea already in 2001 but this question can only be answered by the future.

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Evaluation of an ESP coursebook for students of computer programming

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Abstract. Choosing the right coursebook appropriate to the students' interests, levels and goals of the course is difficult in most cases. The aim of this paper is to evaluate the coursebook 'English for Information Technology 1: Vocational English Coursebook' which has been planned to be used at Kırklareli University - Luleburgaz Vocational College. The students are Computer Programming students who have a basic knowledge of General English (GE) and need an elementary English course at their field. The aim of the research is to decide on the efficacy and appropriateness of this coursebook to the overall aims of this specific course. In order to achieve this, the checklist designed by McDonough, Shaw and Masuhara (2013) has been used. As a result, it was found that in general the coursebook is suitable to the goals of the course and sometimes with necessary supplementation it can be much more beneficial.

Keywords. Basic level, computer programming students, coursebook evaluation, english for special purposes.

1. Introduction

English for Special Purposes (ESP) is different from English as a Second or Foreign Language (ESL, EFL) and the most important difference lies in the learners and their motives for learning English. ESP learners are generally adults or young adults who have already had General English (GE) knowledge and are learning the language for their professional, job-related life. The Computer Programming students as ESP learners therefore taking vocational English course need more language in context covering subjects such as parts of computer systems, websites, databases… than grammar and language structures irrelevant to their interest and the aims of the course.

However, it is mostly hard to find appropriate ESP materials for ESP students with basic knowledge of English. Besides the materials at this field have to be updated very often because of the improvements at technology and such an update is not always possible because of economic reasons. Therefore the coursebooks written for Computer Programming department such as 'Basic English for Computing (Glendinning and McEvan)' latest update at 2002 and 'English for Computing (Boeckner and Brown)' latest update at 2001 are the mere ones at the area and as is seen they do not have recent versions. Thus, in our vocational foreign language course, after using the above mentioned books for a few years which turned out to be out of date, 'English for Information Technology 1: Vocational English Coursebook' is being planned to be used. As a result, it is decided to be necessary to evaluate this coursebook's strengths and weaknesses.

In this context, the composition of this paper involves the characteristics of ESP materials, student - teacher roles, basic level computer programming students, the coursebook evaluation, findings and conclusion.

2. The characteristics of ESP materials

Taking part at different branches of the same trunk, ESP and GE coursebooks may seem very different from each other. This is mostly because of the content of the ESP books and the balance of skills being developed (Cunningsworth 1995). The main difference between ESP and GE is that ESP is an approach to language teaching in which content, materials, techniques and

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methods of language learning are based on the learners' reasons of learning (Hutchinson and Waters 1987). ESP learners are learning the language for their future job-related needs and they are aware of their needs. On the other hand GE course aims to enable students to develop their all-round language skills in the target language in order to make students speak foreign language outside of the classroom.

The characteristics that is peculiar to ESP has been identified by many professionals. Yet it is enough to mention only one of them which is said to be modified version of previous ones. At 1997 Japan Conference on ESP, Dudley-Evans (1998) made a distinction between absolute and variable characteristics of ESP and arranged them as follows.

Absolute Characteristics:

- ○ ESP is planned according to the private needs of the learners;

- ○ ESP uses the necessary methodology and activities of the disciplines being served;

- ○ ESP is based on the necessary language, skills, discourse and genres in order to serve these activities.

Variable Characteristics:

- ○ ESP especially deals with or might be related to specific disciplines;

- ○ ESP's methodology or techniques might be different from GE methodologies;

- ○ ESP is mostly designed for adult learners; yet, it could be applicable for learners at secondary school level;

- ○ ESP is generally used for intermediate or advanced levels;

- ○ Though being in need of some basic knowledge of the language rules, it can be used with beginners, too. (Dudley-Evans 1998: 4-5).

Although most of the above mentioned characteristic may apply to the features of GE, ESP materials are expected to be in advance of GE materials, as they specially have been prepared to meet the specific needs of a specific group of students and these could not be met completely by GE materials (Cunningsworth 1995).

3. Student - teacher roles

The roles of teachers and students are to some extent different from those in GE course's. It is mostly because that experts in the field do not have enough English skills to give the course which is also the reason that we need ESP courses (Madeleine 2007:454-455). Besides even they have the good English skills still they are not language experts which means that if teaching a language is so simple, everybody knowing the target language could also teach it. However, in order to teach a language one should be aware of the language such as knowing the language items, knowing the properties of a language, having an education on language teaching methodologies and so on. Though, English teachers giving ESP courses are good at not only English but also the system of that language, yet they do not have enough knowledge about the specific area of vocation. This is the most important problem that we have in ESP classes.

ESP teachers on one hand, as Dudley-Evans and St. John (1998) suggest, have five important roles in teaching environment: "teacher, course designer and materials designer, collaborator, researcher, evaluator." Some of the roles mentioned here might be similar to the ones necessary in teaching GE but when it comes to teaching in a specific area teachers need that specific knowledge at first in order to carry out these roles eficiently.

ESP students on the other hand as mentioned before are mostly adult or young adults and have established in their professions and are good at their subject knowledge that the teacher does not have (Cunningsworth 1995). At this point, it seems that the students' and the ESP teachers' roles

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coinside which means that in order for an effective course they have to collaborate by pooling their knowledge and expertise.

To sum up, the role of a teacher in ESP class is to: organize programs, set goals and objectives, establish a positive learning environment, evaluate students' progress and what ESP students bring to class are these: focus for learning, subject matter knowledge, adult learning strategies (Schleppegrell, M. and Bowman 1986).

4. Basic level computer programming students

As mentioned before most of the ESP learners are thought to have at least intermediate level of English. However, in Turkey in most of the Vocational Colleges as in our school, students do not have enough knowledge of English when they come to higher education. Thus at their first year, we give them an elementary course of English and also Computer Programming students in this case get an elementary course in their first year. They get four hours of course in a week in GE and in both terms of an academic education year. However, in their second year they are expected to have two hours course of Vocational English which is expected to be arranged by the course teacher.

With the development of technology every year new things come and go so as the materials should be renewed in this field. Though the changes, the coursebooks are not renewed every year and in turn being ineffective in the field. As teachers of English teaching ESP we try to choose, adapt, design and supply appropriate materials by taking the methods and approaches of language teaching, especially ESP, into consideration.

5. The coursebook evaluation

In order to evaluate the coursebook, a checklist designed by McDonough and Shaw in 1993 and reedited by McDonough, Shaw and Masuhara (2013) are used. The reasons of choosing this checklist are these; it is the one in the area that has been renewed recently and it is found comprehensive enough to evaluate a coursebook when compared to the other existing checklists.

According to Cunningsworth (1995) though the content of ESP books may look different from that of GE coursebooks, and the skills being developed may have a different balance from those in GE coursebooks, the guidelines for the evaluation of these coursebooks may be used for ESP materials. Although McDonough, Shaw and Masuhara's checklist is not designed especially for ESP coursebooks, it can be used for this purpose because of its being comprehensive enough to do so.

The checklist is composed of two parts: 'External Evaluation' and 'Internal Evaluation'.

5.1. The external evaluation

The external evaluation as is evident from its name, is the general examination of organization of the coursebook. It is in a way, reading and thinking on author's /publisher's explicitly stated ideas about the book. In order to do this, first we need to look at the explanations or the claims made at the cover of teacher's/student's book and the introduction and content table (McDonough and Shaw 2003). While examining we have to keep in mind that the claim of the book and what it really includes should support each other. Below external evaluation items are listed and examined according to mentioned coursebook.

1. The intended audience

   The book does not have an 'Introduction' part but at the back cover of the book, the audience is said to be students in vocational education and also company employees in training at work.

2. The proficiency level

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It is written on the book that it is designed for basic level students who now require an elementary (CEF A1-A2) English course at their field of study.

3. The context of material use

The context of the book is claimed to be composed of topics about the latest developments in information technology and relevant to students' needs.

4. The presentation and organization of language

The book consists of 8 units and each unit is divided into 5 subheadings. Each unit is a combination of all skills: listening, reading, speaking, writing, vocabulary and also grammar. Every unit ends with a 'business matter' page. These pages especially focus on using the language and context that is learned in the units.

5. The author's views on language and methodology

It is said by the author that the book combines a strong grammar syllabus with the specialist vocabulary activities with language skills that learners need to succeed in their field. It appears that this textbook is aimed to focus on grammar structures of English and vocabulary exercises and at the same time the author tries to include these into the skills development exercises.

6. Are the materials to be used as the main 'core' course or to be supplementary to it?

English for IT coursebook is designed as a 'core' coursebook and it is supplemented by a CD-Rom with interactive glossaries in British and American English and full coursebook audio in mp3 format, on-line supportive materials for teachers including teacher's notes, editable tests and multi-lingual glossaries.

7. Is a teacher's book in print and locally available?

There is not an available printed teacher's book but on-line backup for teachers is available.

8. Is a vocabulary list/index included?

Vocabulary list is not included in the coursebook, instead there is an interactive glossary which comes with CD-Rom of the course package.

9. What visual material does the book contain and is it there for cosmetic value only or is it integrated into the text?

There are necessary amount of real photographs and some drawings on the pages and they are not used for aesthetic value. They are there because of making a connection with the text and to evoke students' curiosity and give them some clues about the exercises.

10. Is the layout and presentation clear or cluttered?

The layout of pages are clear and they are ordered in the same way. For instance, each unit has a topic and that topic is divided into titles and each title is processed with various exercises, texts and so on.

11. Is the material too culturally biased or specific?

Though this is not a GE coursebook in which we might come across cultural aspects mostly, teaching how to communicate with people of different nationalities, how to use the right words to speak politely are aimed.

12. Do the materials represent minority groups and/or women in a negative way?

As the book is on business this question can be discussed as whether the book gives place to businesswomen or not. At this point it can be said that the book includes

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businesswomen photographs and in most of the listening dialogues there is a woman character, so it represents women in a positive way.

13. What is the cost of the inclusion of digital materials?

As the digital materials are available on-line and the CD-ROM is included inside the book we do not need to pay extra money for them.

14. The inclusion of tests in the teaching materials; would they be useful for this particular learners?

The online editable tests are a good way of practising what has been learnt yet, as said by the writers they can be editable and as teachers we might sometimes need to make slight changes to make the exercises more attractive or more appropriate to our students. Besides students may solve these tests on their own.

5.2. The internal evaluation

This analiysis is aimed to investigate the material deeply. This kind of analysis is expected to be made in order to analyse the extent to which prementioned factors at the external evaluation stage match up with internal consistency and organization of the materials stated by the author/ publisher (McDonough, Shaw and Masuhara 2013).

1. The presentation of the skills

Though they are not seperately in content page, all skills of language are integrated in the units. For example, in content page, unit one is divided into three catagories: function, language and vocabulary. However, when we look into the unit it starts with a speaking activitiy which asks students to think about their country's greeting custom. Then in the second activity there is a fill-in reading dialogue on greeting people and after that students listen to and repeat a dialogue which is followed by an introducing yourself (speaking) activity and so on. Another page starts with a new subtitle of the unit and this is organized in the same way. Thus after examining all the units it is observed that all the skills in the book are integrated and given importance. Yet activities to improve listening and speaking skills seems to be given more than the reading and writing but this is parallel to our students' needs and course's aims.

2. The grading and sequencing of the materials

There is not a word in the book that claims to have a grading system. Yet after analysing, it can be said that Unit 1 starts with 'Introducing Yourself' which is associated with working environment and 'present simple tense'. Unit 2, titled 'Computer Systems' includes 'comparatives, superlatives, present continuous' and this shows us that the units are organized around language structures ranging from simple present to present perfect. In a way, this kind of grammatical arrangement seems to be based on from easier structures to more difficult ones and besides students' level of language is taken into consideration while choosing the grammatical structures. This lack of especially detailed grading and sequencing of topics does not effect anything in our teaching environment.

3. Where reading/ 'discourse' skills are involved, is there much in the way of appropriate text beyond the sentence?

The reading texts are given in contexts and appropriate to the relevant topic such as data storage, transaction security, IT career and so on… which are also linked to writing, vocabulary, and speaking activities. Besides with the help of these texts scanning, skimming, identifying skills are practiced. Also there are lots of dialogues that take students into the working environment and give them some practise on possible working environment language.

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4. Where listening skills are involved, are recordings 'authentic' or artificial?

   The texts of listening materials is not authentic but it seems that the writer has tried to make them appropriate to the real ones. Besides in some listening texts the people are from different culture so as the performers try to perform the listening to seem that they are foreigners. For instance in one of the texts there is a person from Kuwait and the one voicing him try to sound like he is Kuwaiti.

5. Do speaking materials incorporate what we know about the nature of real interaction or artificial dialogues offered instead?

   The speaking dialogues are often related to the office environment and they represent a possible situation that the learners are going to be in when they are working in the future, for example, practising a phone call to the company IT help desk or talking about a problem with your computer. In a way there are lots of role play activities which encourage students to use the language that has just learned and apply it to a real dialogue.

6. Are the tests and exercises related to (1) learner needs and (2) what is taught by the course material?

   As the students using the coursebook are elementary learners and in need of this level vocational English, it can be said that the tests and exercises all are related to the needs of learners. Also the things that the coursebook teachers and practices are interrelated.

7. Do you feel that the material is suitable for different learning styles… and is it sufficiently 'transparent' to motivate both students and teachers alike?

   Generally there are three types of learners: visual learners, auditory learners and tactile (kinesthetic) learners.

   Visual learners learn best with pictures, photographs, diagrams and drawings and they mostly take notes by drawing charts, graphics or pictures about the things they see and learn. The coursebook that is being analized includes activities that appeal to students of this learning type. For instance, an activity asks learners to make a chart of a passage after reading in order to summarize it. Also listening-reading texts or such kind of activities include pictures or photographs and in another activity the vocabulary is shown in boxes.

   Auditory learners learn by listening. This kind of learners repeat what has been listened in order to insure permanent learning. Listening texts or role play activities in the coursebook can be beneficial to this kind of learners.

   Tactile learners, on the other hand, learn by doing, touching. This kind of learners can not focus on the lesson unless they take part in. For this kind of learners learning environment can be arranged as a real office environment and we can ask them to take part in role play activities that is given in the book. The course teachers are great importance in learning situations for this learners in order to give them a chance to attend the activity.

6. Findings and conclusion

After examining the book both externally and internally, it is observed that things that the author/publisher claim are observed in the coursebook. After using some units of it in class, it is seen that students attend the lesson and try to do the exercises both in groups and individually. The activities are found appropriate to the interests and levels of the students and the activities are also approved for the aims of the course.

As for the price of course package when compared to the coursebooks at the same field in

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our country, this coursebook is affordable and when I sent an e-mail to the Publisher they immediately answered back.

In sum, though in some situations students found it easy to use their own language as usual, generally they tried to speak in English while doing the exercises.

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Teacher performance in university lectures: A contrastive analysis of L1 and L2 discourse

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Abstract. This paper focuses on a research study into Content and Language Integrated Learning (CLIL) at the tertiary level, in Greece and it aims to examine the organizational and linguistic features of lectures. A contrastive analysis of six lectures on similar topics delivered by the same university teachers in their L1 (Greek) and L2 (English) was carried in order to determine similarities and differences in their academic discourse between the L1 and L2 and to assess their implications for teacher training. The design of the research uses qualitative methods and it draws on systemic functional linguistics and, more specifically, on the notions of genre and phase. Analysis of the data reveals that the Greek lectures exhibit a clearer organizational structure, a higher use of conclusion markers and a wider range of stylistic choices. The findings suggest that there is a need for language-oriented teacher training in CLIL university settings.

Keywords. Academic lectures, CLIL, discourse analysis, phases, teacher training, tertiary education.

1. Introduction

The past decade has witnessed some profound changes in European higher education following the Bologna agreement which aimed at standardizing the higher education systems of the 45 signatory countries (Benelux Bologna secretariat 2007-2010). This 'harmonization' has led to an increased mobility of students and academic staff which had as a consequence the growing implementation of English-taught programmes within the European higher education area (Wächter & Maiworm 2008). Although learning through a foreign language in university contexts is hardly new (Wilkinson 2004), what is novel is the large applicability of Content and Language Integrated programmes (CLIL) which offer a combined learning approach of subject matter and foreign language (Coyle, Hood and Marsh 2010).

Focusing on the Greek educational setting, the implementation of CLIL is still scant with hardly any institutional provision (Eurydice 2006). In particular, while some empirical research is conducted in primary and secondary levels, to our knowledge, very little has been carried out in the tertiary context. This study focuses on the contrastive analysis of the organizational and linguistic features of lectures. More specifically, the analysis will identify macro and micro levels of discourse used by content Greek teachers in the delivery of lectures in Greek (L1) and English (L2), and also, will pinpoint the similarities and differences in their discourse. The ultimate purpose of the study is to offer specific language objectives for CLIL teacher training.

For the analysis of the data the present study follows Young's model of phasal analysis (Young 1994) which is based on Systemic Functional Linguistics, SFL (Halliday & Matthiessen 2004) and genre analysis (Eggins 1994, Martin 1997). In a general sense SFL "seeks to explain the nature of language by examining the ways it is used to transmit experiences, feelings and attitudes, because it views language as part of a social system" (Halliday, in Young 1990: 3). From a functional perspective speakers make linguistic choices based on the context of the situation. This model has been proven useful in classroom settings as it highlights the role of language in the construction of knowledge. By using a SLF framework one can look into the way language is used and the way it is structured for use. Both these issues can be investigated with the use of genre analysis. Genre can be viewed as a staged, goal-oriented, social process (Martin 1997). Bhatia (1993: 16) points out that "each genre is an instance of a successful achievement of a

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specific communicative purpose using conventionalized knowledge of linguistic and discoursal resources". In general, SFL pays specific attention to language choices and the way these choices indicate the boundaries between the different stages and the functions of each stage.

Genre analysis treats lectures as a type of educational genre (Eggins 1994). Young (1994: 164-165), in a study on the structure of seven academic lectures from a variety of disciplines, made the observation that rather than having just a beginning, a middle and a conclusion, lectures should be seen as a series of interweaving 'phases'. Phases are defined as "strands of discourse that recur discontinuously throughout a particular language event, and taken together, structure the event". Put differently, "phasal analysis suggests that there are many beginnings, many middles and many ends" in a lecture (*ibid.*). Young points to the consistency of this phasal structure across different scientific domains and stresses that it characterizes both native and non-native spoken academic discourse. According to phasal analysis the macrostructure of university lectures consists of six types of phases, grouped into two broad categories: metadiscoursal phases which comment on the discourse itself and non-metadiscoursal phases which refer to the actual content of the lectures. The first group includes the *discourse structuring phase*, in which lecturers indicate the directions they will take in their lecture (including devices such as "first", "second", or "another issue"), the *conclusion phase*, in which the speakers summarize the main points made in the discourse (including markers such as "so, this is an example of" or "in conclusion"), and the *evaluation phase*, where the speakers evaluate the information transmitted to the audience (including devices such as "it is important" or "very interesting"). The second group includes the *interaction phase* in which the speakers maintain contact with the audience and ensure the content of the lecture is understood, the *theory or content phase* where theories, definitions and models are presented and, finally, the *exemplification phase* where theoretical concepts are explained through the use of concrete examples.

The importance of discourse markers in the successful delivery and comprehension of lectures has been pointed out by previous research. Chaudron and Richards (1986: 123) in an analysis of the effect of discourse markers on L2 lecture comprehension revealed that students were able to recall better the main points of a lecture when the lecturer used mainly macro-markers, that is, "discourse signals of the relationship between successive episodes and moves within the lecture" rather than using macro and micro-markers, that is devices which indicate links between sentences or functioning as fillers. Chaudron and Richards reached the conclusion that the former are mainly useful in following primary information while the latter assist only lower levels of information. Taking a different perspective other studies have focused on the relationship between the comprehension process and lecturing styles (Dudley-Evans 1994; Flowerdew 1994; Crawford Camiciottoli 2005). More recently, Dafouz Milne & Núñez-Perucha (2010: 213) made a contrastive analysis of lectures given in Spanish (L1) and English (L2) by the same speakers and reached the conclusion that "the Spanish data show more explicit signalling, a wider variety of stylistic choices, and a higher use of interaction devices and conclusion markers".

2. The study

The data of this study is based on the transcriptions of six university lectures (around one hour each, 45,000 words in total) delivered by the same teachers in Greek and English. The lecturers, two males and one female are native speakers of Greek and permanent academic staff at the School of Journalism and Mass Communications (Aristotle University of Thessaloniki). As self-reported in an interview following the lectures their levels of English ranged between high intermediate and advanced and all of them had previous experience in lecturing in the foreign language. In Greece, as in other European countries, university teachers specialize in a particular discipline in which they usually research and teach. Lecturers usually achieve a good standard in English through education abroad or personal experiences and interest. The lectures delivered in English were part of the International Programme offered by the School of Journalism during the spring semester 2013. The International Programme offers 16 courses in English and it aims to

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help Erasmus students become more internationally minded, by offering a better understanding of mediated communication in all its forms and by developing the productive, socially responsible, and creative role of its graduates in the various sectors of public communication and information on an international basis.

Twelve international students from various countries of the European Union (Spain, Germany, Poland, Sweden and the Netherlands) attended the programme which focuses on the areas of journalism, mass media, and communication. Their level of proficiency satisfies the B2 CEFR level, an official requirement by the School.

The lectures given in Greek were part of the official degree in Journalism and Mass Communications and were recorded during the same semester. The audience of these lectures was on average 30 students per group, all native speakers of Greek. The lectures cover similar topics in order to ensure homogenization of the material in both languages. Each lecture was audio recorded by means of a small pocket-sized digital recorder. Structured observations were conducted for all six lectures. Extra care was taken in order for the observations to be as unobtrusive as possible with the researcher taking field notes during the period of lecturing. One-to-one semi-structured interviews with the teachers and the students, following the lectures, were conducted with the use of a protocol based on a set of prepared questions and a set of open ones. This type of instrument is considered to be appropriate for gaining insight into the participants' behaviour and also allows for spontaneity (Dörnyei, 2007). It included open questions, probes (clarification questions) and questions on key topics. The interviews with the lecturers were conducted in Greek, the teachers' native language.

3. Methodology

The lectures were transcribed following the use of Gail Jefferson's system (2004). Phases were coded according to the following system (Tab. 1), the codes marking the beginning and end of each phase:

Discourse structuring phase <DS>
Evaluation phase <E>
Conclusion phase <C>

Table 1. Coding system

The present analysis is based on Young's theory of phasal analysis (1994) and it partly follows the taxonomy of metadiscourse categories and functions proposed by Dafouz Milne & Núñez-Perucha (2010). This classification of metadiscourse is based on two sources: The first one draws on the distinction between textual and interpersonal metadiscourse markers (e.g. Hyland 2005). Textual markers organize discourse and make it coherent and convincing while interpersonal markers allow speakers/writers to express their perspective towards their propositions and their audience. The second source focuses on the relationship and interdependence between macro-elements (phases) and metadiscursive devices or MDs, that is, "micro-linguistic devices used to signal a particular phase" (Dafouz Milne & Núñez Perucha 2010: 219).

4. Findings and Discussion

The analysis of the data reveals that the three lecturers use more metadiscursive devices when lecturing in their L1. The discourse structuring phase stands out as the most frequent type of phase in both sets of data (Tab. 2). In the following sections we focus on the types of markers used in each phase and we highlight the similarities and differences in their uses in both the L1 and L2.

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		Lecturer 1	Lecturer 2	Lecturer 3	Totals (n)
Discourse structuring	L1 (Greek)	36	30	24	90
<DS>	L2 (English)	25	20	21	66
Evaluation	L1 (Greek)	23	25	18	66
<E>	L2 (English)	15	15	8	38
Conclusion	L1 (Greek)	10	9	8	27
<C>	L2 (English)	2	2	3	7

Table 2. Number of phases in teachers' discourse in L1 and L2

4.1. Discourse structuring phase

The types of markers used in this phase are quite similar in both sets of data except for a higher use of topicalisers (marking the introduction of a new topic) in Greek (Tab.3).

<DS>		Lecturer 1	Lecturer 2	Lecturer 3	Totals (n)
Openers	L1 (Greek)	1	1	1	3
<DS-O>	L2 (English)	1	1	1	3
Sequencers	L1 (Greek)	3	6	4	13
<DS-S>	L2 (English)	3	4	2	9
Prospectives	L1 (Greek)	7	3	6	16
<DS-P>	L2 (English)	5	3	5	13
Retrospectives	L1 (Greek)	3	2	3	8
<DS-R>	L2 (English)	2	2	1	5
Topicalisers	L1 (Greek)	22	18	10	50
<DS-T>	L2 (English)	14	10	12	36

Table 3. Discourse structuring markers

With relation to the different <DS> subtypes identified, openers seem to take the same form and function in the Greek and English lectures. In particular, lecturers use openers at the beginning of the sessions in order to make an explicit opening of the lecture and to provide the content of the lesson. The symbol (.) marks a brief pause.

(1)   <DS-O> **Hallo** everyone (.) so let's begin now (.) let's see (.) a brief history of Greek TV (.) we'll talk about the origins the milestone years programmes and time zones <DS-O>

(2)   <DS-O> **Καλημέρα** σήμερα θα μιλήσουμε για τους διεθνείς οργανισμούς <DS-O>

       [Good morning today we will talk about international organizations]

The next subtype, sequencers, is realized in a variety of ways marking the direction of the lecture with metadiscursive devices. Temporal markers are evident in both sets of data, such as "first of all" "secondly", "πρώτον" (first), "δεύτερον" (second), "επίσης" (furthermore). The introduction of a new topic or a topic shift is marked by topicalisers in both corpora. Noun phrases functioning as headings and providing explanation of what is to follow are quite common as in example 3. In addition, a number of presentative devices are to be found in the English data usually under the form "we have":

(3)   <DS-T> **Η G7** (.) Οι επτά πλουσιότερες χώρες του κόσμου (.) Αμερική Αγγλία Γαλλία Ιταλία Γερμανία Ιαπωνία (.) η Ρωσία μπήκε αργότερα οκτώ (.) Καναδάς <DS-T> [**The G7** (.) the seven wealthiest countries in the world (.) the United States England France Italy Germany Japan (.) Russia joined later eight (.) Kanada]

(4)   <DS-T> **Economic measures** (.) **we have** cuts in salaries and pensions this has to be stopped (.) **we have** some structural reforms our tax collection system has to be more efficient more transparent (.) **we have** the same with our civil servants <DS-T>

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Topicalisers can also be found in rhetorical questions, usually in the form of question-answer or question-sequence-answer (example 5). Rhetorical questions are answered by the lecturer who does not pause for a student response as in example 6:

(5)   <DS-T> Now, the ideal would be to see or provide an introduction on two things **what are the characteristics of Greek-French relations**? **is it friendly of hostile?** one is that (.) the other would be to examine let's say the general position of France on how to deal with countries in Europe that create problems <DS-T>

(6)   <DS-T> **Ποιος είναι ο επόμενος οργανισμός που θα εξετάσουμε τώρα**; Η παγκόσμια τράπεζα είναι το επόμενο θέμα <DS-T> [**Which organization are we going to examine next**? The world bank is the next topic]

Prospective and retrospective markers are also to be found in both sets of the data. Retrospective markers are mainly realized through the verbal form "remember" to make a reference to information previously imparted by the teachers in the lecture or other lectures (examples 7, 8). Prospective markers, which are found in higher numbers, are mainly articulated through the use of the future tense + adverbial "later" and are used to refer to future topics or parts of the lecture or other lectures (example 9).

(7)   <DS-R> **Θυμάστε** αυτό συνέβη με μεγάλη σφοδρότητα στη Γένοβα το 2001 που σκοτώθηκε και ένας Ιταλός φοιτητής <DS-R> [You remember this happened with great force in Genoa in 2001 where an Italian student was killed]

(8)   <DS-R> You **remember** there are two basic arguments in this text one argument for protectionism where different countries might employ protectionist measures on cultural trade and the other argument is openness <DS-R>

(9)   <DS-P> As **we will see later** this is another argument in favour of protectionism <DS-P>

In the Greek data prospective and retrospective markers make sometimes a joint appearance. For example, we notice the appearance of manner clauses which exhibit past reference, as in "όπως ανέφερα πιο πριν" (as I mentioned earlier), together with the future tense + adverbial "later" (e.g. "αυτό θα το αναλύσουμε πιο κάτω" (we will analyse this later)):

(10)   <DS-R> Ωστόσο, με το πέρασμα του χρόνου η G7 έγινε ολοένα και πιο αναποτελεσματικός μηχανισμός **όπως ανέφερα πιο πριν** <DS-R> γι'αυτό και έχουμε τους G20 <DS-P> αυτό **θα το αναλύσουμε πιο κάτω** <DS-P> [However the G7 became less and less effective through the years **as I mentioned earlier** and this is why we have the G20 now **we will analyse this later**]

Most DS markers are found at the beginning of lectures but also make sporadic appearances throughout the whole length of the lectures marking the sequences where the lecturer imparts different kinds of information to the audience. A difference between the two sets of data was indentified in the use of topicalisers, especially relating to the level of specificity in the words employed to initiate a phase. The English corpus includes expressions such as "thing" or "topic", that is, nouns which have generalized reference (Halliday & Hasan 1976) as in example 11, while the Greek data show evidence for items that have more specific reference such as "ερώτημα" ("issue"), "επιχείρημα" ("argument"), or "κριτήριο" ("ctiterion") as in example 12. Such narrower referential items would make the discourse more accurate, enabling the students to understand the lecture in a more effective way, a point also mentioned by Dafouz Milne & Núñez Perucha (2010).

(11)   <DS-T> **So** as to give you some technical **things** <DS-T>

(12)   <DS-T> **Το ερώτημα** διασφαλίζει το ελεύθερο εμπόριο την ειρήνη και την ευημερία; <DST> [**The issue** is here does free trade ensure peace and prosperity?]

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4.2. Evaluation phase

As can be seen from Tab. 4 the Greek data show a higher number of evaluation markers (E), especially in the use of topicalisers and recapitulation markers.

<E>		Lecturer 1	Lecturer 2	Lecturer 3	Totals (n)
Topicalisers	L1 (Greek)	12	13	9	34
<E-T>	L2 (English)	11	9	5	25
Recapitulation markers	L1 (Greek)	8	8	6	22
<E-R>	L2 (English)	2	5	3	10
Prospectives <E-P>	L1 (Greek)	2	3	2	7
	L2 (English)	1	1	0	2
Retrospectives <E-RT>	L1 (Greek)	1	1	1	3
	L2 (English)	1	0	0	1

Table 4. Evaluation markers

It is interesting to note that the Greek corpus includes a wide variety of attributives which mostly evaluate points already made or act as a reinforcement to the sequences of the conclusion phase by offering judgment on information already passed on to the students. The lecturers tend to use adjectives such as *essential*, *crucial* or *controversial* in the Greek data (examples 13, 14). In the English corpus, however, and especially regarding the use of topicalisers, there seems to be a recurring pattern of repetition of the adjectives ''important'' and ''interesting'' which function as evaluative terms of the new topics introduced by the lecturers as in examples 15 and 16.

(13)   <E-T> Θα μπορούσαμε να πούμε ότι ο Παγκόσμιος Οργανισμός Εμπορίου είναι φαινομενικά πιο δημοκρατικός από το ΔΝΤ και την Παγκόσμια Τράπεζα **είναι ένα ουσιώδες ζήτημα** <E-T> [We could then say that the World Trade Organization is ostensibly more democratic than the IMF and the World Bank **it's an essential issue**]

(14)   <E-T> Παρόλ' αυτά ο Παγκόσμιος Οργανισμός Εμπορίου παραμένει **εξαιρετικά αμφιλεγόμενος** έχει κι' αυτός αποτελέσει τον κύριο στόχο διαμαρτυριών κατά της παγκοσμιοποίησης και του καπιταλισμού <E-T> [The World Trade Organization remains however **extremely controversial** it has also been the main target of protest against globalization and capitalism]

(15)   <E-T> **It is a very important issue to stress here as well** that the regulations of the World Trade Organization were shaped by the interests of the main parties in the negotiations <E-T>

(16)   <E-T> **And another important topic** is time zones <E-T>

What is worth mentioning here is that the lecturers seem to adopt a more conversational style in their delivery of the English lectures as opposed to a more formal academic one in the Greek sessions. This could be attributed to the teachers' concern to simplify vocabulary in order to enhance L2 comprehension, a finding also reported by previous research (Crawford Camitiottoli 2005, Dafouz Milne & Núñez Perucha 2010). However, it could be also attributed to the lecturer's difficulties with the foreign language. Despite having self-reported themselves as quite proficient in English and having taught for a number of years in the international programme it is quite probable that they might be facing language difficulties, something that can be corroborated by the interviews that followed. Nevertheless, there seems to be a tendency away from the monological nature of lectures where the teacher acquires an ''authorial expert status'' (Crawford Camiciottoli 2007) to a more interactive lecturing type which may resemble formal discussion or even informal conversation, especially in cases where the teacher uses remarks that digress from the lecture (Morrell, 2004).

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4.3. Conclusion phase

The Greek data show evidence of a higher number of conclusion markers (C) as can be seen from Tab. 5. These markers can be found at the closing of the lectures to make a summary of the topics covered or to recapitulate parts of the lecture.

<C>		Lecturer 1	Lecturer 2	Lecturer 3	Totals (n)
Closing	L1 (Greek)	1	1	1	3
<C-C>	L2 (English)	0	1	1	2
Recapitulation markers <C-R>	L1 (Greek)	2	2	2	6
	L2 (English)	1	1	0	2
Prospectives <C-P>	L1 (Greek)	3	2	2	7
	L2 (English)	1	0	1	2
Retrospectives <C-RT>	L1 (Greek)	4	4	3	11
	L2 (English)	0	0	1	1

Table 5. Conclusion markers

More specifically, recapitulation markers are used in an explicit way and include verbs such as *summarize* or phrases such as *as a conclusion* or *in short*:

(17) **<C-R> Εν ολίγοις** η κεντρική ιδέα της ελεύθερης οικονομίας συνίσταται στην πίστη ότι ο ανταγωνισμός της αγοράς που δεν επιδέχεται έξωθεν ρυθμίσεις και παρεμβάσεις τείνει προς την ισορροπία μακροπρόθεσμα <C-R> [**In short** the central idea of a free-market economy lies on the belief that the competition in the market, which does not allow for outside regulations and interference tends to balance itself in the long run]

Conclusion markers are also to be found in the English corpus, in much lower numbers, however, and when they appear they borrow words derived from the Greek language as in the following example where the lecturer uses the noun "epilogue" to end the session:

(18) <C-R> **Now an epilogue** the Greek TV history is without doubt an interesting one it has everything ah intrigues as you see development and notable stories the programmes as of every TV industry so there's a lot for many uses information entertainment a companion when you're doing household jobs and you want to have a friend <C-R> <C-RT> it is now a period of quality drop **as I told you before** <C-RT> but my estimation is it is going to reborn itself (.) thank you

In general, however, the English corpus is rather poor in conclusion markers, as in most cases there does not seem to be any specific signalling for the end of the lectures. The following sequence is a characteristic example of a rather abrupt way to end the session:

(19) <C-RT> OK then if you don't have any questions on the text **we've already discussed** more or less about the plan <C-RT> <C-P> **I'll be waiting** your plan <C-P> (.) and OK (.) that's it

4.4. Results from the interviews

The interviews with the students focus on their perception regarding lecture experience (attitude, what they appreciate in a lecture, self-rating of comprehension), their problems (difficulties with technical vocabulary, inadequate signalling on the part of the teacher, speed of delivery, concentration) and the strategies used to overcome these difficulties (note-taking, asking questions, peer help).

Of the twelve students who were interviewed 10 reported that lectures were the most common type of teaching style in their home university. Only 3 of the students reported to have had previous experience in integrated learning before. Most students self-rated their listening proficiency as "quite good", however, it is estimated that it is a level below than that required by university level, something which probably could be attributed to their limited exposure to the genre of formal lectures in the FL.

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When interviewed about what they appreciate more in their FL lectures all of them opted for more supplementary material (power point presentations, handouts) and a clearer presentation of the main points of the lecture by the teacher. In general, the students seem to appreciate a structured lecture with a clear breakdown of its stages, and they agreed that repetition of the main points and occasional synopsis during the lessons belong to the strategies that a good lecturer employs (see examples 20 and 21 from the interviews):

(20) He repeats the main mains which is good it helps to remember

(21) When I listen I concentrate better when the teacher says one, two, three for the topics it's easier to understand

Regarding difficulties most students expressed their worry over technical vocabulary as can be seen from the excerpt that follows:

(22) I thought in general the lectures were pretty difficult (.) the English language that is used (.) because I don't really have a lot of knowledge about the subjects and then I find it pretty difficult to understand (.) because they use a lot of terms I don't know

The strategies adopted by most students to overcome their difficulties include note-taking and marking the handouts given by the lectures, efforts to concentrate harder and asking questions to the lecturers. However, during the observation of the lectures it was noted that despite the lecturers' efforts to check the understanding of the content by asking direct questions ("Do you understand all these"? "Am I talking too fast"? "Are there any questions"?), there was limited response on the part of the students. When there was such a response in most cases it was simply to ask the lecturer to slow down his speech delivery. This reluctance could be attributed to their level of general listening proficiency but also to their difficulties with new concepts and terminology, a finding also reported by Hellekjaer (2010) in a study on lecture comprehension in English-medium courses in Norway. Overall, it seems that although the students involved are satisfied with the programme, listening to a lecture in a foreign language appears to be a difficult task for which they are not well prepared for. Therefore, content teachers need to help students achieve this goal and, during this process, they need to examine and evaluate their own lecturing styles.

The interviews with the lecturers focused on differences between teaching in Greek and English. It is interesting to note that all three lecturers stressed the importance of metadiscourse in the organization of the English lessons, as can be seen from what a lecturer said in the interview:

(23) In English you need to have a better structure to guide you through the different parts or else you might get confused and forget where you're going

It seems, then, that the use of metadiscursive devices is a strategy valued by both students and teachers which contributes to L2 lecture comprehension. In addition, teachers voice their concern about their speaking skills which they consider as "rather weak" in contrast to reading which they describe as "quite good". They admit that this weakness is the "cause of slow rhythm, too much repetition, shorter and simpler sentences, and directly translating from the Greek text". Indeed, they note that their difficulties with speaking in English but also the students' difficulties with comprehension lead them to frustration and to a simplification of the course content. This is quite a serious issue as it involves the quality of content provided by the CLIL lessons (Creese 2005). For a successful implementation of the CLIL approach, content teachers must ensure the learning of content at a level which adequately represents the standards expected to achieve in the native language. If due to the language difficulties of the students and teachers an excessive simplification takes place then we need to question the proper implementation of CLIL in these contexts (Coyle *et. al.* 2010). However, in this context, classroom observation has revealed that our teachers are linguistically capable of teaching content through English in the sense that they possess the general language skills and the specific terminology of their discipline. The lectures would profit, nevertheless, from a clearer structure in lecture organization and from an explicit use of metadiscursive devices during the different phases of the sessions, a strategy highly appreciated by both students and teachers in this study. On the whole, it seems that there

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is a need for language-oriented teacher education for content lecturers. It is standard practice in the relevant literature to recommend teacher training for content teachers or collaborative work in the form of team teaching by bringing together language and content academics (Coyle *et. al.* 2010, Marsh & Wolff 2007). In this framework some European universities have instituted compulsory language courses for content teachers as well as courses on pedagogical skills on English-medium instruction (Klaassen 2008). However, it needs to be pointed out that the lecturers in the present study seem to be rather skeptical in receiving some form of training to improve their language competences. Their reluctance lies mainly in the established notion that their main purpose is to teach content but it also could be attributed to their insecurity of handling the purely linguistic aspects of learning as one of the lecturers has pointed out:

(24) I have some problems with syntax and grammar myself and I don't think I am capable of pointing out what is correct in English. After all it is content what is important

It is obvious that the lecturers in the present study are unaware of the pedagogic complexity of the CLIL approach, in which content and language objectives share the same status, a finding also reported by Klaassen (2008) in a study at the University of Delft. It is clear that efforts should be made to sensitize teachers as to the advantages of integrated instruction. In this line, institutions should assume the key role in convincing lecturers as to the usefulness of CLIL and the pedagogies associated with it by actively implementing teacher training courses which would reinforce the lecturers' competence in English, providing them also with the opportunity to collaborate with language academics. Following the initiative of the Peninsula Technikon in Cape Town (Jacobs, 2007), such courses and seminars could effectively bring together language and content lecturers by offering an exchange of experiences regarding the use of pedagogical strategies and by encouraging the collaboration between these two groups of academics in a joint effort for the proper implementation of the content and language integrated approach.

5. Conclusion

This small-scale study has shown that, on the whole, university teachers use similar types of metadiscursive markers to organize their lectures both in the L1 and in the L2. The analysis of the data suggests that lecturers seem to replicate their lecturing styles and transfer types and linguistic realizations from the L1 to the L2, a finding also reported by Dafouz Milne & Núñez-Perucha (2010). Regarding the differences between the two sets of data it was observed that the Greek data exhibit more specific signalling during the phase transitions, especially when moving from one part of the lecture to another and when summarizing parts or the whole of the lecture. In addition, the Greek corpus features a wider variety of metadiscursive markers and also includes a set of terms which have more specific reference, something which allows for higher levels of comprehension.

Regarding CLIL considerations, this paper has attempted to offer a description of the characteristics of a particular teaching style (the lecture), which is the most common instructional method adopted in higher education. The above findings could be of benefit to university teachers and CLIL teacher training in tertiary education. In particular, FL lecturers could identify the connection between specific metadiscourse signalling and a clearer organization of the parts of the lecture, a positive strategy noted by both students and teachers in the interviews. More specifically, FL lecturers would benefit from having ready access to a comprehensive set of L2 markers used for moving to different phases during the lecture, which would be a useful tool for the teaching of content through a FL in a university lecture.

Overall, there seems to be a pressing need for specific language policies and teacher training programmes in CLIL university settings as the CLIL approach is increasingly becoming an important instrument in supporting the European Commission's objective of improving the FL competence of its citizens.

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Social media in professional development of teachers of business English

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Abstract. Rapid technological changes have greatly transformed the teaching world and put new demands on teachers. The need to keep pace with the developments in education and the world in general makes professional development for teachers more important than ever. Besides traditional conferences, seminars, workshops etc., a lot of new, virtual forms of professional development have emerged recently. The aim of this paper is to investigate and present some of the currently most influential social media that enable business English teachers to improve their practice and take part in creation of professional development programmes themselves.

Keywords. Blog, business English, professional development, social media, Scoop.it, Twitter.

1. Introduction

We live in the world that is constantly changing. Digital revolution that is currently taking place is having a profound effect on all aspects of human life - social, cultural and economic. It has dramatically altered teaching environment and forms and nature of communication, and has consequently led to a new approach to learning and teaching and changed the place and roles of teachers.

Nowadays, many documents emphasize the fact that teachers perform a key role in ensuring students' successful learning outcomes and quality education in general. Teachers also play a great part in carrying out reforms in educational system. Lock (2006: 664) calls them "agents of change in the educational system". Demands and challenges to which 21st century teachers have to respond are increasingly complex. They need to be aware of the highly dynamic nature of the world they live in and keep pace with its developments.

2. Professional development in the 21ˢᵗ century

Professional development has been one of the central issues in pedagogical literature in the past twenty years. The analysis of various books, articles and research papers has shown that the general view today is that professional development is:

○ a lifelong task, a continuing process. "Teachers are called upon not only to acquire new knowledge and skills but also to develop them continuously. The education and professional development of every teacher needs to be seen as a lifelong task, and be structured and resourced accordingly" (Teachers' Professional Development - Europe in International Comparison 2010: 12). Mann (2005: 112, taken from Maslach 1982) adds that "sustained teacher development may renew commitment and interest in teaching and thereby help to prevent burnout",

○ a bottom-up process, "instigated by individuals and groups" (Mann 2005: 105, taken from Cheng and Wang 2004). The responsibility for professional development has shifted from institutions to teachers themselves.

An important direction in teacher development in recent years has been a movement away from 'outsider' approaches to 'insider' ones. The former are often based on expert knowledge as well as general theories and principles that teachers apply to their own situations; the latter are locally based approaches that encourage teachers to explore their own contexts and construct

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their own knowledge and understanding of what takes place in their classrooms. In self-directed learning, teachers assume responsibility for setting goals for self-development and for managing and controlling their own learning. (Richards and Farell 2005: 13).

- ○ a reflective approach to practice. 21st century teachers are seen as reflective practitioners who are supposed to "subject their own beliefs about learning and teaching to critical analysis, take full responsibility for their actions in the classroom, and continue to improve their teaching practice (Farell 2008: 1, taken from Farell 2007, Jay and Johnson 2002, Valli 1997),

- ○ a process that encourages collaboration and "knowledge sharing among communities of practitioners, using face-to-face, virtual and blended communications" (http://www.p21.org/overview/skills-framework). Many authors, including experts such as Richards and Farell (2005) and Darling-Hammond (2006) emphasize the need to collaborate with other educators because it enhances individual learning. As Darling-Hammond (2006: 6) says, one teacher alone cannot possess all the knowledge needed in today's everchanging and everexpanding teaching environment.

The 90s of the 20th century saw the rise of online teacher professional development (oTPD), also called teacher e-learning. It first emerged within the professional development system of institutions of higher education, but has expanded in the meantime and become the integral part of teacher education in general. oTPD enables teachers to personalise their own development and choose the professional development path that suits their own "lifestyle, personal preferences and course requirements" (Noble 2010: 20). In other words, "learners are now selecting their own blend of technologies to make their learning experiences more congenial, manageable and appropriate to their needs" (Noble 2010: 20, taken from JISC 2007: 32). A phenomenon connected with online teacher professional development is networked teacher professional development (nTPD), which Reid and Ostashewski (2010) define as a subtype of oTPD which is "delivered in an online social networking environment that supports and encourages teachers to learn together, both formally and informally, while allowing them to retain control over their time, space, presence, activity level, and relationships".

Speaking of oTPD in general, Lock (2006: 675) emphasizes that it does not represent the replacement for traditional professional development, but "rather it is about thinking differently about professional development using community model approach where technology provides new spaces to facilitate learning and collaborative inquiry, designed to enhance teaching and learning".

3. Social media in professional development of teachers

Social media is becoming increasingly present in people's lives today. It has found its place in teachers' professional lives as well. There has been some research into the use of social media for professional development of teachers and the following two publications are particularly insightful in this area: *Tweeting for teachers: How can social media support teacher professional development?* (2011) by Julie McCulloch, Ewan McIntosh and Tom Barrett and *SMILE – Social Media in Learning and Education*, a summary of a project conducted form April 2012 to May 2013. Both publications explore the ways in which social media can become an integral part of students' and teachers' learning and identify challenges and opportunities that arise in that process. General conclusion is that not only this form of professional development is in line with the above mentioned features of the 21st century professional development, but it helps teachers to familiarize with the virtual landscape as well, and as a result they can become better "equipped to serve the learning needs of their students" (SMILE 2013: 8).

3.1. Social media: definition

In order to understand how social media can facilitate professional development of teachers, it

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is necessary to define this term and distinguish it from terms it is often confused with - Web 2.0 and social network.

Although terms social media and Web 2.0 are sometimes used interchangeably, they are not synonymous. Social media has actually developed from Web 2.0 and one "can refer to social media as a Web 2.0 innovation, but referring to Web 2.0 as social media is incorrect because it ignores all its less social aspects, such as blogs, YouTube, and so on" (Beattie 2011). Social media and social network do not denote the same concept either, because social media is a wider term, and it includes social network as its subtype.

In the SMILE project (2013: 12) social media is defined through the list of following features:

- ○ social media challenges traditional models,
- ○ social media allows people to communicate,
- ○ social media allows people to collaborate,
- ○ social media gives people an audience,
- ○ social media services often remove hierarchy and are built from the bottom up,
- ○ social media is open and transparent.

This view corresponds with how authors of this publication perceive today's classroom. They state that "we need classrooms that challenge traditional models and reverse the hierarchy, allow young people to communicate and collaborate, that provide an authentic audience for children's work and exist within systems that are both open and transparent" (SMILE 2013: 13).

4. Scoop. it, Twitter and blogs in professional development of teachers of business English

This paper will now proceed with the investigation of the following three social media tools: Scoop.it, Twitter and blogs, with the aim of discovering how they can be utilized by teachers of business English who are trying to improve their teaching theory and practice.

4.1. Scoop.it

Scoop.it is a content curation platform that became available to the public in November 2011. Curation, also known as digital curation, is defined as "sifting and organizing links to useful content" (Peachey 2012). This platform enables users:

- ○ to gather and store content that is of their interest (articles, blog posts, pictures, webpages etc.) in one place,
- ○ to create and share content with other users,
- ○ to develop communities according to their interests.

Scoop.it is based around topics which consist of scoops, i.e. "articles that make up the content of a topic." (Tschoegl 2012). Users can create their own scoops or rescoop from other topics i.e. add content they find intresting to their own topic.

Business English teachers can use this platform to find content that will help them get practical ideas, familiarize themselves with latest theoretical developments and grow professionally in general. By simply entering the key word in the search bar, they will be supplied with a lot of useful information. For example, the phrase "business English" produces topics such as: business English skills, business English teaching texts, teaching business English-useful links, business English LSP matters, technology for business English teaching, business English video and many more. Teachers can choose the topics of their interest and follow the authors of the content. They can also share resources and articles by creating their own topics and thus connect with other educators. Particularly useful tool for managing Scoop.it topics is a Bookmarklet, which can be

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added to a bookmark bar, and which "helps users publish interesting content directly from their browser to their topic" (http://feedback.scoop.it/knowledgebase/articles/32096-1-6-1-how-to-install-the-bookmarklet-). Since this platform is connected with other social networks, teachers can share their scoops simultaneously on Facebook, Twitter, Linkedin, Tumblr, WordPress and other accounts, and as a result, become more visible in the virtual environment.

Figure 1: Screenshot of the author's followed topics on Scoop.it account

In general, the more one scoops, rescoops and comments, the easier one gets in touch with people who share the same or similar interests, and this can greatly benefit teachers because they may get new ideas and new perspectives on teaching as well as support from fellow teachers. This platform is helpful for less active users as well because it is content-oriented, and, as mentioned above, it can provide teachers with valuable pedagogical resources, both theoretical and practical.

4.2. Twitter

Twitter is a micro-blogging site based around tweets, i.e. pieces of information consisting of maximum 140 characters. One uses it to keep up to date with the latest news and events, discover topics of his or her interest, share opinions etc. It can be a very useful social media platform for professional development of business English teachers too. They can connect with educators worldwide to exchange ideas related to classroom and teaching practice, i.e. they can find and share links to various kinds of content such as teaching resources, blog posts, conferences and other events, get immediate response to questions and dilemmas, get support when experimenting with new ideas, take part in educational chats and the like.

Hashtag (#) is a symbol that is of crucial importance on this platform and it is used with a particular key word in order to categorise content. It enables teachers to find topics more easily and join in conversations.

Speaking of Twitter conversations which are of interest to business English teachers, one should mention chats such as #ELTchat, #Ukedchat, #edchat etc. Some authors say that they represent one of the "finest examples of how educators have used social media for continued professional development" (SMILE 2013: 16).

Below follows a short description of what #ELTchat is and how it works.

#ELTchat is "a PLN[1] for ELT professionals" (http://eltchat.org/), which combines a few social media forms: Twitter, where the actual chat takes place, and wiki and blog where all the activities that precede and follow the chat are published.

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The chat has a two-year long tradition in offering support and "opportunities for continuous professional development" (http://eltchat.org/) for teachers of English. It started when "a group of ELT professionals began to use Twitter to discuss topics of interest to English language teachers" (http://eltchat.org/).

As far as topics for the discussion are concerned, they are selected with the help of #ELTchat blog moderators and teachers from all over the world using the online poll system. The teachers are invited to offer their proposals for the subject of the chat, and after being reviewed by #ELTchat moderators, the topics are put to the vote. Two topics are then selected for the chat which takes place twice every Wednesday. After the chat, the transcript is published on #ELTchat wiki. There is also a summary of the chat written by a volunteer participant and posted on his or her blog as well as the #ELTchat blog.

Apart from general methodological issues, business English teachers participating in an #ELTchat can encounter topics that are specific to their field of teaching, such as "How can you teach business English with minimal experience of being in the business world?", "Job interviews tips" and the like.

Related to Twitter is Tweetdeck, an application whose interface "consists of a series of customisable columns, which can be set up to display user's Twitter timeline, mentions, direct messages, lists, trends, favorites, search results, hashtags, or all tweets by or to a single user" (http://en.wikipedia.org/wiki/TweetDeck). In other words, this application helps teachers to create a clearer overview of their Twitter account so that they can follow the relevant content much more easily.
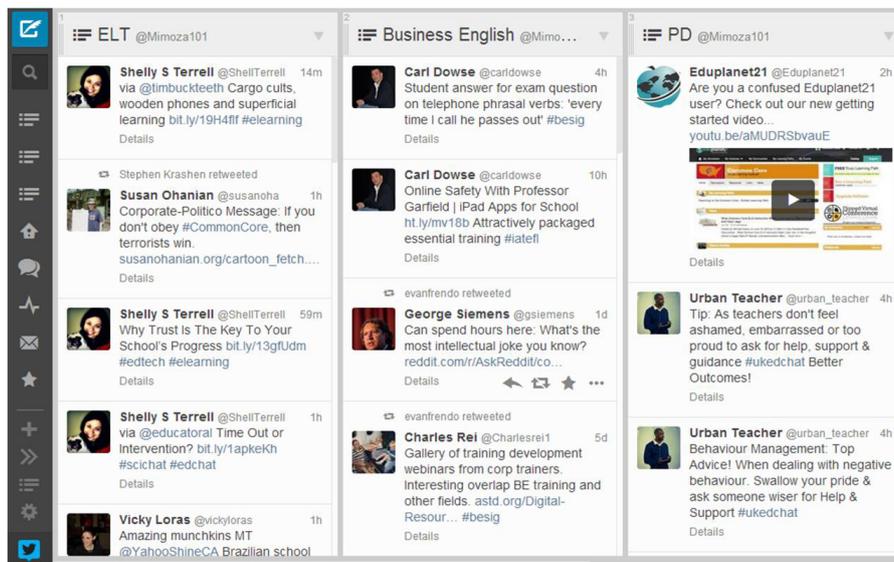
Figure 2: Screenshot of the author's TweetDeck lists

In order to use Twitter as a professional development platform, teachers do not have to be active members. However, the level of involvement affects the number of followers, and the more followers a teacher has, the more effectively he or she can utilize the potential of Twitter. Otherwise, it can easily become a timewaster.

4.3. Blogs

Blogs are websites that resemble online journals and represent a useful tool for professional development of teachers. In 2008, Luehmann and Tinelli conducted an in-depth research into this area and concluded that "blogging can offer new avenues for professional learning by providing teachers with new forms of participation and unique learning opportunities" (Luehmann and Tinelli 2008: 325). Davies and and Merchant (2007: 168) list the following benefits of blogging:

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> [...] textual connections with others on and offline; the facility to comment on others'
> blogposts and the possibility of replying to comments on one's own; hyperlinks to
> information sources; site meters which monitor visits from others; RSS feeds which
> alert subscribed readers to other newly updated sites; the facility to embed other texts
> within one's own and the possibility of including a range of modalities from audio
> podcasts to video streams.

Blogging practice enhances both professional and teacher identity development. According to Luehmann and Tinelly (2008: 332), managing and maintaining the content of this form of virtual communication impacts the learning and professional development, while the social networking function i.e. interaction through comments helps teachers to develop their identity.

As far as interaction in blogs is concerned, these two authors (Luehmann and Tinelli 2008: 329-330) identified its three types: cognitive, which is mostly found in blog posts and refers to discussing topics such as "pedagogy, students, or other issues related to the field of teaching", affective, which refers to "sharing emotions" or "advocating" and is also found in blog posts, and social interaction, which is present in comments and takes form of "sharing resources, mentoring, encouraging and commiserating".

Below is a list of seven business English blogs[2] that teachers might find useful for practice improvement and professional growth in general.

(1) English for the workplace (http://englishfortheworkplace.blogspot.com/) is a blog created by a well-known figure in ESP world, Evan Frendo. It contains the author's conference talks, his thoughts and reflections on current ESP issues, open access resources, and informs readers about upcoming events,

(2) Business English ideas bank (http://www.paulemmerson.com/) is a site created by a recognized teacher and trainer in the sphere of business English, Paul Emmerson. According to Mr Emmerson, the site represents "a free resource for busy teachers wanting practical ideas to use in class tomorrow morning". In addition, readers will find here reference articles, slideshows, videos and the like,

(3) IATEFL BESIG world blog (http://www.besig.org/blog/default.aspx) presents the experiences, thoughts and ideas related to business English teaching. Blog posts are written by guest authors from all over the world,

(4) Professional English online (http://peo.cambridge.org/index.php?option=com_content&view=section&layout=blog&id=9&Itemid=2) is a Cambridge University Press blog, where Bob Dignen, a specialist in intercultural skills, talks about communication, culture, technology, methodology, conferences and the like,

(5) Business English lesson plans (http://businessenglishlessonplans.wordpress.com/) by Claire Hart, an ESP teacher and tech enthusiast offers "effective lesson materials and ideas [...] created specifically for business English learners in mind, but, with a little adaptation and a shift in focus, they could also be used in the general English classroom",

(6) Talking business internationally (http://talkingbusinessinternationally.wordpress.com/) is created by Ed Pegg, a teacher of English to professionals. The blog covers topics related to business theories, classroom management, intercultural communication, linguistics and technology,

(7) Business English ideas (http://businessenglishideas.blogspot.com/) is a blog by Charles Rei, business English trainer, who writes about assessment, classroom management, course and lesson planning, in-company training, communication and the like.

As already mentioned, the blogs above are written by authors within the sphere of ESP and business English. However, business English teachers can greatly benefit from following general

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English blogs as well, because these two categories overlap in many aspects, and general English topics can also be of considerable use in business English theory and practice, and vice versa.

5. Conclusion

This paper has given a short overview of some new trends in professional development of teachers and focused specifically on social media and how it can facilitate professional development of business English teachers. The author has presented three types of social media: Scoop.it, Twitter and blogs, which are different in nature, but all provide a valuable learning experience for teachers. The investigation of their content and use has shown that they enable teachers to keep up to date with latest ELT and ESP issues and help them connect and create networks which leads to getting new or different perspectives on teaching and learning and encourages reflection upon one's own practice. In addition, using social media and oTPD in general "provides teachers with an opportunity to engage in types of learning environments that increasing numbers of their students will be or are currently experiencing as part of their education" (Reid and Ostashewski 2010).

6. Notes

[1] PLN stands for professional learning network.

[2] Due to space constraints and the nature of this paper, the author has narrowed the list of blogs to present down to seven. These are the blogs written by recognized authors and trainers in the sphere of ESP and business English.

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Between a rock and a hard place: Test security and validity in LSP testing

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Abstract. This paper describes the validation of an end-of-term Business English exam. In this context, we seek to determine whether the exam has sufficient reliability and if it accesses test takers' background knowledge in business. A sample of 320 test papers was analysed. The results indicate mediocre item discrimination, and reliability is, consequently, only marginally acceptable, with Cronbach's alpha of 0.79. Nonetheless, for a non-piloted test, these are respectable figures. In addition, failing students with results below the 60% cut-point may re-sit the exam if they scored above 55%. This threshold represents the lower bound of the 77% confidence interval (CI_{77}) of the cut-score. This safety margin ensures that we can be reasonably certain that failing test takers whose true score might nonetheless be a passing one get the chance to retake the test. Regarding field-specific background knowledge, the findings of a MANOVA suggest that students who performed better in their business classes also achieved significantly higher scores in the Business English test. Overall, we therefore conclude that it is possible to develop a test instrument which addresses field-specific content knowledge and is sufficiently reliable despite the absence of pre-testing.

Keywords. Business English, English for Specific Purposes, language testing, test reliability, test validity.

1. Introduction

This paper describes the validation study a Business English exam administered by the Institute for English Business Communication at the Vienna University of Economics and Business (WU). One key issue in this type of ESP testing concerns its theoretical grounding, which some studies have judged to be rather tenuous. According to O'Sullivan (2006: 174), for example, most ESP testing is regarded as "'industry-driven' with a more pragmatic than theoretical foundation". This is a view that can be traced back to Davies (2001), whose investigations into earlier versions of IELTS led him to conclude that "there is no theoretical basis for LSP testing, [...it] remains of uncertain value and, indeed has not proved itself to be more valid than a general proficiency test" (Davies 2001: 144). (Cf. also Thighe (2007) and Ingham and Thighe (2006) on the role of ESP testing.) In this context, Davies (2001) also refers to Robinson (1989), whose position on ESP he regards as merely pragmatic and pre-theoretical. Despite these misgivings, Davies (2001) ultimately accepts Robinson's (1989) point that ESP "is goal-oriented [and that] students study [...it...] because they have to perform a task in English" (Robinson 1989, quoted in Davies 2001: 144), and he regards this argument as sufficiently persuasive to continue to engage in ESP testing.

As if in anticipation of Davies' (2001) criticism, Douglas (2000) had already made an attempt to provide a theoretical underpinning for LSP tests. Based on Bachman's (1990) and Bachman and Palmer's (1996) theories of language testing, Douglas' framework is probably the most comprehensive one to date, and also proved influential in O'Sullivan's (2006) revision of Cambridge ESOL's BEC suite of exams. Both researchers maintain that LSP testing rests on the central concepts of specificity and authenticity. Specificity, in particular, is not regarded as

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a case of all or nothing, but as being located on a cline, depending on "the amount of content or background knowledge [required] in responding to the test tasks" (Douglas 2000: 14). Indeed, background knowledge is a core concept in LSP, despite the fact that its role is intriguingly complex and still far from clear. Clapham's (1993, 1996) findings, for instance, suggest that test takers with poor language skills are typically unable to exploit their background knowledge, in contrast to more competent language users. In general, the strongest effects of background knowledge were found in test takers with intermediate language competence, and effects proved to be stronger the more specific the test, i.e. the more background knowledge was required. Interestingly, the impact was weakest among the most competent language learners as these managed to use their language skills to compensate for possible shortcomings in background knowledge.

On the basis of Bachman and Palmer's (1996) concept of the topical knowledge component, Douglas (2000) envisions three ways of integrating background knowledge with language skills: (1) a zero option, which only covers (decontextualised) language ability, (2) specific background knowledge and language ability as separate abilities or (3) specific purpose language ability as the result of the interplay between language ability and topical knowledge. Douglas (2000) argues that where the difference in test taker performance on an LSP test may be due to either a lack of background knowledge or language ability, it may be advisable to keep these two constructs separate (i.e. option 2). Conversely, where a solid basis of similar background knowledge can be assumed, "language and background knowledge would be left intertwined" (Douglas 2000: 20). In the present context, neither the course goals of the relevant Business English class nor the reporting of students' results envision any differentiation between a business and a language component. Instead the aim is to measure a combined language-cum-business construct. Douglas' (2000) third option of an integrated concept covering language skills and business knowledge therefore seems to best reflect the test construct of the class in *English Business Communication 2* (EBC2). This paper, consequently, seeks to demonstrate that business knowledge significantly affects test takers' EBC2 scores, thus confirming that the test addresses the combined business and language construct. This should substantiate our expectation of the criterion-related, concurrent validity of the EBC2 exam.

The second topic addressed in this study concerns the impact of test security on another facet of the EBC2 exam's validity, viz. its scoring validity (Weir 2005), involving a.o. item quality and reliability. Piloting a test is universally regarded as essential in ensuring item quality and reliability (Bachman & Palmer 2010; Hughes 2003). However, such pre-testing requires access to trial test takers who have no contact to the actual candidates, otherwise test security is compromised. Unfortunately, no such test takers are available in the setting at WU, hence piloting the EBC2 test items is not an option. In the absence of such pre-testing, it would theoretically also be possible to validate a test that had already been administered, and re-use parts of the now validated test in a later administration. However, candidates at WU have the right to inspect their test papers, which also involves taking copies of the exams, so that these invariably end up in the public domain. Re-using such tests is clearly not feasible, again due to concerns over test security. This state of affairs means that unpiloted tests have to be administered for security reasons, and while students obviously appreciate the transparency associated with being able to inspect their papers, this is clearly at the expense of validity. In particular, the absence of pre-testing prevents test developers from assessing item quality, which has a direct impact on test reliability. Consequently, a second aim of this paper is to determine whether the EBC2 test has sufficient scoring validity despite the absence of pre-testing.

2. Method

2.1. Setting, subjects, test instrument

The test instrument to be validated is the semester final exam of the class in *English Business*

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Communication *2* (EBC2). All WU students enrolled in two different Bachelor's programmes, viz. *Business, Economics and Social Sciences* and *Business Law*, are required to take this exam. It was administered by the Institute for English Business Communication on 26 January 2010 and lasted 90 minutes. 320 tests were investigated. The test is divided into three main parts, viz. Section 1 *Business content and terminology*, Section 2 *Language (grammar and vocabulary)*, Section 3.1 *Text comprehension* and Sections 3.2 and 3.3 *Text production*. Sections 1, 2, and 3.1 consist of selected response items or constrained, constructed response items. Examples 1 - 3 below are representative instances of items from these three test parts:

(1)　*Section 1 - Business content and terminology*

　　Rubric: Responses to cases. Answer the following CLEARLY. You need not write complete sentences.

　　Item 1.1 (b) You have received an accepted time draft in connection with an export transaction. Name the three options you now have as regards receiving payment.

　　Key: 1. present at maturity; 2. discount; 3. indorse/endorse

(2)　*Section 2 - Language (grammar and vocabulary)*

　　Rubric: Collocations – Text completions. Complete each of the short texts below by filling the gap it contains with the grammatically-correct form of a verb (possibly including a preposition or adverb) that collocates with the accompanying business term.

　　Item 2.2 (a) The dollar has depreciated against the euro over the last few months. As a result, direct investment in the US, such as _____ firms in the US from scratch, has become much easier for euro zone companies.

　　Key: establishing; setting up; founding; starting (up); building (up)

(3)　*Section 3.1 - Text comprehension*

　　Rubric: Mark each of the statements below as TRUE (T) or FALSE (F) according to the text. Then write in the space below it the EXACT WORD(S) FROM THE TEXT that support(s) your answer.

　　Item 3.1.3 (a) Many governments used fiscal measures to stimulate economic growth.

　　Key: True "Governments worldwide raised their spending spectacularly."

Items from these three parts, i.e. Sections 1, 2 and 3.1, are validated in the present study. On the other hand, Sections 3.2 and 3.3 are pure constructed response tasks (i.e. free text production) and require a completely different approach in terms of scoring validity. They are therefore not included in the present validation effort.

The parts validated here consist of 46 items (Section 1, 15 items; Section 2, 16 items; Section 3.1, 15 items). A total score of 65 marks can be achieved on these sections, with a cut-score of 60% (i.e. 39 marks). The pass rate on this reduced part of the test was 56.9%, i.e. 182 of 320 test takers. As just mentioned, students need to reach the cut-score of 60% for a passing grade. Failing students who nonetheless achieve a result of between 55% - 59% may resit the exam once. The test is consequently a medium stakes exam as such marginally failing students may re-take the exam while other failing candidates with results lower than 55% can repeat the whole course up to twice.

2.2.　Validation procedures

As discussed above, this validation effort is based on the concepts of scoring validity and criterion-related validity. Weir (2005) introduces *scoring validity* as a superordinate term

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for a test's "statistical attributes" (Weir 2005: 43), including concepts such as item analysis, reliability and measurement error. Against this background, we report item facility (IF) and item discrimination (item-total correlation), and compute Cronbach's alpha as a measure of internal consistency and the associated standard error of measurement, both of which are especially critical in determining if the test instrument has sufficient scoring validity.

To confirm criterion-related, concurrent validity, we employed a differential groups design. The test takers were divided into two groups according to the extent of their background knowledge in business studies. For this purpose, WU Academic Controlling kindly made available to us students' mean grades (n=318) which were based on eight different classes in business administration, viz. Accounting and Management Control 1 & 2; Procurement, Logistics and Production; Corporate Finance; Marketing; Personnel Management, Leadership and Organisational Behaviour; Business Information Systems 1; Introduction to Business Administration. These grades were used to divide the sample into two percentiles resulting in a high performing group (n=178) and a low performing one (n=140), based on their business knowledge. This grouping variable became the independent variable in a multivariate analysis of variance (MANOVA), which aims to determine the impact of business knowledge on the EBC2 exam. Accordingly, we hypothesise that if the EBC2 exam tests business knowledge as well as language skills, one would expect to see a significant effect size of the independent variable (business knowledge) on the test scores. A significance level of 0.01 is used throughout this study. In addition, we assume that the effect size of business knowledge will be highest in Section 1 as this expressly tests business concepts, viz. *Business content and terminology*. By contrast, effect sizes should be lower in Section 2 (*Language: grammar & vocabulary*) and Section 3.1 (*Text comprehension*). If these points can be confirmed, it should go some way to demonstrating that the EBC2 exam tests a business as well as language construct, which in turn should underscore its concurrent validity.

3. Results and discussion

3.1. Scoring validity

Item facility (IF) is typically the first measure to consider in terms of item performance. It is defined as the percentage of correct answers for each item, and according to Bachman (2004: 138) the rule of thumb in test development is to select "items that fall between a range of [...] .20 and .80", i.e. those that are answered correctly by between 20% and 80% of test takers. (Cf. Brown and Hudson (2002) and Carr (2011) for broadly similar guidelines.) Against this background, item facility, as outlined in Tab. 1, seems largely satisfactory. In each of the parts, the majority of items (between 60.0% and 80.0%) falls within the IF range of 0.50 - 0.79 and another 12.5% to 26.7% of items have IF values between 0.20 and 0.49. That means between 86.7% (Section 3.1) and 93.3% (Section 1) of items fall within the required IF range, which is a promising start to the examination of item quality.

IF	Section 1 (15 items)	Section 2 (16 items)	Section 3.1 (15 items)
0.80 - 1.00	1 (6.7%)	2 (12.5%)	1 (6.7%)
0.50 - 0.79	12 (80.0%)	12 (75.0%)	9 (60.0%)
0.20 - 0.49	2 (13.3%)	2 (12.5%)	4 (26.7%)
0.00 - 0.19	0 (0.0%)	0 (0.0%)	1 (6.7%)

Table 1: Item facility in EBC2 exam

However, item discrimination is a more crucial aspect of item behaviour as it directly affects the reliability of the whole test. In the present instance, we will look at item-total correlation as a measure of item discrimination (see Tab. 2). Bachman (2004: 138) recommends the selection of "items that have discrimination indices equal to or greater than .30". (Brown and Hudson (2002) and Carr (2011) suggest virtually identical coefficients.) Items with discrimination values

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below 0.30 are candidates for revision, while items with negative discrimination are particularly problematic. Negative discrimination means that weaker test takers tend to do well on such items, while better performing candidates do not. Such items, consequently, confound the measurement of the underlying construct and should, therefore, be scrapped outright (Hughes 2003).

From this perspective, the items in the EBC2 exam look somewhat more problematic than from the point of view of item facility. As outlined in Tab. 2, just over a third of the items (34.8%) feature an acceptable discrimination index of ≥0.30, while almost two thirds (63.0%), i.e. the majority, discriminate only poorly between strong and weak test takers. This is our first indication that if piloting items were possible in the context of test development and test administration at WU, item quality might be enhanced. Most worryingly, one item has negative discrimination, and would under normal circumstances be deleted or replaced. Overall, we are therefore faced with mediocre to poor item discrimination, and this will invariably have repercussions on reliability estimates.

r (item, total)	Number of items
0.30 - 1.00	16 (34.8%)
0.00 - 0.29	29 (63.0%)
< 0.00	1 (2.2%)

Table 2: Item discrimination in EBC2 exam

Cronbach's alpha is a widely reported measure of reliability and internal consistency. For most purposes, a value of 0.80 is regarded as the minimum expected reliability of a test (Carr 2011, Bachman 2004, Brown & Hudson 2002), although higher values should be achieved by high stakes tests. However, the respective reliabilities also vary with the skills tested and the relevant scoring procedures (Hughes 2003). In the present test, Cronbach's alpha comes in at 0.79, i.e. just under the expected minimum of 0.80. Considering that this is based on a non-piloted test, a reliability of 0.79 is actually quite respectable and indicates the robustness of the test development procedures.

These procedures were in fact fairly elaborate. Five different authors of the course book for the EBC2 class collaborated in producing a first version of the necessary test items. The Quality and Examinations Officer compiled these items into a first test draft and at the same time already made some initial revisions. This revised draft was reviewed by all five test developers, and subsequently the Quality and Examinations Officer produced the final draft incorporating the feedback from the test developers and further revisions of his own. It is clear that these rigorous test development procedures will need to be upheld in order to maintain the current levels of item quality and reliability, at least as long as test piloting remains unfeasible.

Yet, whatever the reliability achieved, estimates such as Cronbach's alpha are in themselves not very intuitive. Their practical value rather lies in the possibility to compute a test's standard error of measurement (SEM), which is based on a given reliability estimate (such as Cronbach's alpha) and the test's standard deviation (SD), hence $SEM = SD\sqrt{(1-\alpha)}$ (Bachman 2004: 172). On this basis, the SEM (of the three validated test sections) is 4 marks, i.e. we can be 68% certain that a test taker's true score falls within ±4 marks (or 1 SEM) of their observed test score. But what makes the SEM particularly valuable for present purposes is that it allows us to evaluate how reliable our decisions are in failing students who are below the cut-score of 60%. However, before discussing this issue, a closer look at the actual test scores is in order.

According to the test results outlined in Tab. 3, 182 students achieved a passing score (on the three sections discussed here) of at least 39 marks (or 60%). Those that failed can be classified in the following way: 37 candidates, i.e. just over a quarter of fails (26.8%), achieved a score of between 55% and 59%. Regulations at the Institute for English Business Communication stipulate that failing students in this score range may resit the exam. Given a SEM of 4 marks, a test score of 55% happens to be the lower bound of the 77% confidence interval (CI_{77}) of the cut-score. That means if one allows failing test takers with scores between 55% and 59% (36

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- 38.5 points) to resit the exam, one can be 77% confident of not making a student repeat the whole course whose true score might be at the cut-point of 60% (39 points), i.e. passing. At this confidence level, just over a quarter of failing test takers (26.8%) are allowed to retake the test. Similarly, if we wanted to be 90% certain of not making a test taker with a potentially passing true score repeat the whole course, this would entail almost half the failing students (45.7%) resitting the exam, i.e. those with scores between 52% and 59%. Decisions on how wide such a safety margin should be invariably depend on the stakes of the test and the available resources. As already outlined above, the EBC2 exam is a medium stakes test, which means that the worst-case scenario for failing students is repeating the course, and they are entitled to do so up to twice. Under these circumstances, a 77% probability of not failing test takers outright whose true score might be a passing one seems to be sufficiently reliable and practicable, given the available resources.

	Raw score[1]	Proportion score	CI[2]	N	Fails CumN (Cum%)
Pass	39.0 - 65.0	60% - 100%	-	182	-
Fail, with resit	36.0 - 38.5	**55%** - 59%	$CI_{.77}$	37	37 (26.8%)
Fail, no resit	34.0 - 35.0	**52%** - 54%	$CI_{.90}$	26	63 (45.7%)
	32.5 - 33.0	**50%** - 51%	$CI_{.95}$	17	80 (58.0%)
	0.0 - 32.0	0% - 49%	-	58	138 (100.0%)

Table 3: EBC2 scores and cut-off points

3.2. Criterion-related, concurrent validity

As outlined in the methodology section, we employed a differential groups design to investigate whether the EBC2 exam tests business knowledge as well as language skills. The multivariate analysis (MANOVA) discussed below aims to determine the impact of business knowledge on the test scores. For this purpose, the test takers were classified into two groups according to the extent of their business knowledge. This grouping variable serves as the independent variable in the subsequent multivariate analysis. The raw scores on the individual test sections represent the three dependent variables (see Tab. 4).

There was a statistically significant difference between students with high and low business knowledge on the combined dependent variables (combined test sections), $F (3, 314) = 8.608$, $p = 0.000$; Wilks' Lambda = 0.924; partial eta squared = 0.076 (see Tab. 4). When the results for the dependent variables (individual test sections) were considered separately, all differences reached statistical significance: Section 1, $F (1, 316) = 21.382$, $p = 0.000$, partial eta squared = 0.063; Section 2, $F = (1, 316) = 15.808$, $p = 0.000$, partial eta squared = 0.048; Section 3.1, $F (1, 316) = 9.960$, $p = 0.000$, partial eta squared = 0.031.

Variables	p	Partial eta squared
Independent variable		
Business knowledge		
Dependent variables (Section raw scores)		
Sections 1, 2, 3.1 combined	0.000	0.076 (7.6%)
Section 1 Business content and terminology	0.000	0.063 (6.3%)
Section 2 Language: grammar and vocabulary	0.000	0.048 (4.8%)
Section 3.1 Text comprehension	0.000	0.031 (3.1%)

Table 4: Effect of business knowledge on EBC2 scores (MANOVA - Wilk's Lambda)

This means that business knowledge had a significant impact on the overall test score, accounting for 7.6% of the variance (see Tab. 4), which represents a "medium effect size" (Cohen 1988: 22). At first glance, a confounding variable could arguably be at play here: After all, students with high background knowledge and high EBC2 scores might simply have superior study skills affecting both variables (business knowledge and EBC2 scores) independently. However, this

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argument does not explain the differentiated effect of background knowledge on the individual test sections. Section 1 of the test covers *Business content and terminology*, and in this part business knowledge indeed shows the highest effect size, explaining 6.3% of the variance. On the other hand, effect sizes are smaller in Sections 2 (4.8%) and Section 3.1 (3.1%), which can be explained by the fact that these tap constructs less closely connected with business knowledge, viz. *Language: grammar and vocabulary* (Section 2) and *Text comprehension* (Section 3.1). These observations are clearly consistent with assuming that the EBC2 exam tests business knowledge as well as language skills and thus underscores its concurrent validity. Platzer and Zeilinger (forthcoming) report similar findings on the basis of a correlational approach.

4. Conclusion

Two key aspects of validity were investigated in the present paper, viz. scoring validity and criterion-related, concurrent validity. In terms of scoring validity, only item facilities were largely satisfactory, whereas the proliferation of discrimination values below 0.30 means that the majority of items would normally require revision. However, as such item revision remains unfeasible under the prevailing conditions, the resulting reliability estimate of 0.79 was respectable, but - in the final analysis - only marginally acceptable. It consequently seems clear that much would be gained in terms of scoring validity if proper piloting could take place, which - unfortunately - remains infeasible in the current setting. Nonetheless, we demonstrated that this shortcoming is compensated for by the fact that students who fail by a margin of no more than 5 percentage points are allowed to resit the exam, thus ensuring that we can be reasonably certain $(CI_{.77})$ that failing test takers whose true score might be a passing one are entitled to retake the test. We regard this approach to be both practicable and sufficiently reliable given that EBC2 is a medium stakes exam. As far as concurrent validity is concerned, a MANOVA confirmed that business knowledge has a significant effect on the EBC2 scores, with the biggest effect size in the section devoted to business content. In other words, the EBC2 exam taps business knowledge as well as language skills and thus tests the construct stipulated in the course aims. The EBC2 exam therefore addresses the relevant construct and is sufficiently reliable, despite the absence of pre-testing. However, this also implies that the rigorous test development process needs to be maintained in order to keep up this level of reliability.

5. Acknowledgements

6. Notes

[1] Rounded to the nearest half mark.
[2] Confidence Interval for the **lower** bound of the cut-score.

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ESP self-compiled corpora in an Italian academic setting

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Abstract. Considering the increase of corpus linguistics in ESP/EAP pedagogy, this paper illustrates a didactic experience carried within an English for Tourism course held at the University of Calabria (Italy). During the course students were introduced to corpora and they gained basic corpus analysis skills which could help them acquire specialized vocabulary and knowledge which could be useful for their field of study/work. After outlining the main features of the corpus used in class and the tasks created to help students gain familiarity with corpus analysis, the paper focuses on students' self-compiled corpora and investigations.

Keywords. Corpus linguistics, discourse analysis, language of tourism, self-compiled corpora.

1. Introduction

The use of corpora for the teaching of specialized languages (Flowerdew 2004, Gavioli 2005, Thurstun and Candlin 1998) has become a widely accepted approach which has attracted the attention of researchers for the past two decades. In particular, it is in the area of language teaching and learning, and more specifically in the area of English for Academic Purposes (EAP) and English for Specific Purposes (ESP), where corpora are now taking on an increasingly mainstream role (Bernardini 2002, Hyland 2000, Lee and Swales 2006) with the compilation of small, 'localised' corpora often compiled by the class tutor, or sometimes by the students (Flowerdew 2002, Lee and Swales 2006). Indeed, "corpora of specialized texts and research findings based on them can […] be used to improve pedagogical practice and affect [language teaching] syllabi or the design of teaching materials" (Römer 2009: 117). Moreover, corpora can help learners acquire the specialized linguistic and conceptual knowledge needed to become a proficient Language for Specific Purposes (LSP) user (Bowker and Pearson 2002). However, little research has focused on how, by means of self-compiling a specialized corpus, learners actually interact with the resources themselves. Hafner and Candlin (2007: 304) have stressed the lack of studies that provide "direct evidence of students' self-directed use of corpus tools", which may be attributed to the preference of indirect observation methodologies over direct data extraction (Pérez-Paredes, et al. 2011).

Against this background, this paper will illustrate the pedagogical applications of small specialized corpora in ESP teaching activities, specifically for students majoring in Tourism. After providing an overview of the key features of a specialized corpus compiled by the instructor, the *Travel Promotion Text (TPT) Corpus*, and a number of activities designed to familiarize learners with corpus analysis, the remainder of the paper regards the illustration of students' self-compiled corpora.

2. Pedagogical implications

2.1. LSP and Corpus Linguistics

Corpora can be a useful aid for learners when acquiring specialized linguistic and conceptual knowledge needed to become a proficient LSP user. In fact, in recent years, studies into professional discourse have been fruitfully informed by corpora, providing a degree of objectivity and representativeness (McEnery, Xiao & Tono 2006). Moreover, corpus-based analysis is widely used to examine spoken and written discourse in professional contexts. As

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suggested by Gavioli (2005), there are essentially two main reasons why EFL/LSP teachers should employ corpus tools in the classroom: a) corpus work provides students with a useful source of information about LSP language aspects, and b) the process of 'search-and-discovery' implied in the method of corpus analysis may facilitate language learning and, therefore, promote autonomy in language use. Indeed, corpus-derived materials enable LSP teachers to teach those words and expressions (and those uses of them) that the learners will need later on in order to handle texts in their subject area (Flowerdew 2002). Using a corpus and concordancing software in the classroom can "provide students with strategies which enable them to pinpoint possible mismatches between saying and meaning" (Argondizzo & Ruffolo 2012: 99). Moreover, while investigating specialized discourse, learners become aware of the link between language and content and are offered the opportunity to describe and explain how language is used, analyzing and interpreting, at the same time, the linguistic devices typically used in specialized discourse (Argondizzo, Caruso & Ruffolo forthcoming). Using corpus tools in the classroom puts the learner at the centre of the teaching-learning process (Johns 2002). Moreover, these tools can make the learner a linguistic researcher who plays an active role in discovering meaningful patterns of selected lexical items, related to the learner's field of study and future career. In particular, in an LSP class, teachers may or may not be experts in the specific discourse they are teaching, therefore using a specialized corpus enables both teachers and students to have access to the vocabulary which students need for their subject area.

2.2. Specialized Discourse: The Language of Tourism

The relationship between language and tourism has received some attention from researchers, such as MacCannell (1976) and Urry (2002), who argue that the tourist establishment constructs and defines the tourist experience by using language to convey specific images of the destination (see Ruffolo 2011). This tendency is explained by Dann in what may be defined as the most comprehensive study on the language of tourism and its influence on the behavior of people, *The Language of Tourism*:

> ….tourism, in the act of promotion, as well as in the accounts of its practitioners and clients, has a discourse of its own. Seen in this light, the language of tourism is thus a great deal more than a metaphor. […] the language of tourism attempts to persuade, lure, woo and seduce millions of human beings, and, in doing so, convert them from potential into actual clients (Dann 1996: 2).

Moreover, the language of tourism is highly persuasive and promotional, all lexical choices are carefully made to meet tourists' expectations (Calvi 2006). Investigating these lexical items and interpreting their use within the texts may provide useful insights for students majoring in Tourism as well as the different microlanguages which are representative of tourist discourse (accommodation, food and drinks, events, arts, etc.) (ibid.). Furthermore, knowing how the persuasive function is achieved through investigating tourist brochures can provide us with insights into the field of LSP for both instructors and students.

3. Teaching and learning context

This section describes the participants involved, and the course in which our study was conducted. The classroom tasks that the participants carried out, which would then serve as a starting point for their own analyses, are described in detail.

3.1. Participants and course organization

The study was carried out within an ESP course for Tourism majors at the University of Calabria, Italy. The students, mostly native speakers of Italian, were in the first year of their postgraduate course and had previously taken two modules of English language in their undergraduate course. The students were, however, all new to this approach to language learning, as none of them had previously done any corpus-linguistic analyses.

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The course, taught by one of the authors, was an English for Specific Purposes (ESP) course, with an emphasis on corpus linguistics and discourse analysis. As for course organization, the teacher met the group twice a week for 10 weeks resulting in 60 hours of course work plus 20 additional hours of tutorials spread out across the semester.

3.2. Classroom tasks

3.2.1. Introduction

As a preliminary to the classroom tasks, the instructor introduced the text genre the students would be focusing on. Writing effective promotional materials requires a high level of language competence and is vital to achieving success in a highly competitive field such as tourism. For this reason, those who create tourist texts must be aware of the fact that tourist promotional texts use language to persuade perspective customers. The language of tourism is grounded in discourse, as it uses discourse as its main basis. In order to provide students with authentic examples of this type of discourse, they were introduced to the *TPT Corpus* consisting of British and American promotional texts. The corpus was collected with the aim of investigating how travel promotion texts use the terms nature and natural, specifically to explore whether these terms are used in tourism advertising with a deceptive meaning.[2] The *TPT Corpus* includes one main genre type, namely articles in specialized magazines. The articles, dating from January 2003 to March 2010, were taken from *Travel Weekly (TW)*, a British periodical, and *Travel Agent (TA),* an American journal. *Nature* and *natural* were employed as search terms for the analysis, therefore, in order to build the *TPT Corpus*, the articles included the word "nature" and "natural" in the headline and/or lead and/or in the body of the text.

Corpus linguistics was introduced both on a theoretical and a practical level. It is important to begin by saying that corpus linguistics is "the study of language based on examples of real life language use" and that it utilizes bodies of electronically encoded text (Baker 2006: 1). Therefore, it incorporates a more quantitative methodology to purely qualitative approaches to research, by using for instance, frequency information about occurrences of particular linguistic phenomena. The course aimed to show how corpus linguistics can enable the analysis of discourses, and in this specific case of the discourse of tourism.

Hands-on sessions followed the brief theoretical introduction in order to give students the opportunity to use the software. The specialized teacher-compiled corpus was uploaded on all computers in the lab and participants were given access to it, along with the concordancing program AntConc (http://www.antlab.sci.waswda.ac.jp/software.html), which is a free downloadable software with the same tools as many of the other concordancing programs on the market, allowing easy access for students, both in the lab and at home.

3.2.2. Concordances

The hands-on sessions included lessons on concordancing and collocational analysis, followed by metaphor identification and analysis. Baker (2006: 71) posits that a concordance analysis is one of the most effective techniques which allows researchers to understand the ways that words are actually used within the text. A concordance is a list of all of the occurrences of a particular search term in a corpus, presented within the context that they occur; usually a few words to the left and right of the search term. Having specified the search terms "nature" and "natural", Tab. 1 below, shows some sample lines of the concordance for "nature".

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Concordance			File
per person twin-share, including spa use,	**nature**	activities, night-time campfires,	TW72_04.txt
about English countryside attractions and	**nature**	-based tourism.	TW81_03.txt
Little Cayman to: Divers -Honeymooners-	**Nature**	-enthusiasts -Families-Those	TA115_03.txt
as home to the 203-acre Booby Pond	**Nature**	reserve. Encourage clients to visit	TA114_03.txt
bicycles, tennis and a tour of the Valriche	**nature**	reserve. Sample price: Thomson	TW158_06.txt
islands also offer a great deal of pristine	**nature**	sites. Clients will find caves and	TA114_03.txt
center and networks of publicly accessible	**nature**	trails and interpretive stations that	TA47_07.txt
diving, walking, visits to Owen Island,	**nature**	trails to explore, biking. Attractions	TA115_03.txt
Zambezi River. Early risers will enjoy a	**nature**	walk as the islands are home to	TA178_08.txt
by 21 game species, so drives and	**nature**	walks are popular and the resort is	TW72_04.txt

Table 1: Examples of concordance lines containing the node word "nature"

The objective of creating concordances is to look for patterns of language use, based on repetitions. Already from the few examples above, we notice words like *reserve*, *trails*, and *walks*.

3.2.3. Collocates

Once the concordance lines have been generated, and patterns noticed, the next step is to investigate the presence of particular terms more closely, that is, by analyzing the collocates of "nature" and "natural". We felt that this was a crucial step in the analysis since collocational phenomena, semantic preference and semantic prosody have aroused ever more interest in specialized languages. The reason why two or more words co-occur can tell us a great deal about the behavior of terminology in specialized discourse and can help the LSP learner understand the semantic preference of certain words. Against this background, students were asked to, first of all, analyze the collocates of "nature" and "natural". Tab. 2 and 3 illustrate the top ten collocates of both search terms.

What the students noticed immediately was the high predominance of nouns compared to adjectives. Initially they were surprised, because, taking into consideration the type of texts they were analyzing (promotional and descriptive), the students, along with the researchers, were expecting different results.

Collocates of "nature" obtained using the T-score in the TPT Corpus		
Word	T-score relation	# of occurrences
Reserve	8.28	69
Lovers	5.36	29
Reserves	3.85	15
Tours	3.60	14
Walks	3.44	12
Trails	3.42	12
Bird	3,41	12
Culture	3.40	12
Park	3.38	13
Tourism	3.30	12

Table 2: T-score results for collocates of "nature" (lexical words) in the TPT corpus

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Collocates of "natural" obtained using the T-score in the TPT Corpus		
Word	T-score relation	# of occurrences
Beauty	8.45	72
Attractions	6.25	40
Wonders	5.90	35
Disasters	5.64	32
History	4.61	22
Environment	4.20	18
Habitat	3.98	16
Resources	3.59	13
Springs	3.42	12
Cultural	3.39	12

Table 3: T-score results for collocates of "natural" (lexical words) in the TPT corpus

The third step involved sorting the concordances in order to better investigate the patterns of the collocates within the context. According to Baker (2006: 120), this should enable us to uncover dominant discourses surrounding the subject. Tab. 4 and 5 contain samples both for "nature" and "natural".

Concordance		
as home to the 203-acre Booby Pond	**Nature**	reserve. Encourage clients to visit all
bicycles, tennis and a tour of the Valriche	**nature**	reserve. Sample price: Thomson
center and networks of publicly accessible	**nature**	trails and interpretive stations that will
diving, walking, visits to Owen Island,	**nature**	trails to explore, biking. Attractions Qui
the Zambezi River. Early risers will enjoy a	**nature**	walk as the islands are home to
inhabited by 21 game species, so drives and	**nature**	walks are popular and the resort is

Table 4: Examples of concordance lines containing collocates of "nature"

Concordance		
Falls Entices Three countries share breath-taking	**natural**	attractions. For years, the world-class
Vegas. While more of an engineering feat than a	**natural**	attraction, a visit to the dam—one
Thailand does, and the superlatives don't stop at	**natural**	attractions. The destination has some
synonymous with the country's exotic appeal and	**natural**	beauty. The hurricane season, which
initiatives. Costa Rica's primary appeal is its	**natural**	beauty and attractions, although this
has also been created to highlight St. Lucia's	**natural**	beauty. St. Lucia Tourist Board director
drive from the bush. But Tasmania's stunning	**natural**	beauty reaches its zenith on the wild

Table 5: Examples of concordance lines containing collocates of "natural"

The students were asked to identify the linguistic elements used by the writer, for example, if there are more adjectives, nouns, verbs, etc., and to try to explain the writer's purpose. After taking a more careful look at the concordance lines containing some of the most recurring collocates, with the guidance of the instructor, the students confirmed a predominance of nouns and gave their reasons why the text producers had chosen them. Some students suggested that the text writers were using nouns to present what nature can offer rather than simply making the place more attractive with the use of adjectives. Other students focused on specific nouns such as *habitat*, *reserve*, *trail*, etc., which they believed were being used to attract those tourists who want to be environmentally responsible. Moreover, the students believed that these lexical items were being used to express concern for the physical environment, typical of green tourism.

The students were subsequently asked to illustrate how nature is described, in terms of authenticity or artificiality.[3] Let us consider the following extracts:

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(1) **City** highlights National Botanical Gardens: a mass of subtropical and temperate plants with *paved* **nature trails** and a *tea garden*.

(2) The terrain ranges from *rugged* mountains and *verdant* forests to *grass-covered* plains and *pristine*, sandy beaches.

It can be argued that extract (1) is an example of artificial nature by focusing on the terms *paved* and *tea garden*. Both these terms have to do with human intervention, as both the nature trails and tea garden have been constructed by man, true nature has been manipulated. Extract (2) on the other hand, illustrates authentic nature, the adjectives used here having nothing to do with man. The students' conclusion was that there were more examples of artificial nature than there were of authentic nature.

3.2.4. Metaphor

Investigating the ways that a word can be used metaphorically is useful in all types of discourse, and particularly so, in the discourse of tourism. Therefore, as a final step in the instructor-guided tasks, the students were introduced to metaphor identification and were provided with the following working definition of metaphor:

The (partial) mapping of two concepts belonging to two different knowledge domains onto each other. One concept (the target) is understood in terms of the other (the source).

This fits in with what Dann (1996: 172) has said about metaphor and tourism discourse: metaphors are used in tourist texts to "manage the unfamiliarity of a destination" or better "to minimize the effects of unfamiliarity".

In corpus-based approaches to metaphor identification, concordances will show the researcher the words in their context, but he or she still has to process this information. There are various procedures for the identification of metaphor. We decided to follow the MIP procedure which was introduced by the Pragglejaz Group (2007). It offers a series of steps to follow for linguistic metaphor identification. The steps of the procedure are the following:

1. Read the entire text/discourse to establish a general understanding of the meaning.

2. Determine the lexical units in the text/discourse.

3. a. For each lexical unit in the text, establish its meaning in context.

    b. For each lexical unit, determine its basic meaning.

    c. Decide whether the basic meaning of the word is sufficiently distinct from the contextual meaning.

    -- if not, mark the lexical unit as non- metaphorical.

    -- if yes,

    d. Decide whether the contextual meaning of the word is related to the basic meaning by some form of similarity.

    -- if not, mark the lexical unit as non-metaphorical.

    -- if yes,

4. Mark the lexical unit as metaphorical.

The tools employed in the procedure are mainly the Macmillan English Dictionary, followed by the Longman Dictionary of Contemporary English. The reason for using these dictionaries is that they are corpus-based dictionaries of contemporary English and are representative of the language used in the travel promotion texts, which are addressed to a contemporary audience. Only in rare cases is the Oxford English Dictionary referred to, namely when it is impossible to establish a basic meaning of the word, and we need to refer to its etymology.

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Below there are two examples of metaphor taken from the *TPT* corpus. The first extract is carefully crafted, expressive of a feeling or sensation, and highly imagistic. It involves a specific case of metaphor, i.e. personification, where non-human entities are personified and assume the characteristics of or act like human beings. Here one can see mountains soaring, deep lakes forming and gentle hills rolling.

(3)   Few destinations match the *natural* beauty of the Azores. **Mountains soar** to the sky, **deep lakes form** in craters of dormant volcanoes, **gentle hills roll** to the ocean, and ***floral splashes of blue and pink are daubed on an evergreen canvas***.

The above extract is also representative of a case of novel metaphor. This is understood by analyzing the metaphorical word 'canvas' whose basic meaning can be found in definition 2 of the Macmillan Dictionary. The contextual meaning however, is not listed in any of the three dictionaries used in the procedure. When this is the case, its meaning in context must be established and the lexical unit marked as 'interpretation'.

> **canvas**
>
> - definition
>
> noun
>
> 2
>
> [uncountable] art canvas or other cloth on which artists paint with oil paints – basic meaning
>
> a.
>
> [countable] a picture painted with oil paints on canvas or other cloth
>
> (int)
>
> the natural landscape -- contextual meaning

The second example shows the use of spontaneous, conventional metaphors.

(4)   If your clients do want that forest eco-shack, there are some real ***gems***. Caribbean Islands Club offers Adventure Eco Villas on Tobago. Set in the middle of the rainforest, the apartments are on an organic farm and nature reserve.

Following the MIP procedure it can be observed that the basic meaning of 'gem' is definition 1, while the contextual meaning is 2.

> **gem**
>
> - definition
>
> noun [countable]
>
> 1
>
> a beautiful expensive stone that is used to make jewellery
>
> a ring set with precious gems -- basic meaning
>
> 2
>
> someone who is special in some way, especially because they are useful or helpful
>
> a.
>
> something that is special or beautiful in some way – contextual meaning
>
> He came up with a gem of an idea.

Metaphors in tourism discourse are either conventional or poetic, depending on the audience

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they are expected to attract. Some touristic metaphors are meant to catch the attention of the common traveler, looking for relaxation and peace, or for activity and entertainment. Other metaphors are instead more selective of a refined traveler, one with sophisticated tastes and in search of mystery, secrecy, and dream (Mattiello 2012).

3.3. Classroom discussion

After having gone through all the tasks, we had a classroom discussion on the use of corpus linguistics in an English for Tourism course. The students claimed that they understood that corpora can be invaluable resources to recognize underlying discourse, and were starting to become aware of the link between language and context. By examining parts of the *TPT Corpus*, students noticed a mismatching between saying and meaning. Not always were terms like "nature" and "natural" being used authentically, but more often were the cases when they were simply being used to attract the tourist. The underlying discourse revealed that there seems to be more concern for the economy than for the environment.

4. Students' self-compiled corpora

Students were told at the beginning of the course that for their end of course assignment they would have to compile their own mini corpus and carry out a linguistic analysis of their selected texts using the concordancing software and the strategies introduced in class. Moreover, they were asked to present their findings during the oral exam. In the following section we will illustrate three examples of corpora compiled by our students, who we will refer to as S1, S2, and S3.

4.1. Promoting Ecotourism

S1 compiled a corpus consisting of ten articles taken from online newspapers. The aim of her analysis was to trace the meaning of Ecotourism throughout the years. S1 identified the following keywords after looking at both the frequency word list and the keyword list: *local* (17) / *locals* (4)/ *locally* (2); *environment* (10) / *environmental* (6) / *environmentally* (5); *ecotourism* (19); *people* (17); *green* (8); *sustainable* (8); *responsible* (8); *impact* (7) / *impacts* (1); *community* (7) / *communities* (1).

After having identified the keywords in the corpus, S1 proceeded with a collocational analysis and listed the following as some of the most significant:

local **people**	*sustainable* **tourism**
environmental **policy**	*sustainable* **path**
green **travel**	*responsible* **travel**

Here are some examples taken from her corpus:

(5) Putting tourism on a **sustainable path** is a major challenge, requiring partnership and cooperation within the tourism industry, and between the industry, governments and tourism themselves (1999)

(6) Perfect ecotourism, however, probably doesn't exist. But many companies are making an effort to ensure that the benefits of their holidays - both to **local people** and the area visited - outweigh their negative impact (2002)

(7) You can play your part by encouraging the tour operator you use to have an environmental policy and to consider the impact on the environment of everything they do and the impact on **local people** (2008)

The student traces the following changes in the meaning of ecotourism starting from 1999. There is an idea of Ecotourism, but without a concrete realization. Something is however, moving

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for the future. A few years later there is a more concrete expectancy for the future and the first efforts were made in promoting ecotourism sites, even if there is a sort of pessimism about the existence of their authenticity. Tourists are pushed into contributing towards ecotourism. By the mid-2000s the efforts made by the tourist industry are still not enough. There is a need to create a global recognition for those who offer green holidays. Once more, a definition of ecotourism involves actions on the part of the tourists and people in general. In 2010, there are still different points of view about the existence of ecotourism as it is defined by The International Ecotourism Society.

S1 also focused on identifying metaphors regarding ecotourism and here we have an interesting example:

(8)   ***Ecotourism*** should be regarded as ***one of the trump cards*** of the tourist industry of the future.

She identified the target domain as *tourism/ecotourism* and the source domain as *card game/ trump card*

S1 illustrated the following cross-domain mapping:

Tourist services providers correspond to the *players*;

Tourists (and even the money earned thanks to them) correspond to the *final prize*;

What tourist services providers *offer* corresponds to *the cards* of each player;

Ecotourism corresponds to one of the *most important cards* which can bring the player to victory.

What emerges from the corpus that S1 compiled on Ecotourism is that although in the past 10 years the tourism industry has been investing in the development of ecotourism, it still has not reached its full potential. Instead, particular emphasis has been put on the actions of the individual tourist, almost as if he/she has more responsibility than the tourism industry.

4.2. Sustainable Tourism

In order to compile his corpus, S2 downloaded material from five websites of sustainable tourism locations, i.e. one location per continent. This student's aim was to carry out a linguistic analysis of the marketing strategies used to promote sustainable tourism online. The keyword analysis produced the following results: *natural* (429); *protection* (384); *historic* (379); *heritage* (364); *development* (332); *culture* (322); *environment* (306); *conservation* (305); *local* (281); *traditional* (247); *program* (193); *visitors* (168); *sustainability* (151); *aboriginal* (148); *marketing* (108); *strategies* (108); *ecosystem* (103); *attractions* (102).

S2 focused on identifying metaphors which were representative of the locations by carrying out a metaphor identification and analysis of the surrounding co-text of the above keywords. What follows are some examples which he grouped into two categories. The first three examples are representative of the conceptual metaphor BALINESE CULTURE IS A PLANT. We can see Balinese ceremonies and rituals flourishing and the root of these ceremonies is the ritual of Yadnya.

(9)   The existence of these flora and fauna become necessary for the day to day life of Balinese, where <u>traditional</u> **ceremonies and rituals** always ***flourish***.

(10)   **Yadnya**, or giving away, is the ***root*** of most <u>traditional</u> ceremonies in Bali.

(11)   **The Balinese <u>culture</u> *has flourished*** so that nowadays one can indicate a perfect bond between religions, tradition and culture to become the identity of the Balinese community.

The second conceptual metaphor is BALI IS A GIFT. It is a rare gift which belongs to the unique collection that Indonesia has to offer to the tourist.

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(12) Indonesia offers <u>visitors</u> an absolutely unique ***collection*** of the **most beautiful waterfalls** in the world. Unlike the rest of the world Indonesia is rich with rare ***gifts* of nature** and each regency (including Bali) has tens of sites you will never forget.

The promotional message presented on the websites is made up of elements that have the objective to capture the consumers' attention and generate a potential attraction for a particular location. The use of suggestive images, both verbal and visual, celebrate the destination, especially to remark its extraordinariness and preciousness. The websites construct and promote identity through the use of metaphor, leading readers/viewers to assign values with the metaphor to the locale itself.

4.3. Promoting Great Britain's capitals

The corpus compiled by S3 consists of the official websites of the three capitals of Great Britain: London, Edinburgh, and Cardiff. The aim here was to analyze the adjectives used for the promotion of Great Britain's capitals. S3 generated a frequency list and subsequently created an adjective wordlist which included the following: *great* (133); *well* (107); *free* (95); *best* (85); *famous* (80); *beautiful* (79); *family* (78); *new* (78); *perfect* (77); *special* (57); *historic* (55); *fantastic* (49); *unique* (49); *top* (47); *wide* (47); *largest* (44); *local* (44); *spectacular* (44); *popular* (43); *stunning* (41); *accessible* (40); *available* (40); *traditional* (40); *friendly* (36); *old* (36); *exciting* (35); *magnificent* (34); *modern* (34); *full* (32); *high* (31); *iconic* (30); *wonderful* (30).

Frequency is of interest to discourse analysis because language is not a random affair, and adjectives in particular, are chosen for a specific purpose. According to several scholars (e.g. Dann 1996; Maci 2007), adjectives are essential in making the promoted tourist destination unique and inimitable for readers. Some of the adjectives identified in this corpus fit in this category, for example *famous*, *beautiful*, *unique*, *perfect*, etc. The following extracts are examples of this:

(13) Notting Hill captivates visitors with its <u>*unique*</u> charm … (LC)

(14) You can explore our most <u>*beautiful*</u> (and private) building … (EC)

(15) Other adjectives, like *iconic* for instance, are used to invoke sensations of greatness.

(16) There are plenty of places to view the <u>*iconic*</u> skyline along the river … (CC)

Adjectives such as *special* and *free* are linked to offers proposed to tourists and that express money saving, a parameter highlighted by Pierini (2009).

(17) and we've <u>*special*</u> offers to help your budget go that bit further … (CC)

(18) It's <u>*free*</u>, fun and interactive … (EC)

S3 concludes by stating that the main purpose for which these texts are created is clear, that is, to persuade. The student argues that there four steps of persuasion you need to take your audience through if you want them to buy your product or visit your website: Attention, Interest, Desire, Action, the so-called AIDA approach to persuasive writing (see Dann 1996). Although adjectives are not the only way to achieve this goal, they are an important aspect in the persuasive function of the language.

5. Conclusions

In the past decade, various studies have shown how corpus linguistics has been adding considerably to both knowledge and methods of teaching LSP. Most of the research has focused on teachers' and linguists' findings, while few studies have focused on students' perceptions and self-compiled corpora. This paper has outlined how the use of specialized corpora in an ESP class can raise students' awareness of the linguistic devices in specialized discourse. Corpus linguistics in a LSP classroom "allows a learner to see the underlying connections between the

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various linguistic expressions employed, thus helping provide a deeper understanding of the text and adding the perception of coherence" (Caruso & Ruffolo, forthcoming). What is worth noticing is that the participants in our course, that is the learners themselves, highlighted the fact that corpus tools can help in understanding underlying discourse, and can aid them in applying a critical approach to the reading of texts. Moreover, carefully made lexical choices such as metaphors, are able to influence the existing textual meanings to promote a positive image of the product. Students agreed that it is difficult to fully analyze the texts due to insufficient information, but that a linguistic analysis of this kind can help to reveal the information that text producers are trying to hide from the readers.

6. Notes

[1] Although the authors have co-operated in the research work and in writing the paper, they have individually devoted specific attention to the following sections: Caruso: 3.2.4, 3.3, 4, 4.1, 4.2, 4.3, 5; Ruffolo: 1, 2.1, 2.2, 3, 3.1, 3.2.1, 3.2.2, 3.2.3.

[2] In particular, the original study intended to investigate how advertisers describe nature and how the search terms nature and natural are employed within these texts in order to attract potential 'green tourists' (see Ruffolo 2011).

[3] Students were given guidelines in order to categorize to define the natural environment. The description was defined as artificial when the few natural elements present in the descriptions of the sites were mainly controlled and arranged by men. Authentic nature refers to those sites where there is little or no human impact. It recalls the idea of untouched nature that should only be observed.

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Frames of winespeak: Varieties among languages and linguistic contexts

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Abstract. This paper offers a preliminary investigation on the advantages of tagging and analyzing a trilingual, comparable corpus of oenological texts with frame semantics, in order to portray the complexity of verbal meanings and argument structures in this specialized domain. The overall aim of the analysis is the creation of a lexicographical tool designed for supporting users to write a specialized text in an L2. Therefore the descriptive efficacy of frames was tested with polysemous lexical units, such as the verb *make*, and its Italian and French equivalents (*fare* and *faire*). Results confirm that Frames warrant fine-grained semantic-syntactic analysis, which could be useful for non-native writers, provided that a specific user-friendly presentation of the data is offered. On the other hand, however, the frame inventory is still incomplete and prevents exhaustive analysis.

Keywords. Cross-linguistic analysis, English, Italian, frame semantics, FrameNet database, French, polysemous verbs, register, syntactic patterns, winespeak.

1. Introduction

This paper preliminarily investigates the pros and cons of using frame semantics for analyzing a trilingual corpus of winespeak. While the existing literature on the oenological language has focused mainly on the metaphors employed to describe wine characteristics (Lehrer 2009; Caballero 2009; Caballero & Suarez-Toste 2010), we pay attention to the verbal predicates used to speak about wine, especially the event designed by combinations of verbs and argument structure constructions.

The data collected from a trilingual specialized corpus of oenological texts are thus analyzed according to the Frame Semantics (Fillmore 1985), using the Frames already inventoried in the FrameNet database as a reference. This approach has already proved to be suited for the description of complex conceptual scenarios of visual perception verbs (e.g. Atkins 1994; Johnson & Lenci 2011), it is to be expected that it will be the same for the verbal predicates lexicalizing different aspects of wine tasting. Moreover, the semantics of frames is a promising linguistic ontology for cross-linguistic comparisons, and provides useful data for lexicographical projects.

In this paper, the descriptive efficacy of frames for polysemous lexical units has been tested, analyzing the verb make, and its Italian and French equivalents (fare and faire). This allows to evaluate whether the FrameNet descriptions represent an adequate cross-linguistic basis of comparison, and may provide significant data also for user-friendly lexicographical projects, such as an oenological dictionary supporting with text writing in an L2.

In the following pages, Section 1.1. provides a brief discussion of the research methodology and the instruments used for the data collection and analysis. Section 1.2. describes how Frame semantics helps with the analysis of verbal predicates and their argument structure. Section 2 briefly lists the frames identified for the three polysemous verbs considered (*make*, *faire*, and *fare*). Section 2.1. illustrates the three most frequent frames inventoried in the corpus (`Intentionally_create`, `Manufacturing`, and `Cause Change`). The last section summarizes the pros and cons of analyzing the oenological corpus collected using the frame semantics approach.

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1.1. Corpus creation and data collection

The data are collected to compile a specialized comparable corpus of winespeak in English, Italian and French. The texts are wine reviews published in newspapers, magazines, blogs, or specialized sites selected from the Web (20 sites for each languages), and 100 English scientific papers dealing with the biochemistry of wine-making (oenology) and grape-growing (viticulture). The articles were collected from the Food Chemistry journal. Their inclusion will allow register comparisons between the scientific and non-scientific texts, such as an academic journal and reviews written by experts.

The total size of the corpus is 1,564,668 tokens, as it is shown at length in Tab. 1:

Type of Text	Word n
EN_journals	619,470
EN_reviews	382,249
IT_reviews	467,451
FR_reviews	95,497
Total	1,564,668

Table 1: Text types in the corpus

The French tokens are fewer than the other ones, since the French reviews collected were made up of shorter texts.

The corpus data are searched, manipulated and saved through the SketchEngine, the corpus tool designed mainly for lexicographical applications (Kilgarriff et al. 2004). After lemmatization, and part-of-speech tagging, we looked up the verb forms in terms of POS-tag.

Excluding the verbs lexicalizing 'to be' and 'to have', Fig. 1 below shows the ten most frequent verbs in the sub-corpora collected. It is remarkable that *make*, *faire*, and *fare* are similarly represented in the different language sub-corpora, since they are 4%-5% of the verbal items collected, even if in French *faire* is by far not the most frequent, while this is the case for the other languages considered. Moreover, *make* is the 19th most frequent verbal item in the Food Chemistry corpus (EN_F), representing only 1% of the sample, a significant indicator of the different register used in scientific texts, also proved by the kind of verbs most frequently used in this sub-corpus (e.g. *accord*, *report*, *observe*).
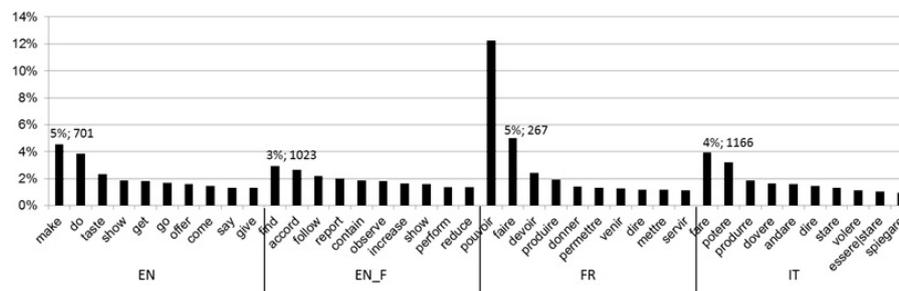
Figure 1: Verb types in the corpus

1.2. Theoretical framework

According to the semantic theory firstly proposed by Charles Fillmore in 1975, and developed with his collaborators ever since, knowledge is organized in frames, or conceptual structures that are stored in our semantic memory and represent "an inventory of schemata for structuring, classifying, and interpreting experiences" (Fillmore 1976: 25). Therefore, while contrasting the atomistic view that perception and knowledge consist in a process of abstraction form different single features, this semantic theory implies that knowledge units are complex aggregates of concepts including lexical meanings, patterns of beliefs, social practices, and pragmatic

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information as well (Fillmore 1976). Starting from these assumptions, the aim of Frame Semantics is to investigate the lexicon of a language in terms of the frames evoked by the lexical units. For example, commercial activities may be portrayed by the `Commercial Transaction` frame, which consists of two `Transfer` actions involving different participants, or *frame elements*: the first action implies the presence of a BUYER who gives to the SELLER some MONEY, in the second a SELLER gives the BUYER the GOODS. This conceptual distinction is evident if we refer to English verbs like *pay* and *sell*, which portray the different actions needed in order to 'buy' something, lexicalizing the two sub-events of the `Commercial Transaction` frame.

The analysis of lexical entailments, and of other kinds of relationships between lexical units serves therefore to outline the frames, and to distinguish one from the others. In the previous example of the `Commercial Transaction`, two sub-events were necessary to portray the complexity of the activity considered, while the `Sending` frame, lexicalizing verbs like *mail*, *fax*, and *wire*, *inherits* its properties from `Transfer`, since it implies the manner in which the transfer is done and therefore evokes some additional features. Moreover, since frames are complex schemes that portray the mental image associated to a specific meaning, lexical items are never considered as isolates, but in relation to the elements that contribute to determine their semantic value. Syntactic properties are therefore paramount, they are investigated directly from corpus data alongside the different meanings they are associated with. The results of this investigations are collected in the online FrameNet database, which allows both lexical and semantic searches in the English lexicon, since users can look for both words or frames.

Despite the huge scientific production and the many lexical analyses carried out within this theoretical framework, two major shortcomings have been pointed out, since the strict bottom-up methodology used prevents the formulation of rules for both identifying and limiting the number of frames, therefore there's no «systematic analysis of a target lexicon», as Peter Hanks (2012: 57) remarks. Nevertheless this limitations haven't prevented FrameNet popularity, and different attempts have been made to extend the analysis to specialized domains (e.g. Venturi 2009; Dolbey 2006) too, using specific ontologies to elaborate on the existing frames, and adding new ones for the technical meanings.

Particularly interesting are the possibilities arising from the cross-linguistic comparisons offered by the FrameNets for other languages that are currently under construction (e.g. Burchardt et al. 2009; Subitras 2009). The main concerns of these projects however are almost the same as those dealing with the specialized domains, since new frames must be added in order to capture semantic differences and lexical gaps.

The aim of this paper is however different, since it shows how the fine-grained analysis of frame semantics can be applied cross-linguistically for comparing a trilingual specialized corpus of oenological texts. However, no addition to the existing frame inventory is proposed, but rather an illustration of their descriptive efficacy for polysemous lexical units, such as the verb *make*, and its Italian and French equivalents (*fare* and *faire*). This allows to evaluate whether the FrameNet descriptions represent an adequate cross-linguistic basis of comparison, and provide significant data also for more user-friendly lexicographical projects, such as an oenological dictionary supporting with text writing in an L2.

Actually verbs are often neglected by specialized dictionaries, while they are of the outmost importance for text writing, particularly in an L2. Under this respect, also the general meaning verbs are paramount (Araceli et al. 2011) and shouldn't be omitted even from the lemma inventory of a specialized dictionary, as long as this dictionary must provide assistance for text production.

In order to evaluate the degree of cross-linguistic comparability, a specific domain labeling was added to the Frames using descriptors for seven different oenological sectors, which were extracted from the Wikipedia page dedicated to Wine. The wine sector labeling includes: *wine production*, *wine tasting/evaluation*, *wine classification*, *wine selling (collecting)*, *wine uses*,

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wine consumption, and *health effects* of wines. The different 'wine categories', as they will be called here, specify the meaning of verbs, synthetizing the value of their arguments. Consider the following examples, the first is classified as belonging to the wine tasting category, the second to wine uses, however the frame is the same for both (`Cause_change`):

(1)   In short, Antinori *makes* oak and butter-notes desirable

(2)   A blend of the local grape varieties […] it has an explosively fruity palate poised between tangy tropical fruit and citrus […] that *makes* it a very versatile food match.

There are, in fact, other frames that elaborate on the idea of a change of state (i.e. `Cause_change_of_consistency`, `Cause_change_of_phase`, `Cause_change_of_position_on_a_scale`, `Cause_change_of_strength`) but, as it is expected, they are lexicalized by different, more specific verbs (e.g. *thin*, *curl*, *melt*, *defrost*, *increase*).

The different wine categories serve to portray the semantics of generic frames which probably should be elaborated on more specifically. Therefore, the more varied is the distribution of the different wine categories within one frame, the more generic is the frame considered. This will provide quantitative data about the lack of cross-linguistic correspondences, due to the incompleteness of the current FrameNet description.

2. Data analysis

The corpus annotation for the three verbs considered (*make*, *faire*, and *fare*) allows to identify the following 49 frames, while for 5 occurrences no appropriate description was found, therefore they are signaled by the question mark in Tab.2:

?	Evaluative_comparison	Performers_and_roles
Arriving	Evidence	Possession
Awareness	Examination	Process_start
Becoming_visible	Experiencer_focus	Progress
Causation	Getting	Relative_time
Cause_change	Going_back_on_a_commitment	Representative
Cause_to_start	Hostile_encounter	Self_motion
Choosing	Inclusion	Stage_of_progress
Coming_to_be	Ingestion	Stimulus_focus
Commerce_sell	Intentionally_act	Subjective_influence
Compatibility	Intentionally_create	Success_or_failure
Cooking_creation	Judgment	Successful_action
Deserving	Leadership	Supporting
Differentiation	Manufacturing	Temporary_stay
Distinctiveness	Membership	Travel
Earnings_and_losses	Opinion	Trendiness
Education_teaching	Part_whole	

Table 2: Alphabetically ordered list of frames for *make*

We list below the most frequent frames decreasingly ordered. The first is `Intentionally_create`, which lexicalizes the most frequent value of 'make', namely 'create', while 3% of the corpus refers to a `Manufacturing` process, which however is a quasi-synonym of the previous one. `Cause_change`, instead, evokes the concept of 'becoming', such as in (1) and (2). `Causation` refers to "the idea that some event is responsible for the occurrence of another event (or state)", while the `Performers_and_roles` frame captures the metaphoric occurrences in which wine is considered as a PERFORMER which plays a ROLE in a PERFORMANCE:

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Frame	Frequency	%
`Intentionally_create`	625	71%
`Cause_change`	90	10%
`Manufacturing`	23	3%
`Causation`	17	2%
`Performers_and_roles`	12	1%

Table 3: Decreasing frequency of frames

2.1. Frames and Wine Categories intersections

In order to evaluate the descriptive efficacy of frames for the present oenological corpus, a comparison with the 'wine categories' is provided (see § 1.2.). Figure 2 shows the intersections between the frames and the wine categories, demonstrating the tendency of 'wine production' category to evoke the `Intentionally_create` and `Manufacturing` frames (91%). The chart also shows the polysemy of the `Cause_change` and `Causation` frames, which intersect almost all the wine categories considered, displaying a tendency to lexicalize more frequently tasting aspects (52% and 35% respectively):

	Intentionally_create	Manufacturing	Cause_change	Causation	Performers_and_roles
◆ Production	91%	91%	18%	6%	0%
■ Tasting	5%	0%	52%	35%	17%
▲ Uses	1%	0%	11%	18%	50%
✕ Classification	2%	0%	9%	0%	0%
✳ Selling	1%	9%	7%	6%	8%
● Health effects	0%	0%	0%	29%	0%
✛ Consumption	0%	0%	2%	6%	25%
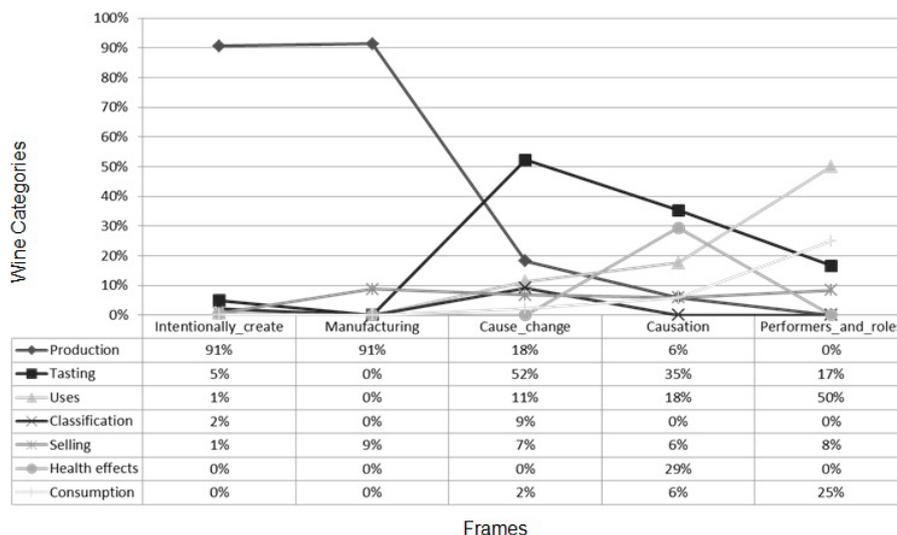
Figure 2: Intersections of frames and wine categories

2.1.1. Intentionally_create, and Manufacturing frame and the Wine production category

The most typical meaning of *make*, namely to 'create' or 'produce' something, is captured by two different frames: `Intentionally_create` and `Manufacturing`.

Statistics shows that this meaning is typically used in the English non-scientific and scientific corpus.

Sub-corpora	Frequency	'make' in the sub-corpus	%
EN_F	103	328	31%
EN	400	701	57%
FR	15	267	6%
IT	45	1166	4%

Table 4: Intentionally_create frame and Production category

The `Intentionally_create` frame is evoked by a CREATOR which creates a new entity, the CREATED_ENTITY [CrEnt], possibly out of COMPONENTS [Cmpnt], as it is shown in the examples below (3a-b):

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(3) a. [CrEntThis wine is a naturally sweet wine] *MADE*Target [Cmpntwith Garnacha Tintorera grapes harvested and dehydrated in 2010 such as follows]

   b. [CrEntIl soave è uno dei vini bianchi italiani più importanti e più conosciuti all'estero] *FATTO*Target [Cmpntcon uve da Garganega e Trebbiano di Soave.] CNI

   c. […] [Cmpntle résultat d'un assemblage de 4 cépages avec lesquels] [onCreator] *FAIT*Target [CrEntle porto] […] CNI

The target predicate in (3a-b) is preceded by the core frame element denoting a CREATED_ ENTITY, and they are followed by the non-core element instantiating the COMPONENTS from which the wine is made, unlike example (3c), in which the order of the two frame elements are reversed. Furthermore, examples (3a-b) do not include the core frame element referring to the CREATOR of the entity, which is clearly understood from the context; its absence is indicated by CNI (Constructional Null Instantiation).

The frame elements annotation (FEs) is completed with the syntactic pattern analysis, which allows to capture the distributional preferences of the verb. Tab. 5 below lists the syntactic patterns for the `Intentionally_create` frame and the wine production category considered:

Syntactic pattern	n.	%	Language and domain	Syntactic pattern	n.	%	Language and domain
direct object	134	34%	English	by-comp	6	8%	Food Chemistry
from-comp	59	18%	English	without-comp	6	8%	Food Chemistry
in-comp	35	13%	English	of-comp	7	9%	Food Chemistry
one argument	33	14%	English	direct object	4	5%	Food Chemistry
with-comp	23	11%	English	in-comp	3	4%	Food Chemistry
by-comp	19	10%	English	one argument	2	3%	Food Chemistry
of-comp	15	9%	English	at-comp	1	1%	Food Chemistry
dir.obj + from-comp	12	8%	English	dir.obj + from-comp	1	1%	Food Chemistry
dir.obj + with-comp	12	9%	English	direct object	4	14%	French
dir.obj + in-comp	10	8%	English	à [to]-comp	2	8%	French
dir.obj. + that-clause	9	8%	English	pour [for]-finite verb	2	11%	French
for-comp	7	6%	English	se#one argument	2	12%	French
non-finite verb-dir.obj	7	7%	English	à partir de [from]-comp	1	7%	French
all over-comp	2	2%	English	de [of]-comp	1	7%	French
as-comp	2	2%	English	du [from]-comp	1	7%	French
dir.obj + by-comp	2	2%	English	par [by]-comp	1	7%	French
on-comp	2	2%	English	direct object	17	49%	Italian
through-comp	2	2%	English	con [with]-comp	9	21%	Italian
to-non-finite verb	2	2%	English	di [of]-comp	3	7%	Italian
dir.obj + to-no-finite verb	2	2%	English	in [in]-comp	3	7%	Italian
around-comp	1	1%	English	si#-dir.obj	2	5%	Italian
at-comp	1	1%	English	si#con-comp	2	5%	Italian
chez-comp	1	1%	English	da [from]-comp	2	5%	Italian
dir.obj + for-comp	1	0%	English	per [for]-comp	2	5%	Italian
dir.obj + since-comp	1	0%	English	si#a-comp	1	2%	Italian
dir.obj + under-comp	1	0%	English	si#-one argument	1	2%	Italian
throughout-comp	1	0%	English	si#in-comp	1	2%	Italian
from-comp	61	85%	Food Chemistry	come [as]-comp	1	2%	Italian
with-comp	12	15%	Food Chemistry				

Table 5: Syntactic patterns in the Intentionally_create frame and the Wine production category

It is remarkable to notice that the most recurrent syntactic pattern in all the languages considered

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is the transitive construction with a direct object, while in Food Chemistry it is the dynamic passive construction formed by *make* plus *from*, as in (4):

(4)   The treatments compared to the control were wines *made from*: unheated juice (C1), unheated juice with AGP addition (T2), heated juice (C2) and heated juice with AGP addition (T1).

However, unlike English, in French and Italian there are pronominal verb constructions (i.e. *se faire* and *farsi*, respectively) which in Italian license both direct and direct arguments; see examples below:

(5)   Août à fin Septembre et la fermentation *se fait* cépage par cépage.

(6)   a.   per molti di voi in Abruzzo non *si faceva vino* fino alla lettura di queste righe[...]
         b.   Il vino *si fa con il cervello*.

The `Manufacturing` frame, in which a PRODUCER [Man] produces a PRODUCT [Pro] from a RESOURCE for commercial purposes, such as in (7), has no attestations in Food Chemistry and in French, since in this language this particular meaning is lexicalized by the verb *produire*:

(7)   a.   While [$_{Man}$many producers] *MAKE*^{Target} [$_{Pro}$Recioto di Soave], [$_{Man}$they] *DO SO*^{Target} in small quantities. [$_{Pro}$ About 1400 hectoliters] *ARE MADE*^{Target} annually [...]
         b.   [$_{Pro}$Di aglianico][$_{Man}$se][$_{Pro}$ne] *FANNO*^{Target} 2 milioni all'anno.

In both the examples, the target predicate licenses a core frame element PRODUCER which in (7a) is indicated by a person and in (7b) by the impersonal pronoun se 'it'. The PRODUCT in example (7a) is the wine, whereas in (7b) it is the grape.

2.1.2. The Cause Change Frame and the Tasting category

The `Cause_change` frame lexicalizes tasting aspects half the times. In such instances, 'make' is used to expresses the idea that something acquires a specific taste, since an AGENT or a CAUSE makes the ENTITY change in terms of its "category membership" (example 8a), or with reference to the value of the attribute considered (example 8b):

(8)   a.   [$_{Cause}$ The Eyrie Estate gives a wonderful combination of lean structure, and rich flavors] *MAKING*^{Target} [$_{Ent}$the wine] [$_{Final\_category}$ feel both refreshing, and compelling]. INI
         b.   [$_{Cause}$ the volcanic soils] *CAN MAKE*^{Target} [$_{Ent}$the wine] [$_{Final\_category}$ among Sicily's most instinctive]. INI

It could be useful to compare the previous examples from our wine corpus to one provided by the FrameNet Web site, in order to check their comparability:

(9)   [$_{Agent}$Biologists at Fort Detrick's newest biodefense center] may be asked to *MAKE*$_{Target}$ [$_{Entity}$some of the world's deadliest microbes] [$_{Final\_category}$even more dangerous than they already are]. [$_{Initial\_category}$DNI]

In the wine speak corpus, no frame element AGENT was found, while the ENTITY is lexicalized also by a brand name (example 12) used as an epitome for the word 'wine', or by a tasting component (e.g. En. *the nose*, *the smell*; Fr. *notes florales*, *caractéristiques*; It. *i tannini*, *profumi*).

Statistics show that this meaning of *make* is more used in the English and French sub-corpora (see Tab. 6):

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Sub-corpora	Frequency	'make' in the sub-corpus	%
EN_F	8	701	1%
EN	17	328	5%
FR	8	267	3%
IT	13	1166	1%

Table 6: Cause Change Frame and the Tasting category

From a syntactic point of view, the languages considered display different constructions, since in Italian and French there are also indirect arguments for this specific meaning of 'fare' and 'faire', while in English only direct constructions are displayed, and all the clauses are of the kind: *make the wine/it/this … + adjective* (e. g. *sweet*, *palatable*, *pleasurable*, *refreshing*…). In two instances the adjective is replaced by a noun preceded by an article (10), and sometimes the subject is not the wine, but one of its components (11); in other instances wine components are instead the direct arguments of the verb (12).

(10) The LBV style of port is released when it's ready to drink, and this one has the purring power and chocolate-edged dark fruit *to make it a joy*

(11) Currently the youth shows as fumey *making the bouquet* almost medicinal

(12) In short, Antinori *makes oak and butter-notes desirable*;

Two unconvincing instances have been included within the inventory of lexical items that evoke this meaning, namely the phrasal verb *make for* which nevertheless is not completely portrayed by this frame both syntactically and semantically, since its meaning corresponds to 'conduce to', 'proceed or direct one's course toward':

(13) this well-priced Kiwi fizz layers some gently toasty flavours over a whistle-clean, lemon-and-fresh-apple palate, *making for* a far more pleasurable experience than most budget champagne.

(14) Medium acidity and all French oak barrels *make for* great balance;

On the contrary, in Italian and French the direct construction with the active verb form is less frequent, whereas different syntactic patterns are displayed. Firstly, the indirect construction introduced by the preposition 'of', which is 'di' in Italian and 'de'/'du' in French; the direct construction with the pronominal verb forms 'en faire'/'se faire' in French (*La salinité se fait discrète*), and 'farne'/'farsi' in Italian (*non fa della complessità la sua cagentaratteristica*), which is by far the most frequent pattern in this language. Tab. 7 below briefly reports on the different syntactic patterns found for French and Italian:

Syntactic pattern	n.	%	Frames and Wine Category intersection	Language and domain
adj	1	13%	Cause Change & Tasting category	French
#en + dir. obj.	1	13%	Cause Change & Tasting category	French
que [that]-clause	1	13%	Cause Change & Tasting category	French
#se + dir. obj.	2	25%	Cause Change & Tasting category	French
de/du [of]-comp + dir. obj.	2	25%	Cause Change & Tasting category	French
direct object	1	13%	Cause Change & Tasting category	French
adj	2	15%	Cause Change & Tasting category	Italian
di [of]-compound + dir. obj.	3	23%	Cause Change & Tasting category	Italian
ne# + dir. obj.	4	31%	Cause Change & Tasting category	Italian
si# + dir. obj.	4	31%	Cause Change & Tasting category	Italian

Table 7: Syntactic patterns in the Cause Change Frame and the Tasting category

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3. Conclusions

The fine-grained analysis offered by the Frame Semantics approach has proved the kind of insights that it may offer in terms of a cross-linguistic comparison, namely the fact that, starting from a semantic basis of comparison, detailed similarities and differences in the surface syntactic structure may be highlighted. This kind of data could be extremely useful for text writing in an L2, and may lead to the creation of a writing assistant tool specialized in the oenological domain, provided that a user-friendly interface is created for the scope, with adequately understandable labels for the intended users, who must easily understand the meanings and contents of frames. This of course requires a specific future investigation.

However, many shortcomings have already been pointed out. Firstly, the still incomplete inventory of the frames provided, and the difficulty to identify them, since there are no general rules for discerning one frame from the others, except the careful inspection of those already inventoried in FrameNet. This search is particularly complex for polysemous words, such as the verbs analyzed so far, and for the idiomatic expressions. For example, during the annotation of this oenological corpus, it was difficult to select the frame for the Italian idiom 'far colpo' (Engl. 'to impress'), which eventually was considered as evoking the `Experiencer_obj` frame.[1]

Concluding, it must be underlined that the limited aim of analyzing the verbal items and their arguments in a small specialized corpus is a more affordable enterprise than the exhaustive description of the lexicon of one language (see Schmidt 2009), and this lexicological analysis can eventually be transformed in a user-friendly lexicographical tool, if data are stored in a consistently designed database.

4. Notes

[1] See Burchardt et al. (2009) for the treatment of metaphors and idioms in the German FrameNet.

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The concept of contagion in finance

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Abstract. In everyday communication, figurative language is used to express emotions, value judgments and beliefs as well as to blend and create new concepts. In finance, metaphors often present messages of alarm in a soothing tone to overlook the cause of a problem and focus, instead, on a solution. The concept of *contagion* has recently entered discourse on international systems of regulation, finance and economics. We examine the use of *contagion* at semantic and grammatical levels and show how various patterns are used to elaborate particular features and diminish others. We present a corpus-based analysis of US congressional documents and compare them to medical reports from the World Health Organization and the Center for Disease Control. The results show that some lexical-pragmatic properties are carried over from the biomedical context while others are not, which has implications for the specialist language of finance and politics. In another analysis, we introduce a computational method based on word clustering in WordNet, to analyse how the context of *contagion* signals various metaphors in the congressional corpus. The results show patterns in the metaphorical domains that *contagion* uses. We conclude that *contagion*'s use in finance is more complex than term-borrowing as it establishes a range of lexical, pragmatic and figurative properties.

Keywords. Lexical genesis, metaphor, corpus analysis, computational analysis.

1. Introduction

In the 1930s the term *market crash* was used to refer to the beginning of economic recession. Now, we use terms such as *financial recession, credit squeeze* and *downturn*. Unlike a crash, which implies that recovery is unlikely, recessions and credit squeezes allow for eventual recovery. In recent financial discourse, the term *contagion* has been used to describe the onset and transmission of problems among financial institutions. Similar to *recovery*, *contagion* uses a metaphor of disease and illness to relate economic systems to living beings. How does such a disease, biological or financial, spread? In the early 1900s, a 14th century term *contagion* was used to describe diseases that could be communicated from one person to another. The term "communicable" is relatively neutral but *contagion* carries the negative implications that come with diseases (Pernick, 2002). This paper seeks to provide an account of how the concept of contagion has been figuratively applied to finance, based on analyses at different levels of linguistic description. Tracking the use of new terms in specific domains is important to fully understand the meaning of new terms as well as how such a process takes place in general. Doing so will show that technical language often contains semantic and conceptual ambiguities, emerging over time and often overlooked.

The term *contagion* originated in morality and religion, from where it was adopted by medicine and biology and subsequently by the social sciences and most recently in finance and economics. In this paper, we explore the use of this term in academic writing and in official documents of the US Congress, the World Health Organization (WHO) and the U.S. Center for Disease Control (CDC). The congressional and biomedical texts were analysed to provide a comparative analysis of *contagion*. The congressional documents were further analysed for use of what Andrew Goatly calls *root analogies,* which are primitive metaphorical mappings that "structure

the lexicon of English" (Goatly, 2011). We found that the term *contagion* continually finds use in new disciplines and that both researchers and legislators adapt the term quickly to suit new domains. By examining the metaphors underlying the use of *contagion*, we found they commonly relate institutions and systems to concepts like war, defense, ideas and emotion. Such relations between terms and concepts are common and systematic in everyday language (Lakoff & Johnson, 1980). We begin this paper by looking at the historical and current use of *contagion* in representative synchronic and diachronic samples of language.

Our goal is to characterize the communicative efficacy of the term by providing a comparative, corpus-based analysis of its semantic, grammatical and conceptual behaviour across domains. As we will see, because the term comes with some defining features from its originating biomedical context, its use in finance points to subtle changes at the semantic, grammatical and conceptual levels. To address the semantics of *contagion*, we present a concordance analysis to extract semantic features based on the term's context. This is similar to corpus-based studies that seek to understand changes in meaning and word behaviour by examining contextualised evidence (Ureña & Faber, 2011, Charteris-Black & Musolff, 2003, MacMahon, 1994). Secondly, we explore the term's use in its most common grammatical relations. At this level, we find that productivity in some relations is quite different between financial and biomedical texts. Lastly, we introduce a semi-automated procedure for extracting likely metaphorical domains using WordNet and Andrew Goatly's theory of *root analogies* (Goatly, 2011; Miller, 1995). At the conceptual level, we find that *contagion* instantiates a range of figurative concept that are common throughout economic literature, as well as concepts that elaborate on the semantic and grammatical analyses. In light of our findings, we propose that though *contagion* has distinct semantic and grammatical behaviour in financial language, it does not yet have a stable definition, relying, instead, on diversely interpretable metaphors mapping different concepts in different situations.

2. Related work

Understanding the circumstances, mechanisms and implications of *contagion*'s adoption in finance is important not only for understanding modern finance, but also for uncovering how this type of language change comes about. In this work, we adopt a data-driven approach to language analysis, common to corpus-linguistic research. Using text as data is not foreign to matters of figurative language (Deignan, 2005a; Goatly, 2011; Charteris-Black & Musolff, 2003) nor to cognitive linguistics (Gries & Stefanowitsch, 2006) or computational linguistics (Gerow & Keane, 2011a; 2011b). What the term *contagion* provides, rather, is a kind of case study, observable in recent documents and relevant to the future of international economics.

In finance, *contagion* is a figurative term relating institutional problems to a disease. Metaphor has long been argued to be a pervasive cognitive phenomenon, central for understanding and comparing concepts. However, metaphor comprehension appears to be partly mediated by how metaphors are presented in text (and other modalities). For example, analogical metaphors, such as "an atom is like the solar system", are thought to require a process of feature alignment and projection (Gentner, 1988; Bowdle & Gentner, 2005). Other metaphors appear to be processed by a category matching procedure (Glucksberg & Keysar, 1990; Glucksberg & Haught, 2006). Linguistic metaphors, and figurative language more broadly, are found in many forms in addition to analogies and category assertions. This has lead to finer-grained delineations of figurative language, such as morphological metaphors, metonymy and synecdoche (Deignan, 2005b; Barnden, 2010; Stockwell, 2002). Further, grammatical form, lexical cues, modality and narrative context are known to mediate processes of comprehension (Torreano et al., 2012; Prasada et al., 2012, Thibodeau & Boroditsky, 2011). While metaphor processing surely constrains how terms are figuratively applied, the present study seeks to provide a corpus-based account of how this process might be evidenced in text.

The analyses presented here are based on corpus-linguistic techniques in which we adopt a

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data-centric view drawing on language use. This view is generally adopted by corpus-based studies in language change (MacMahon, 1994), cognitive linguistics (Gries, 2006) and metaphor studies (Deignan, 2005a). The ramifications of metaphor use in economics have been analysed in two-sided opinions (Charteris-Black & Musolff, 2003) and ontological commitments (White, 2003). The current study employs similar techniques at the semantic and grammatical levels, where we analyse features of *contagion* and make observations about the grammatical pattern in which it is observed. Further, to exemplify the strengths of a computational approach, we use a semi-automated method of identifying figurative concepts in raw text. This method represents a synthesis of corpus-based, cognitive linguistics (Goatly, 2011) and computational lexicography (Miller, 1995). Computational metaphor analysis has been addressed in various (and often disparate) ways, but to our knowledge, this is the first study to apply a computational analysis of figurative language to terminological research (see Shutova, 2010 for a review).

3. Analysis of institutional writing

3.1. A corpus-based approach

To examine *contagion*'s use, we employ traditional corpus analysis techniques (concordancing, co-text examination, part-of-speech (POS)-tagging and collocation analyses) to explore its semantic and grammatical properties. We take a feature-based approach to the semantic level of description that will reduce the need for intuitions about typicality and embodiedness. Additionally, the feature-based approach will simplify a comparative analysis between corpora in different domains. The semantic features, which are fuzzy and somewhat intuitive, are not meant to exhaustively capture the term's semantic behaviour, but instead, allow quantitative comparisons among domains. The results from the feature analysis motivate a finer-grained inspection of the grammatical behaviour of the term. Both of these evaluations comprise the starting point of a computational analysis of *contagion*'s conceptual behaviour with regard to the metaphors it instantiates.

3.1.1. Dataset

The data we use for this examination was chosen to be relatively serious, deliberate forms of communication. However, because we do not necessarily want to examine academic language, as research publications tend to be explanatory in nature, we built a collection of documents from the United States Congress. This corpus consists of hearings, testimonies, reports and press releases. Because hearings and testimonies are usually made under oath, the language they contain comes with a degree of deliberation not common in less formal venues. The corpus consisted of 39 publicly available documents from 2001 to 2012 downloaded from www.senate.gov and www.congress.gov. It contained a total of 267,256 tokens, and was made up of 18 testimonies, 10 reports, 8 hearings and 3 press releases. There were 96 instances of the word *contagion* in the corpus, occurring in 87 sentences, always in the singular noun form, and always referring to the financial concept. The words *contagious*, *contagiousness* and *contagions* never occurred.

To compare contagion's use in the financial and legislative domain, where the term is figurative, we developed a corpus of disease-related texts. We collected documents from the World Health Organization (WHO) and the US Center for Disease Control (CDC). The corpus consisted of 13 news reports from the WHO, 5 articles from the WHO's *Disease Outbreak News*, 44 papers from the CDC's *Emerging Infectious Disease* journal and 38 reports from the CDC's *Morbidity and Mortality Weekly Report*. This consisted of 100 documents from 2000 to 2012, downloaded from agencies' websites. In this collection the word *contagion* occurred only 10 times, in 10 sentences and *contagious* occurred 141 times in 120 sentences. Both corpora are available online[3].

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3.1.2. Method 1: Keyword in context

We first conducted a concordance analysis with Sketch Engine (Kilgarriff et al., 2004) to examine the context of *contagion* in the congressional and biomedical collections. Concordances are a way to systematically analyse a term's context, and are commonly used by lexicographers to develop definitions. Moreover, this is perhaps the simplest place to begin a terminological analysis of a word used in a *new* context. This analysis provides a base-level comparison between *contagion* in finance and *contagion* in biomedical text. Using the 87 sentential instances in the congressional corpus and the 130 in the biomedical corpus, semantic features were extracted manually. Extracting features to distil the semantic behaviour of *contagion* addresses two methodological goals. It adheres to the language-as-data paradigm adopted by our corpus-based approach, allowing a quantitative analysis. It also minimises the requirements for intuitions about the term's use with exemplary, prototypical or embodied concepts (Lakoff & Turner, 2009). The feature analysis will lead into the grammatical and conceptual analyses presented in the following sections.

3.1.3. Results

In the congressional corpus, the noun form is the only form of the word – whereas in the biomedical corpus the adjective form, *contagious,* dominates (83%). Overall, the context of *contagion* carries a negative affect, and instantiates various kinds of type, movement and scope features (Table 1). Sometimes *contagion* is personified with action verbs, affording it a kind of independence to move, effect change and cause events. This also allows *contagion* to be characterized in terms of what it *does,* as in the sentence, "The contagion may spread further in the short term." This autonomy is found significantly less in the biomedical texts where *contagious* is typically used to modify or qualify another object, as in *highly contagious*.

Feature	US Congressional Reports ($N_{contagion}$ = 87)	Medical Reports ($N_{contagious}$ = 120; $N_{contagion}$ = 10)
Can be helped / prevented	18 (*reduce-3, prevent-3, avoid-2, protect-2, stem-2, avoid-2, combat, end, restrict, stop*)	9 (*avoid-3, controlling-2, eradication, prevent, preventable, reduce*)
Has scope	22 (*from-7, source-3, to-3, into-2, spread-2, inside-2, among, scope, transatlantic*)	5 (*period-5*)
Has types	15 (*financial-6, global-2, debt, default, international, market, transatlantic, risk, systemic*)	4 (*potentially-2, disease, <disease>**)
Can move / has velocity	9 (*come-2, spread-2, driven, force, rapidly, restrict, transmit*)	10 (*from-5, spread-2, transmit-2, to*)
Can worsen	4 (*deepen, intensification, magnified, spark*)	1 (*further*)
Is a type of [...]	5 (*risk-3, effect-2*)	47 (*disease-19, <disease>-18*, abortion-2, person-2, risk-2, individual, nature, origin, secretion*)
Cline		54 (*highly-33, less-5, most-4, as-3, more-2, readily-2, extremely, moderately, particularly, serious, slightly*)
Agent	5 (*itself-2, create, force, present*)	
Can cause [...]	6 (*effect-3, spark-2, fueled*)	
Can present itself	2 (*appear, emerge*)	

Table 1: Features, their frequency of occurrence in each corpus and their instantiations found in the concordances of congressional and medical texts. Note that *<disease>* denotes a specific disease.

In the congressional corpus, there are five features not apparent in the biomedical corpus: *agent, can cause, can present itself, is caused by* and *has depth*. These features share a theme: that contagion is something that can act, be acted upon and most importantly, can be discussed without reference to its relationships. In a sense, the concept of contagion is more independent in finance and legislation than in medicine and biology. Moreover, the congressional documents exhibit a wider range of semantic features. For example, note the number of scope, type and

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movement features. Not only is it more common in politics to use these properties, but also they are instantiated in more diverse ways. Perhaps this reflects the newness of the term in this domain or points to it being less tightly defined.

Considering the biomedical corpus, we see that the adjective form, *contagious*, appears often with the *cline* feature. This is observed when the term is used with intensifiers and diminishers such as *highly* or *slightly*. This is perhaps due to writers describing specific diseases or maladies, that can, in them, be contagious. These *cline* instantiations are absent in the congressional corpus, where there is little to no talk of what, or in what way, something can be contagious. The *type* feature is also more prominent in the biomedical texts. In medicine, it appears that there can be many things that are potentially contagious, whereas only two instantiations (five instances) were found in the congressional documents. This may also point to a lack of specificity in finance about exactly *what* a contagion is contagious *to*. Overall, it appears that finance lacks two analogous features found in medicine and biology: the connection between the contagion and that which contracts the contagion, and the relation between the contagion and its own type (disease, virus, infection, etc.).

3.1.4. Method 2: Grammatical collocates

The results of the feature analysis provide an overview of the semantic behaviour of *contagion*, as used in the congressional and biomedical collections. We can extend this understanding by examining the grammatical constructions in which it occurs. The features identified above do not address how the word is put to use grammatically. Is *contagion* compared to other problems in finance? Is it used to modify existing problems, or perhaps is itself modified? Is it typically the subject of sentences, or the object? This analysis is less concerned with the semantics of *contagion*, seeking to provide a finer-grained description of its function. Diachronic changes at the grammatical level have been shown to relate to other levels, such as token and word-form frequencies (Gerow & Ahmad, 2012) and they constitute a key component of language change (MacMahon, 1994). Comparing the biomedical and financial corpora shows that *contagion* has undergone more than semantic changes. To investigate *contagion* at the grammatical level, the corpus was tagged with part-of-speech (POS) information (noun, verb, adjective, etc.) and grammatical relationships were extracted (subject_of, object_of, modifies, etc.) using templates on the POS sequences. TreeTagger was used for POS tagging (Schmid, 1995) and Sketch Engine (Kilgarriff et al., 2004) was used to extract the grammatical relations.

3.1.5. Results & discussion

Table 2 summarizes the common relations where *contagion* was found in each corpus. We see that *contagion* can be *stemmed*, *reduced*, *avoided* and *sparked* in an object_of relationship. As an object, it can be *transmitted*, *stopped*, *restricted*, *ended*, *driven* and *prevented*. Note the different grammatical modifications where there are various types of contagion, such as *market*, *financial*, *global* and *systemic*. Reviewing and/or relations, *contagion* is commonly compared to *deterioration*, *stress* and *crisis*. Lastly, the word's use in various prepositional and subordinate conjunctive phrases shows it can affect things like *unions*, *areas*, *countries* and *debtors*.

Contagion's grammatical collocates in the congressional corpus show that it is commonly used as a modifier and is commonly modified itself. Given the uniformly nominal use of the term, its use as a modifier implies that while there are types of contagion, there is little reason to describe something as *contagious*. There are occurrences like "debt contagion" and "market contagion" but never "contagious debt" or "contagious market". In the congressional corpus, note the term's productivity as an object where there are 26 such instances, as opposed to the biomedical corpus where are only three. The most frequent object-object relation is "transmitting contagion" which is perhaps a defining feature of *contagion* as opposed to a generic malady. In the and/or constructions, there are some proposed synonyms and antonyms such as *stress*, *deterioration*, *confidence* and *crisis*. From a definitional standpoint, these collocates point to pre-existing terms

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used to define and explain the concept of contagion itself. Comparing subject_of arguments between domains, biology devotes considerably more discussion to *what* is contagious (a disease*, person*, *virus*, etc.) as opposed to finance where there is no talk of contagious entities. It is conceivably important for biology to specify exactly how a contagion exhibits movement and transmission, independent of its carriers – but not so in finance. This same aspect of specification is perhaps used to distance financial and political institutions (the carriers of contagion) from the phenomenon of transmission, making contagion a problem independent of the systems' constituents. Instead of talking about financial institutions and their problems, authors talk about contagion – a move that detaches the problematic phenomenon (contagion) from the problem itself (institutional behaviour).

	Relation	Keyword (left)	Collocate / argument	Keyword (right)	Frequency (per/100k)
Congressional Documents ($N_{contagion}$=87; 32.5/100k)	object_of		26 (*be-6, avoid-3, stem-2, prevent-2, reduce-2, spark, transmit, magnify, stop, restrict, spread, end, drive, reflect, address, make*)	**contagion**	26 (9.7)
	modifies	**contagion**	19 (*risk-7, effect-5, event-2, deterioration, leader, securitization, concern, leader*)		19 (7.1)
	modifier		24 (*financial-6, debt-2, global-2, market-2, fueled, combat, gradual, securitization, widespread, possible, potential, systemic, default, international, such, new*)	**contagion**	24 (9.0)
	and/or	**contagion**	9 (*deterioration, stress, confidence, leader, investor, area, economy, crisis, market*)		9 (3.4)
	subject_of	**contagion**	11 (*be-5, have-4, spread, take*)		11 (4.1)
Medical Documents; ($N_{contagion}$=10; 1.7/100k)	object_of		3 (*avoid, prevent, reduce*)	**contagion**	3 (0.05)
	modifier		4 (*<disease>, suicide, further, possible*)	**contagion**	4 (0.07)
	and/or	**contagion**	2 (*vector, reporting*)		2 (0.03)
Medical Documents; ($N_{contagious}$=120; 2.1/100k)	modifies	**contagious**	76 (*disease-39, <disease>-16, person-3, infection-3, abortion-2, nature-2, virus-2, secretion, traveller, origin, syndrome, pathogen, individual, illness, period, case*)		76 (1.3)
	modifier		48 (*highly-33, not-6, as-2, moderately, readily, extremely, particularly, potentially, usually, often*)	**contagious**	48 (0.8)
	and/or	**contagious**	53 (*acute-6, bovine-5, infectious-5, active-5, viral-4, caprine-3, fatal-3, respiratory-3, advanced-2, new-2, other-2, miasmatic, pustular, diarrheal, deadly, lethal, transmitted, virulent, preventable, entire, notifiable, serious, bacterial, able*)		53 (0.9)
	subject_of	**contagious**	21 (*<disease>-8, person-3, virus-2, case-2, empowerment, infestation, lesion, student, patient, disease*)		21 (0.4)

Table 2: Grammatical relations in which *contagion* was found. The frequency of individual collocates is given for each, as well as of the construction overall. Relations are not mutually exclusive and only the most common relations are shown here. Note that *<disease>* denotes a specific disease.

3.2. A computational analysis of figurative context

The previous analysis found a number of features of contagion, based on the term's lexical and grammatical context in US congressional documents compared to a biomedical context. We now turn to an analysis of *contagion*'s conceptual behaviour. Here, we employ a semi-automated computational procedure to find likely figurative domains of *contagion*. These domains are known as *topic* and *vehicle* domains, that correspond to what the metaphor is being applied to (the topic) and by what concept it is applied (the vehicle). For example, in the statement "debt is a contagion", *debt* is the topic and *contagion* is the vehicle. The term *contagion* can also be used as a topic, as in "the contagion invaded the Eurozone" where *contagion* is characterized

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as an invader, using a war metaphor. The convention in metaphor research is to express such a metaphor as DEBT IS A CONTAGION, which is an instance of PROBLEMS ARE DISEASES. The following study explores the use of a computational method of extracting likely topic and vehicle concepts from contextualised instances of the term *contagion* in the congressional corpus described in Section 3.1.

3.2.1. Method

We developed a procedure that builds on two sources of linguistic information: WordNet (Miller, 1995) and the *Map of Root Analogies* (Goatly, 2011). Root analogies are the result of corpus linguistic analysis on how metaphors are used, borrowed, defined and identified in text. The product of this work is a set of commonly paired topic and vehicle concepts called *root analogies*. These analogies comprise and organise many of the linguistic metaphors commonly found in text. Using this database as a set of seed terminology, a sentence can be examined for pairs of words relating a metaphorical topic to a vehicle. This is achieved using WordNet to measure the distance between observed terms in a sentence and candidate concepts in the set of root analogies. Combined with some heuristics, such as predication and selectional preference, the system ranks the most likely root analogies (topic-vehicle pairs) for a given statement. Using a ranking over all possible interpretations allows a statement to instantiate more than one metaphor (where more than one scores high). Figure 1 shows an example of analysing the sentence "Sovereign debt is a contagion."
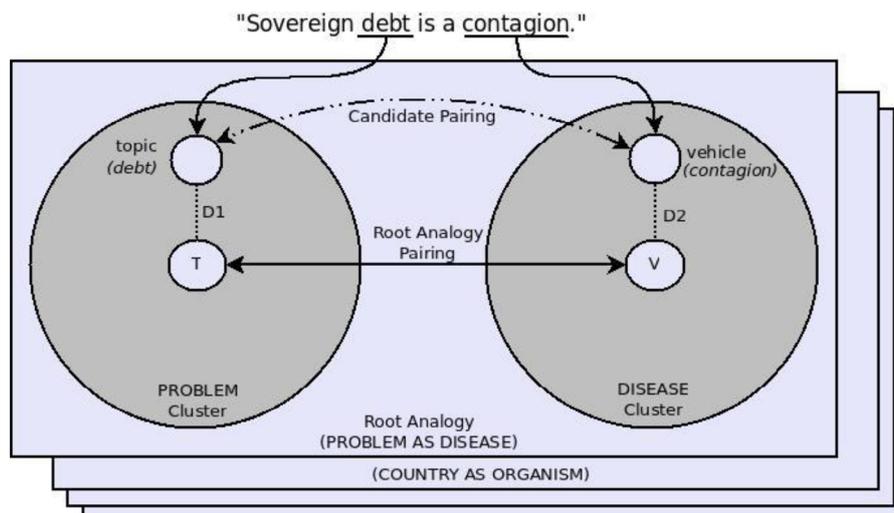
Figure 1: The metaphor extraction method uses a clustering approach to find pairs of words in a statement that are related to concepts in Goatly's root analogies, which are defined by a pair of topic-vehicle concepts (T and V). Likely interpretations, then, are those where the WordNet distances D1 and D2 are minimized.

For every candidate metaphor, a score from 0 to 1 is calculated, 1 being the best. This score is initially computed as the average of relatedness scores, D1 and D2 using WordNet[4]. After these scores are computed, a series of heuristic bonuses are applied to the score. These heuristics include a bonus if the observed word is synonymous in WordNet with its candidate term (for example *contagion* and DISEASE in Figure 1). Another bonus is applied if the observed vehicle predicates the topic in the statement (as is the case with *contagion* and *debt* in the example). Observing co-text markers signalling the use of linguistic metaphor like "metaphorically speaking" and "utterly" will also contribute a bonus to the final score. Lastly, a bonus is applied to account for so-called *selectional violations*, where a verb in an object-/subject-verb relation violates the typical class of verbs selected by that object (Wilks, 1978; Resnik, 1995). These heuristics do not help identify the "correct" metaphor, but serve to promote likely topic-vehicle pairs, based on features not inherent in the root analogies. Note that this method allows a statement to instantiate more than one metaphor, as in the sovereign debt example as an instance

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of both PROBLEM AS DISEASE and COUNTRY AS ORGANISM. The results consist of the top 20 highest scoring candidate metaphors for each sentence, and only if the scores were above 0.5. Using this method, we analysed the sentences in the US Congress documents containing the word *contagion*.

3.2.2. Results & discussion

The metaphor of contagion in finance is one of a disease that develops or is contracted and subsequently spreads. These aspects come directly from a biological conception of financial institutions, their problems that are contagious, and their relationships that enable their problems to spread. Table 3 shows some example metaphors identified in the congressional documents in which there are groups of common metaphors. Note the group of war-related metaphors as well as ones relating to ideas and emotions.

Sentence	Candidate metaphor	Topic term	Vehicle term	Score
[...] entering a critical phase as policy initiatives undertaken so far have not prevented systemic contagion.	DISEASE = INVASION	contagion	entering	0.88
[…] contagion may spread further in the very short term.	DISEASE = INVASION	contagion	spread	0.74
[…] a material impact in addressing market contagion.	DISEASE = WAR	contagion	impact	0.71
The contagion is driven primarily by what other securities are owned […]	DISEASE = WAR	contagion	need	0.60
[...] has come a new strain of global contagion […]	DISEASE = IDEA	contagion	strain	0.83
[…] as part of its operations can extend the contagion risk […]	DISEASE = IDEA	contagion	part	0.79
Banks have solvency regulation to protect depositors and to defend the banking system from contagion risk.	DISEASE = IDEA	contagion	regulation	0.71
Anticipating future sources of contagion is difficult […]	DISEASE = IDEA	contagion	source	0.70
[…] a real contagion risk to the financial system […]	DISEASE = IDEA	contagion	system	0.70
General investor panic is the final reason for contagion.	DISEASE = EMOTION	contagion	panic	0.78
The contagion is driven primarily by what other securities are owned […]	DISEASE = EMOTION	contagion	security	0.69
Financial contagion to the US from further deterioration […]	DISEASE = EMOTION	contagion	deterioration	0.59

Table 3: A sample of 12 analysed sentences from the congressional corpus, with their top-scoring candidate metaphors. The sentences are grouped according to the candidate metaphor's vehicle domain.

Table 4 shows the number of different metaphors in each sector of Goatly's *Map of Root Analogies*. The most prominent type relates *Human, Senses, & Society* to *Human / Animal, Body & Senses,* of which there were a total of 208. This type includes metaphors of institutions as people and animals as well as humans as animals. It is not surprising to find metaphors personifying organisations and using various sense and body categories, given the biological origins of the term *contagion*. Another common type of metaphor relates *Living Things & Substances* to *Human / Animal, Body & Senses*, which includes the personification of institutions, objects and phenomena. *Values, Qualities & Quantities* as *Activity & Movement* and *Values, Qualities, & Quantities* as *Space & Place* are also common pairings. These account for metaphors where physical and spatial changes are equated to movement and substances, such as liquids and gas. This kind of metaphor is generally common in economics (Charteris-Black & Ennis, 2001) reflecting the domain's focus on change – both abstract and quantitative. Moreover, metaphors of change are very common in everyday language, many of which structure the way we think about numerical values (Lakoff & Johnson, 1980). These metaphors are also personifying in finance, often used to construe situations and events as agents. Take, for example, a phrase from the congressional texts: "a disturbing level of contagion has already been evident around the hemisphere." This statement uses *contagion* as though it were a quantity, applying a metaphor of CHANGE IN QUANTIY IS CHANGE IN ELEVATION. A defining feature of the concept of contagion is that it spreads – making change-related metaphors particularly apt, given finance's

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focus on change. Other frequent types include metaphors with vehicles involving movement, velocity, scope and geography. These vehicle concepts are abundant throughout figurative language and may be an artifact of more general conventions. What is perhaps most surprising is the apparent lack of metaphors with a topic concept of *Thinking & communication*. This implies that metaphors of contagion tend not to be used as ideas, understanding, mind, knowledge, speech or text. It appears that *contagion*'s root domain of biology constrains its use in such a way that precludes these domains, which is a well-known phenomenon (Lakoff & Turner, 2009).

Topic: Vehicle:	Activity & Movement	Human, Senses, & Society	(Living) Things & Substances	Values, Qualities, & Quantities	Emotions, Experience, & Relationships	Thinking & Communication
Things & Substances	15 (10, 5)	39 (27, 12)	7 (5, 2)	0 (0, 0)	3 (2, 1)	9 (0, 9)
Human / Animal, Body, & Senses	13 (6, 7)	208 (93, 115)	155 (58, 97)	69 (8, 61)	12 (6, 6)	5 (2, 3)
Activity & Movement	41 (22, 21)	11 (2, 9)	7 (5, 2)	99 (41, 58)	0 (0, 0)	9 (0, 9)
Space & Place	16 (8, 8)	23 (21, 2)	46 (31, 15)	98 (67, 31)	45 (39, 6)	0 (0, 0)

Table 4: Types of metaphors found in the congressional corpus. The total number is given, and in parentheses is the number of times *contagion* was found as a topic term and the number of times as a vehicle term respectively. Though sectors on the map are mutually exclusive, sentences may instantiate more than one metaphor.

Examining use of *contagion* as a topic-term of the metaphor – the part of the metaphor being understood or described – effectively looks at metaphors *about* contagion, as opposed to contagion *as a metaphor*. In these metaphors, there is a high degree of uniformity in the topic concepts – mostly comprising DISEASE – an example of biology's association between contagion and disease. The contagion concept is also found in other topics such as *Values, Qualities, & Quantities* and *Emotions, Experience, & Relationships*. These imply that contagion is not always used as a disease, but can be measured and personified – features not found in the biological domain. Notice that when the topic is *Emotions, Experience, & Relationships,* contagion is predominantly equated to space and place. This shows that financial contagion, when personified, is something local and present, as opposed to moving or spreading (as it is when used in *Values, Qualities, & Quantities*). Apparently, when measuring and examining contagion in finance, writers tend to focus on its movements, but when it is personified, it is in some way immobile.

Instances where we found contagion as a vehicle of a metaphor illustrate the way that it can be used to make sense of other concepts. Vehicle concepts range from common domains such as SPACE, TIME and MOVEMENT to more specific ones like WAR, BUSINESS and OBSTACLE (see examples in Table 3). In terms of root analogies, *Human / Animal, Body, & Senses* is a common vehicle domain for contagion. Here, metaphors liken institutions (banks, markets, countries, etc.) to organisms, presumably with the assumption that they can contract a disease. These metaphors have been found previously in similar contexts (Greco, 2009). Earlier, we found that financial and political language seldom explains how, or even *that* contagion is something to be contracted. However, in this metaphor, the association is made clearer: likening institutions and countries to living beings (animals and human) makes sense of concepts or entities conceived of as contagions.

4. General discussion

The term *contagion* has been adopted rather prominently in finance, where it describes problems that spread between institutions. The term's features relating disease (a problem) and its transmission (movement or spread) are defining elements of *contagion*. However, financial language focuses more on contagion itself, rather than using it as a property the way biology and medicine do. This finding raises the question: what exactly is contagious in finance? Our intuition is that the contagious entities are financial institutions, like banks, markets and governments, but this is not evident in language. There is significantly more discussion given to

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the scope, type and movements of financial contagion. Unfortunately, without a more technical analysis of the concept, a viable definition remains elusive. Such analyses of financial contagion do exist (Bae et al., 2003 for example), but the congressional document analysed here (used to inform international policy) does not adequately define *contagion*.

When it comes to a definition of financial *contagion,* the term is still ambiguous. Our opinion is that, like many figurative concepts, it will become increasingly well-defined until the metaphor is lexicalised. However, until significant discussion in finance is given to what separates a contagion from another type of problem, its definition will remain unclear. One defining feature of the concept is movement, but this is not enough to propose that a contagion in finance is simply a moving problem. The concept is more complex, instantiating scopal, agent, type and causal features. The grammatical constructions where *contagion* occurs are considerably more diverse than in biology and medicine. In the end, it appears that the figurative notion of *contagion* is where the term derives its communicative and explanatory efficacy.

5. Concluding remarks

To sum up, *contagion*, has evolved over the last 700 years as a term in science, especially in biology and medicine, but also in social science. It is now used to characterize the severity of economic downturns, identify the mechanisms of financial trouble and to consider solutions. It is crucial to note how the use of this disease metaphor redefines how financial phenomena are conceptualized and understood in light of global economics. It is not clear what motivated the use of this term, however apt. Was it to signify the gravity of a situation or was it to divert attention from inherent problems in the financial system? The use of metaphorical terms such as *contagion* should be monitored and analysed to determine their effects on peoples' understanding of why and how ideas and judgments propagate through financial systems.

6. Acknowledgments

7. Notes

[1] Lakoff and Johnson's (1980) cognitive linguistic work refers to these metaphors as *conceptual metaphors*, whereas Goatly's (2011) corpus-based analysis calls them *root analogies*.

[2] http://www.scss.tcd.ie/~gerowa/contagion_corpora/; 1 October, 2013.

[3] We use Lin similarity in WordNet – an information theoretic metric that incorporates entries' semantic distance and their respective information overlap (Lin, 1998).

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List of high frequency business English terms: A didactic perspective on its practical applications

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Abstract. Global business environment requires a new approach to needs analysis in Business English courses for adult learners. With increasing demand for excellent business communicators from multinational corporations, language teachers and course-book writers are expected to offer more effective teaching materials. We can no longer rely on intuition; we need to identify business terms that are used with the highest frequency in authentic business communication. The aim of the paper is to present research into business terminology carried out for teaching purposes in tertiary education courses. A corpus-based study into word frequencies in authentic business texts was conducted and by means of a quantitative analysis it was possible to measure the frequencies of business terms excerpted from the corpus. These terms if presented in the form of a frequency list can be used by course-book authors and language teachers. First, the paper discusses the importance of terminology in English for Specific Purposes courses, next it demonstrates why corpus studies are of fundamental importance in materials development, and finally it presents the results of a study into business terms frequencies and recommends practical applications of its results. To further increase the effectiveness of teaching materials other elements of the language of business (the highest-frequency business lexis items, collocations, multi-word phrases, etc.) need to be identified as well.

Keywords. Business English, corpus studies, tertiary education, word list.

1. Introduction

Today, more than ever before, teaching English for Specific Purposes (ESP) to adult learners is a complex and demanding task. Students require fast, intensive and effective courses that will help them acquire good language competence needed for professional communication. In the case of business English the strain is huge since business students who are in their tertiary education know how heavily their future employability depends on their language and communication skills.

In the teaching/learning process the effectiveness results from three basic factors: the teacher, the learner and the teaching materials that are included in a syllabus. On the teacher's side we have qualifications, methodology, involvement and motivation, while on the student's side there are: intelligence, hard work, motivation, abilities and involvement. These are human factors and usually they cannot be changed easily and quickly. The third component in the teaching/learning process, i.e. teaching materials, gives the didactic input to students. For this input to be highly effective we need materials that teach the language that is most frequently used in typical real-life business situations.

The issue of high didactic value of input materials is very important because ESP courses in the future can be more effective than they are now if teaching materials are prepared based on a corpus instrument that will be presented in this paper. This instrument is quantitative, unbiased and can identify the kind of language that professionals use in business communication. It allows for a completely new approach to materials design. It helps create teaching materials that are based not on experience and intuition of course-book writers and not on a random selection of input in didactic texts but on the hard evidence of corpus studies.

The history of teaching ESP goes back to the 1960s. ESP courses appeared because there was

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a need for learning a foreign language for professional purposes. The importance of learners' needs has always been central to all ESP courses. Now ESP is used as an umbrella term including many wide branches such as English for technology, science, business, medicine, management, law, tourism, finance and others to English for vocational purposes with its narrow branches like e.g. English for secretaries or English for nurses.

'Learners' needs' is a broad term and includes two basic types of needs: immediate needs and future needs. In order to identify learners' future needs, it is necessary to analyze typical target situations in which the learners will find themselves in the future. They will have to communicate with other professionals in areas that are specific and that need to be analyzed by means of quantitative research methods used in corpus studies. They will also have to communicate about business matters with laymen, they will need to socialize, telephone, and network.

Today we still witness that demand for English for Specific Purposes continues to increase and expand throughout the world. Mobility of the global workforce increases. Emerging economies demand good language skills – English functions as Lingua Franca (ELF) in all types of professional communication. Multinational organizations recruit employees who have excellent linguistic competence coupled with nonlinguistic competences and skills – called 'global communicative competence'. To sum up, language skills and Communication for Specific Purposes (CSP) are essential for professionals of today and tomorrow.

That is why language teachers face new challenges and have to respond to changing learners' needs. They have to learn many new things including non-linguistic skills and fundamentals of subject matter (content knowledge in business, economics, management and finance). They also have to learn how to make use of corpus tools to evaluate teaching materials. They need to know what language elements to prioritize in the course. As Swan says, it is now becoming increasingly necessary to revise what we are teaching (2005).

2. Didactic relevance of teaching materials

The didactic relevance of teaching materials is crucial in the process of effective language learning/teaching. Materials that are didactically highly relevant can help acquire good language competence in a shorter period of time than those that are not. What makes teaching materials relevant? It is the selection and concentration of those language elements which are most frequently used in authentic professional business communication. Proper selection and concentration of input materials are likely to make the teaching/learning process faster and more effective. Students who will be exposed to such materials are likely to increase their intake and benefit the courses more.

Therefore it can be expected that the high didactic relevance of teaching materials will translate into better intake. Students will be able to concentrate on the language elements that will be most useful for them in the future. Knowing that they are learning the most useful language will probably give them an incentive to learn more intensively. It is likely to increases students' motivation and satisfaction with the course.

In ESP courses the role of professional terminology is paramount. It is specialist terminology which, more than any other language element, makes the language specific, professional or technical. Grammar and functional language are the same in ESP and in general English. Business specific terms make the language of business different from other varieties of English. Terms carry on specific meaning, they are clearly defined and they create grounds for common understanding of specialized knowledge among professionals.

Teaching/learning specialized terminology has always been a priority in ESP courses. However, in an attempt to increase the didactic relevance of teaching materials, it is necessary to know exactly which business terms will be most useful for students in the future. Here the answer is simple: students need to learn the most frequent specialized terms early in a course. They need to be exposed to relevant teaching materials prioritizing the most frequent business

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terms. Business terms, however, have to be coupled with high-frequency business lexis items, common collocations, multi-word phrases, standard business metaphors, acronyms, symbols and abbreviations. Teaching materials that are rich in the most common language elements will have a higher didactic relevance than those in which the selection of texts seems to be made, to a great extent, at random.

3. A corpus study into high frequency business terms conducted for teaching purposes

According to the definition given in *Longman Dictionary of Language Teaching and Applied Linguistics* "a corpus is a collection of materials that has been made for a particular purpose, such as a set of textbooks which are being analyzed and compared or a sample of sentences or utterances which are being analyzed for their linguistic features" (Richards and Schmidt 1996: 88).

One of the major considerations in developing teaching materials for effective ESP courses is to prioritize high frequency language elements. In an attempt to identify the most frequent business specific terms a well-balanced authentic business corpus consisting of more than 200,000 running words was examined by hand. A 'term' was defined as a word whose occurrence is limited to a particular field or domain and which has a specialized meaning (Richards and Schmidt 2002).

Corpus studies for teaching purposes usually follow at least five basic stages:

1. selection of texts and a balanced composition of a business corpus,
2. excerption of all business lexis items from the corpus and lemmatizing them,
3. identification of business terms,
4. establishing the criterion or criteria for inclusion,
5. organization of the selected high-frequency terms into a frequency list.

In this study business terms were first excerpted from the corpus of business texts and lemmatized. Then the occurrence of each business term (so called 'type') that had been identified in the corpus texts was counted. This way it was possible to determine how many times a given term was used (so called 'tokens') in the corpus. The terms ('types') that occurred at least five times in the corpus texts were selected. As a result of this procedure it was possible to make a list of the highest frequency business terms. It included slightly more than 1000 terms most frequently used in the corpus texts.

The high frequency list was organized according to the criterion of frequency in a descending order. It was also organized semantically depending on which area of business a given term referred to. These areas included economics, management, human resources, production, marketing, advertising and promotion, distribution, transport and logistics, trade and services to trade, and business law. There was also a group of terms collectively called 'general business terms' since they referred semantically to more than one area of business.

The most frequent terms on the list included for example company, business, customer, work, product, staff, market, money, and manager. This finding is most probably in line with the intuition and experience of most business English teachers. However, going down the list to lower frequency terms, it is clearly evident that the quantitative results could be much more informative, objective and discriminative than reliance solely on experience and intuition of language teachers. The same holds true for course-books writers who do not use of the results of corpus studies to find information about word frequencies. With lower frequency terms on the list the evidence of corpus studies is not always in line with what we expect and often reveals surprising facts about language use.

The high frequency list of business terms can have diverse practical applications. Teachers can use this list to produce or to choose more relevant supplementary materials for their students.

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They can also use it as a benchmark when designing tests and exams. Knowledge and proper use of specialized terminology is one of the core elements which is tested in tertiary education courses of ESP.

The high frequency business terminology list can also be used as a stand-alone teaching material for students. Thornbury says that core word lists help students to memorize core vocabulary items; students know that the words contained in the list are most important and need to be remembered. "Some researchers estimate that up to thirty words an hour can be learned this way" (Thornbury 2002: 33). "Research (…) suggests that vocabulary gains may be quite impressive (up to 2500 new words per year) if the learner (…) adapts a more specialized focus, for example, on academic vocabulary (Coxhead 2000), where up to a 10% leap in comprehension can be gained simply by learning small, carefully chosen academic word lists consisting of fewer than 1,000 common core words"(O'Keeffy, McCarthy, Carter 2007: 50).

Additionally, the highest frequency list can be used by the learner to monitor the progress made during the course. Such a self-evaluation instrument increases learner's autonomy and contributes to their greater involvement and motivation. It can, on the one hand, greatly enhance a sense of achievement and, on the other, be a stimulus to harder work.

Not all authors, however, are optimistic about using highest frequency lists. Looking at the problem of specialist vocabulary acquisition it cannot be expected that teachers introduce new language elements and have students use them instantly in communicative activities (Harmer 2003, Burgess & Head 2005). Such a claim would be unrealistic. According to Harmer, "where speaking is concerned, we should remember that language which students have only just met for the first time is often not available for instant use in spontaneous conversation; more exposure and practice is usually necessary before people can use new language fluently" (2003: 252).

McGrath is of the opinion that "vocabulary learning is not just about learning more words; it is also concerned with knowing more about the words you already know (e.g. how they relate to other words with a similar meaning" (2002: 101). This aspect of vocabulary teaching and learning is strongly correlated with productive language skills. Knowing how specialized terms function in ESP (e.g. how they collocate) helps to eliminate mistakes in productive language use. A study into concordances can be recommended as useful to both learners and teachers. Knowing the degree of language formality in which a given term can be used is also important in productive language use.

It takes time, effort and practice to master the key terms and business lexis items and be able to use them fluently and appropriately in professional communication. Therefore high concentration of the highest frequency terms needs to be combined with adequate language input given by the teacher. Much of what students learn in the course comes from teacher's language. Teacher's input is often easier to intake by learners. It is more condensed and students are exposed to it frequently. From this viewpoint, teachers who incorporate the highest frequency business terms into their repertoire and use them frequently in class will be in a position to enhance the terminology input they give to their students.

Tomlinson is of the opinion that "in order to acquire the ability to use the language effectively the learners need a lot of experience of the language being used in a variety of different ways for a variety of purposes. They need to be able to understand enough of this input to gain positive access to it and it needs to be meaningful to them" (2010: 87) Increased business terminology input is likely to make teaching materials more meaningful for ESP students.

To sum up, core business vocabulary lists, containing from 400 to 1000 terms can be a useful instrument in specialized vocabulary acquisition. Lessard-Clouston gives a recent (2000– 2013) literature review of word lists used for vocabulary learning and teaching and concludes saying that "word lists can guide both English teacher and student attention and efforts for both comprehension and production of English vocabulary". He also adds that "it seems high time to (re)consider what lists are available and creative ways to use them both in and out of

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ESL/EFL classes" (2013: 299). The two examples of Business Word Lists he gives include that by Konstantakis (2007, www.publius.us.es/en/node/177) including 560 words and that by Hsu (2011, www.asian-esp-journal.com/Dec-2011-wh.php) including 426 word families.

4. The need for further corpus studies

Identifying business terms from the corpus by hand was a time-consuming task, but a rewarding one since it gave an opportunity to reveal many interesting facts about how English is used in business texts. The aim of the corpus study was only to excerpt business terminology. However, when examining the texts by hand it was also possible to analyze:

- how business terms and business lexis items were used,

- how they collocated,

- in which phrases they appeared,

- in which form they appeared: full, abbreviated or as acronyms,

- how concentrated they were in a particular text,

- what their repetition rate was.

Additionally, it was possible to compare the concentration of business terminology in different corpus texts.

This method of corpus study can give a much deeper insight into language use. Research of the corpus by hand provides a unique opportunity for a qualitative assessment of all typical elements of business English and shows that further qualitative and quantitative corpus studies are needed into other important language elements, such as business lexis items, popular business collocations, multi-word phrases, standard business metaphors, language formulae, word sequences typical for written and spoken business communication, abbreviations, symbols and acronyms.

These elements have to be identified by means of corpus studies. Then the elements with the highest frequencies have to be incorporated into the learning/teaching practice. Similarly to the highest frequency business terms, they should also be prioritized by course-book writers and teachers. If a given language element appears only once in a text, the exposure is not intensive enough for the learner to memorize it. If the exposure to all most characteristic elements of language is high, learners will learn how to use them correctly and in what contexts.

There is a need for more corpus studies carried out for teaching purposes that would reveal a true picture of how language is used in typical business situations. The results of corpus studies can have many practical applications. For example, Coxhead's Academic Word List (2000) of about 1000 most frequent words has had many practical applications and proved to be a useful tool for authors of course-books teaching academic writing (e.g. McCarthy & O'Dell 2008) as well as for dictionary writers and dictionary users (e.g. Longman Dictionary of Contemporary English for Advanced Learners 2009).

There is also a need for periodic adjustments made to high frequency lists. Business English terminology changes over time – now, in the era of globalization and information and communication technology (ICT), probably faster than ever before. Therefore lists of core business English terms should be up-dated regularly. It is in the recent decades that the words like 'advertorial', 'ageism', 'apps', 'business angel', 'cafeteria plan', 'cold calling', 'deshopper', 'e-tailing', 'desk banking', 'hot desking', 'hybrid car', 'financial/fiscal cliff', 'financial supermarket', 'flagstore', 'flexitime', 'knowledge economy', 'mystery shopper', 'subprime mortgage', 'teleworking', 'tax haven' and 'toxic assets' have appeared.

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5. Conclusions and discussion

Nowadays teaching ESP has become more complex because of more complex students' needs. It is more challenging and demanding for teachers who have to learn how to teach more effectively. The shortest and quickest way to reach this goal is to evaluate the didactic value of teaching materials and to produce/choose those that offer the best quality of didactic input.

The most accurate and reliable way to improve the didactic relevance of teaching materials is by means of corpus studies into authentic language use. Evaluation carried out in a quantitative way provides evidence of what to prioritize in a course. It seems reasonable to assume that if course-book writers used this quantitative research instrument, language teachers would no longer feel that they need to prepare additional materials for their students. Most likely they would forget about supplementation of course-books.

If ESP practitioners want to address learners' needs in a more effective way, they have to revise all the determinants of the teaching/learning process. First of all, emphasis should be put on the didactic qualities of teaching materials. In order to channel learners' efforts and to make the courses more effective, ESP practitioners, both teachers and course-book writers, are recommended to make extensive use of the corpus instrument presented in the paper. Corpus evidence of language use is invaluable in making the right choices regarding teaching materials. The use of high frequency terms in a course-book guarantees that - using Coxhead's words (2000) - 'high incidence and high-utility' words will be prioritized.

To further increase the effectiveness of teaching materials other elements of the language of business (the highest-frequency business lexis items, popular collocations, compounds, multi-word phrases, standard business metaphors, abbreviations, etc.) need to be identified in corpus studies as well. It can be hoped that greater selectiveness in designing teaching materials, reliance on the results of corpus studies and quantitative analysis of the language input given in course-book texts can be beneficial for students.

In conclusion, course-book writers should produce texts that are didactically more relevant and student friendly. Teaching materials should always meet the learners' needs in terms of both quality and quantity. Using a course-book containing many key business terms and having intensive exposure to these terms helps to make the course more effective. The quality of business terms (measured in terms of their usefulness in business communication, i.e. prioritizing key, high frequency terms in didactic texts) needs to be coupled with sufficient quantity (i.e. exposure) that allows for memorization of each term.

Additionally, more and more students understand the importance of business and managerial skills, the role of intercultural skills and professional business writing. Teachers have to address these needs as well. As a result of changing learners' needs the teaching process is more complex now than it used to be ten or twenty years ago. Teachers are expected to teach more than just the language of business. In short business English courses it is difficult or impossible to provide students with all these sociolinguistic, pragmatic and intercultural skills.

With the increased challenges facing business English teachers, it is crucial that they can rely on high quality course-books containing a very strong didactic input. This way ESP teachers can be relieved of the burden of supplementing course-books and adapting teaching materials. Their time will be used more productively and effectively when they can concentrate on designing tasks and class activities rather than on supplementation and adaptation of teaching materials.

From the point of view of tertiary students, strong specialized ESP terminology input is likely to result in greater intake and better memorization of the core terms which they will need most when communicating with other professionals in typical business situations in the future.

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Language support for teachers and students in engineering via a lecture corpus interface

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Abstract. In regions where English is not the native language, a shift to English-medium university instruction poses great challenges. For students and teachers who are nonnative English speakers (NNS), a good understanding of the academic lecture framework, as well as the ability to fluently receive/produce the academic content in real time is required to comprehend/deliver lectures in English. Student problems range from vocabulary comprehension to understanding of the information flow, while instructors need to mark clearly their discourse to aid student understanding. In order to support these efforts, we developed OnCAL (the Online Corpus of Academic Lectures, http://www.oncal.sci.waseda.ac.jp/), a web interface that helps NNS in science and engineering learn about words and expressions that are important in academic lectures. As of August 1, 2013, the corpus consists of 432 transcripts of lectures delivered at MIT and Stanford University. Words and expressions were identified as meaningful for academic lecture presentation and comprehension. Frequently used word clusters were identified and examined for their functions in the lecture as a whole. These words/expressions are found to be useful for guiding students through the information flow of the lectures and, therefore, can be used by instructors to prepare effective lectures.

Keywords. English-medium instruction, science classroom discourse, science higher education.

1. Introduction

The ability to attract international students is one of the criteria for ranking universities on a global scale (Salmi, 2009), and English-medium instruction seems to be particularly effective (Bologna Process, 2010). The number of education programs offered through English has grown significantly in Europe during the period from 2002 to 2007 (Wächter and Maiworm, 2008). Also in Japan, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) recently launched the "Global 30" project to encourage universities to offer undergraduate and graduate programs taught completely in English to attract more international students (MEXT, 2009). However, a shift to English-medium instruction poses great challenges in a country like Japan where English is not the native language.

One of these challenges is the ability of students who are non-native speakers of English (NNS) to listen to and sufficiently understand lectures delivered in English, and another is the ability of instructors to deliver effective academic lectures in a second language. Both tasks require an understanding of the academic lecture framework, as well as the ability to fluently receive/ produce the academic content in real time. On the part of the students, even 'simple' problems

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related to vocabulary can be stumbling blocks (Arden-Close, 1993). Other issues encountered by students learning in a second language have also been the subject of much research in different countries. For example, Evans and Morrison (2011) showed that first-year students in Hong Kong needed to have strong motivation, work hard, use effective learning strategies, and receive support to be successful in the adapting to a second language environment. For students studying physics concepts, an investigation of the effects of the medium of instruction on student performance led Airey and Linder (2008, 2009) to recommend that teachers encourage students to ask questions during or after class, give out lecture materials in advance, and use more visual illustrations in addition to oral explanations. Tan and Lan (2011) reported on the challenges faced by teachers and students in Malaysia around 2003, when English became the medium of instruction. In the classroom, instructors especially need to know how to mark their discourse so that students will know what to listen for (Deroey, 2012). Issues in teaching practice arising after implementation of English-medium instruction in higher education in the Netherlands were reported by Klaasen and de Graaff (2001); they noticed that NNS teachers needed to develop effective teaching skills using English and at the same time be aware of the language difficulties that NNS students may have when learning through English. In Denmark, Thøgersen and Airey (2011), analyzing differences between speaking rates and rhetorical styles in lectures delivered in Danish and English, found that a very experienced, English-fluent Danish professor teaching the same content in the two languages, spoke more slowly and used a more formal style with English.

Spoken language is just one of the modes which appear in a science classroom (Kress et al. 2001), and the quality of instruction does not depend only on the spoken mode (Neumann et al. 2012). However, the role of spoken language in the science classroom is still very important (Gee 2004, Llinares et al. 2012, Smit and Dafouz 2012). Especially in the case of English-medium instruction in a NNS environment, improvement in the quality of instruction cannot be achieved without a careful look at the classroom spoken discourse. We hypothesized that analyzing a corpus of lectures in science and engineering could contribute to improving the quality of instruction by offering linguistic options that NNS teachers may be less aware of, and also foster the lecture comprehension skills of NNS students. This led us to develop OnCAL, the Online Corpus of Academic Lectures (Kunioshi et al. 2012, http://www.oncal.sci.waseda.ac.jp/), a web interface that allows NNS in science and engineering to find words and expressions that are important in academic lectures. In this work, we show some words and expressions that are used frequently by university lecturers in the United States to signal specific linguistic functions during the logical flow of lectures. This should help NNS instructors prepare lectures in English and NNS students improve their listening comprehension by being aware of how these words and expressions are used in academic lectures.

2. Method

2.1. Corpus building

Transcriptions of lectures on courses related to science and engineering were downloaded from MIT Opencourseware (MIT OCW, http://ocw.mit.edu/index.htm) and Stanford Engineering Everywhere (SEE, http://see.stanford.edu/). The Creative Commons License allows full use of both MIT OCW and SEE contents as long as these are "shared alike" (http://creativecommons.org/licenses/by-nc-sa/3.0/us/legalcode).

Some relevant data related to the transcriptions that were downloaded from MIT OCW and SEE, and uploaded to OnCAL, are shown in Table 1. Some light editing, which did not affect the accuracy of transcriptions as, for example, substituting special characters used in the transcriptions (changing single quotation marks into double quotation marks, or standardizing all comments by the transcriber into a form like "[APPLAUSE]"), was done for consistency along different texts and sources. Lists with detailed data related to each single lecture in each

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course are available online (http://www.oncal.sci.waseda.ac.jp/lists.aspx). As of August 1, 2013, the total number of lecture transcripts uploaded to OnCAL is 432; the corpus comprises 3.5 million words, which correspond to a total lecture time (obtained from the length of the video recordings) of 397 hours.

Course No.	Field	Source	Student year	Lecture time (hh:mm:ss)	No. of words
1	Chemistry	MIT	1st	27:23:08	185,290
2	Physics: Mechanics	MIT	1st	28:47:53	229,006
3	Physics: Electricity/Magnetism	MIT	1st	30:11:40	248,620
4	Biology	MIT	1st	28:37:51	240,627
5	Math: Calculus	MIT	1st	28:20:14	201,194
6	Math: Differential Equations	MIT	1st	25:24:31	189,548
7	Computer Science: Programming I	SEE	Undergrad	22:17:30	292,165
8	Computer Science: Programming II	SEE	Undergrad	21:02:25	278,003
9	Computer Science: Programming III	SEE	Undergrad	22:27:22	214,539
10	Math: Fourier Transform	SEE	Graduate	25:38:05	222,721
11	Math: Linear Dynamical Systems	SEE	Graduate	24:26:52	238,649
12	Math: Convex Optimization I	SEE	Graduate	24:00:06	233,967
13	Math: Convex Optimization II	SEE	Graduate	21:58:28	209,853
14	Artificial Intelligence (AI): Robotics	SEE	Graduate	18:48:00	131,745
15	AI: Natural Language Processing	SEE	Graduate	22:01:12	193,299
16	AI: Machine Learning	SEE	Graduate	25:09:12	188,100
Total				3,497,326	3,497,326

Table 1: List of courses downloaded from MIT OCW and SEE and uploaded to OnCAL (as of August 1, 2013)

Figure 1: Top page of OnCAL, as of August 1, 2013

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2.2. Interface design

The user interface was designed so that all functionalities can be "discovered" in an intuitive way, but at the same time we also assumed that users can learn the functions from trial and error. Figure 1 shows the homepage that is displayed when http://www.oncal.sci.waseda.ac.jp/ is accessed. The input box for the search string is clearly presented, the default conditions are displayed, and the search conditions can be changed easily. A search can be restricted to a particular field, or to a particular source, for example.

2.3. Linguistic functions

Linguistic functions were identified based on studies of classroom discourse (see, for example, Dalton-Puffer 2007) and an analysis of the corpus. Frequent 2-, 3-, and 4-grams related to each linguistic function were found using the "clusters" function of AntConc (Anthony, 2012) and counted carefully through the OnCAL interface. These expressions are registered in the OnCAL system, and displayed when the user chooses a specific function.

3. Results and discussion

When OnCAL was first released in 2010 and used in a workshop for content teachers, it had no linguistic functions. The users had to imagine words or expressions to search for, and ended up searching for technical terms such as "partial derivatives" or names of chemical compounds. Content NNS teachers did not consider the production of a logical flow in the classroom as a priority, and rather their main concern was on how to read a mathematical equation in English. We learned about their needs from their comments and the way they used OnCAL, and later decided to offer expressions for linking one technical concept to another, or for emphasizing the importance of a concept. We also wanted to offer the information that they explicitly asked for: how to read equations. Therefore, OnCAL was redesigned and can now display example sentences for a set of linguistic functions; the user can thus obtain example sentences for a specific function without having to imagine a word or expression in advance. For example, if the user chooses the linguistic function "Emphasizing" and press "Search", 153 sentences are displayed. Some of them are shown in Table 2.

	It makes sense	because if someone walks up to you
	It makes sense	both ways, but you can't drop the
	It makes sense	to do it once for the string, and
	It makes sense	to multiply t times the function
	It makes sense	to talk about the impulseresponse
in here basically because	it makes sense	that we group all the semaphores
hand side makes sense because	it makes sense	to multiply a distribution times a
Also	notice that the	peak value at resonance has not
I want you to also	notice that the	difference in energies between
You'll also	notice that the	gene-rich regions, here, are rich
That's something	you should remember	about planes.
If I use that label t2g	you should remember	the specific d-orbitals that contr
And, that's a formula that	you should remember	.
Not that	you should remember	this one by heart.
That is something that	you should remember	from your studies of chemical equi
A couple of things that	you should remember	.

Table 2: Some of the concordance lines displayed when function "Emphasizing" is chosen

"It makes sense", "notice that", and "you should remember" are expressions that were registered as frequent for the function "Emphasizing". All sentences that contain those expressions are displayed, but only some are shown in Table 2. From the sample sentences displayed, users should be able to gain clues for better searches.

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OnCAL thus offers sample sentences without requiring the input of a word or expression. However, one limitation of the current version of OnCAL is that if the user wants to input a string and restrict the search to a specific function, very few sentences are found. This is because only sentences containing the registered expressions are considered in the search. Another limitation is that content teachers may not see linguistic functions such as "class management", "projecting", or "recalling" as important. Thus, changing the functions to "pedagogical functions" such as "making links to previous content", which may include a portion of the current "recalling", may be more meaningful for NNS content teachers and elicit more insights. One of the expressions registered for "recalling" is "last time"; some example sentences are shown in Table 3. In the sentences shown in Table 3, the teacher recalls what was mentioned in the previous session as a device for linking what was mentioned before to what is being taught or will be taught in the present session. The link is made for showing differences, or recalling previous knowledge that is needed for developing new content.

```
              You recall that  last time we  were talking about the
              You recall that  last time we  were talking about the process of
                    I think  last time we  already decided that this guy
                And I think  last time we  started in the sense that we
                  Okay, well,  last time we  started looking at a little bit
   have a quality constraints,  last time we  derived in terms of a little bit of
              In other words,  last time we  were talking about the deviation
```

Table 3: Some of the concordance lines displayed when function "Recalling" is chosen

This is one example of pedagogical link-making, which "is concerned with the ways in which teachers and students make connections between ideas in the ongoing meaning-making interactions of classroom teaching and learning" (Scott et al., 2011). Because learning progressions and teaching sequences (see, for example, Duschl et al. 2011) are not possible without this type of link-making, such utterances should be used properly by teachers in the classroom to help students make connections in their meaning making process.

Searches through OnCAL can be restricted to a specific field, or even to a specific course to see, for example, how link-making utterances change from the first to subsequent lectures.

Other functionalities of OnCAL can be explored in many different ways, for many different purposes. Content teachers, content students, and applied linguists can hopefully obtain meaningful insights from this corpus.

4. Conclusions

Expressions frequently used by teachers (native speakers of English, mainly) in two universities in the United States were identified and linked to the linguistic functions they serve in the logical flow of lectures. Users of OnCAL, the Online Corpus of Academic Lectures, are now able to find these expressions by choosing a specific linguistic function with no need to think of words to search for. The expressions are expected to be useful for NNS teachers in their preparation of lectures in an English-medium program. These expressions can also help students comprehend lectures faster or in more depth. Applied linguists or language teachers may also find insights about the linguistic features of science and engineering lectures, or for supporting the language needs of NNS students learning through English.

Further work is in progress towards allowing users to combine string searches with specific linguistic functions and also to allow users to find expressions related to pedagogical functions.

5. Acknowledgements

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from the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) of Japan. The authors want also to express their gratitude to teachers and staff who delivered the lectures, recorded, transcribed, and uploaded the materials to MIT Opencourseware and Stanford Engineering Everywhere; their hard work and generosity in making such valuable data available to the world deserve recognition from all who benefit from the data.

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A corpus based e-dictionary of terminology as a body of knowledge

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Abstract. The paper describes the process of compiling an on-line terminological database within the TERMIS project. The compilation began from an LSP corpus (i.e. KoRP, a corpus of public relations texts) and involved automatic term recognition performed for single- and multi-word terms and the automatic extraction of lexical information from the corpus. Entries in the terminological database contain English translations of headwords, explanations, syntactic and collocational information, and corpus examples. The database comprises 2000 entries that also offer links to the KoRP corpus and Gigafida, a reference corpus of Slovene.

Keywords. Automatic term recognition, corpus terminography, extraction of lexical information, public relations.

1. The project

An applied research project titled *Terminology data banks as the bodies of knowledge: The model for the systematization of terminologies* (TERMIS, http://www.termis.fdv.uni-lj.si/) took place between 2011 and 2013. The aim of the project was the compilation of an online dictionary-like terminological database for the discipline of public relations, with the intention of making it a model (a) that could be adopted by other disciplines in Slovenia, and (b) that could enable the compilation of terminological databases in a relatively short amount of time.

2. The corpus

The basis of the project was KoRP, a corpus of public relations texts (Logar 2013). The corpus contains 1.8 million words and is a monolingual and synchronous specialised corpus. The corpus has been made freely accessible online (Fig. 1) almost immediately after its completion, i.e. in July 2007. It is lemmatised and morphosyntactically tagged (Grčar, Krek & Dobrovoljc 2012). The texts in the corpus were selected according to carefully designed criteria (Logar 2013: 46-91), which make it representative of a public relations field in Slovenia.

Figure 1: Part of concordance for the term *komunikator* (communicator) in the KoRP corpus

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3. The headword list

One of the basic analyses of every corpus includes producing a list of words, which represents a point of departure for the identification of lexical items to be included in a (terminological) dictionary or database. Thus, a word list for each word class (adjectives, verbs, nouns) was first extracted from the KoRP corpus and items on the lists were examined, considering their terminological nature or their usefulness for the headword lists of public relations terminological database. Our definition of a term, specifically a public relations term, was: "all words or phrases which have special reference, regardless of the subject field to which they belong, and which may also form part of the lexicon of another subject field must be considered to be part of the terminology of that subject field" (Pearson 1998: 13, 87). In the case of a relatively new field that is still defining its scope – which public relations in Slovenia definitely is – one should avoid taking the opposing stance, i.e. to consider as candidates only terms that originate from the field in question (if such origin could even be determined).

The analysis of word lists revealed two things:

- ○ that the list of adjectives is a good basis for identifying multi-word terms with relational adjectives as modifiers (that combined with the head of the phrase nearly always form a term in Slovene),

- ○ that word lists are not sufficient to identify verb and noun terms.

The problem encountered with verb and noun terms has been also mentioned by Pearson (1998) who saw as the only way to distinguish terms from general vocabulary by looking for them in the text, considering different characteristics of communication (author, addressee, text type etc.). As automatic term extraction already uses this approach by combining various statistical methods with linguistic knowledge on terms (for Slovene Vintar 1999; 2003a; 2003b; 2010), we have adopted this procedure for extracting candidate terms.

Using the LUIZ term extraction tool (http://lojze.lugos.si/cgitest/extract.cgi; Vintar 2010) we have extracted from the KoRP corpus:

- ○ single-word term candidates: nouns, verbs, adjectives, and adverbs;

- ○ multi-word term candidates: noun phrases and verb phrases.

Both single- and multi-word term candidates have been extracted using morphosyntactic patterns and term weights, calculated by comparing their frequencies in the KoRP corpus and in a general corpus, in our case FidaPLUS, a reference corpus of Slovene (http://www.fidaplus.net; Arhar Holdt & Gorjanc 2007) – as well as phraseological stability of the extracted terminological unit. We have identified 39 morphosyntactic patterns in total: 30 with a noun as a headword, 9 with a verb as a headword. The result of the extraction were lists with 47.007 multi-word units (excluding proper nouns) and 16.190 single-word units (excluding proper nouns).

The lists were carefully analysed and evaluated in order to determine the successfulness of the extraction method. When the top part of the list containing extracted term candidates was compared with the top parts of the noun and verb frequency lists in KoRP, we noticed only minor differences; however, they all favoured the lists of extracted terms. In other words, the lists with extracted terms offered better results. Our expectations were thus confirmed, so we decided to use only automatically extracted lists of term candidates for building our headword list. When creating a headword list each term candidate was carefully examined in its natural environment – the texts in the KoRP corpus – by a terminologist and experts in the field of public relations (see more in Logar Berginc, Vintar, Arhar Holdt 2012; Logar Berginc, Kosem 2013).

4. Entry contents

Entries in terminological dictionaries and databases contain different types of information. A detailed description of a microstructure of an entry in a normative explanatory terminological

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dictionary with foreign language equivalents is available in Košmrlj Levačič (2006: 72-84):

> Each term has its own entry, consisting of lemma and explanatory part. Terms are normally shown with accents. Then, grammar information and any homonyms are provided. If a term is an abbreviation, the full form is also provided. Explanatory part can have a label that shows a specific field or subfield to which the term belongs. Then, an explanation or definition is offered. After the definition, the entry can contain other elements, such as synonyms, hypernyms, hyponyms, polysemy and partitiveness. Foreign language equivalents with synonyms are provided at the end of the entry.

The TERMIS project focussed on the parts of an entry in a terminological dictionary or database that can be improved by using a corpus-based approach and state-of-the-art lexicographic tools. This includes mainly contextual information, and to a smaller extent definitions and norm.

4.1. Automatic extraction of lexical information and examples of use

Contextual information is rarely found in terminological dictionaries (even in online dictionaries, e.g. Caruso 2011), and two rubrics are relevant in this case: collocations and examples.

4.1.1. Collocations

"Collocations are lexically and/or pragmatically constrained recurrent cooccurrences of at least two lexical items which are in a direct syntactic relation with each other" (Heid & Gouws 2006: 980). This notion is well-known in English lexicography (e.g. Firth 1957; Halliday 1966; Church, Hanks 1990; Sinclair 1991; Krishnamurthy 2004). Teubert's (2005/1999: 106) refers to collocation by saying that corpus linguistics can contribute particularly to the area of lexico-grammar. The author (ibid.:113-114) says that corpus linguistics, offering statistical information on co-occurrence of words, can provide much better information on semantic cohesion between collocations, as opposed "classic" linguistics. Until large amounts of data could be processed systematically, there was no other possibility to describe co-occurrence of words other than using grammar rules. Key is thus in identification of repetitive segments of text, and the condition for this is a large enough corpus.

Including collocational information on headwords has become an integral element of contemporary corpus based lexicography (e.g. Čermák 2006), whereas terminography is yet to make this information a regular dictionary feature. The TERMIS project aimed to build a body of knowledge, not merely a dictionary, therefore we decided to include lexically and/or pragmatically constrained recurrent co-occurrences of terms, and terms and other lexemes.

Due to the fact that we collaborated on the TERMIS project, as well as the *Communication in Slovene* project (http://www.slovenscina.eu/projekt), where a lexical description of contemporary Slovene has been produced (http://www.slovenscina.eu/spletni-slovar/leksikalna-baza; Gantar, 2009; Gantar & Krek 2011), we used the same method in the TERMIS project for extracting lexical information (syntactic relations, collocations, and examples) for single and multi-word terms from the KoRP corpus. The method uses the Sketch Engine tool and its Word sketch function (http://www.sketchengine.co.uk/; Kilgarriff et al. 2004; Kilgarriff & Kosem 2012), so we had to prepare and upload the KoRP corpus in our local installation of the Sketch Engine. Some changes had to be made to the extraction algorithm and its constituent parts. For example, Sketch Grammar had to be slightly adapted (Krek 2012) and minor tweaks to API script (Application Programming Interface) had to be made (Kosem, Gantar & Krek 2012; Kilgarriff et al. 2008; Kosem, Husak & McCarthy 2011). In addition, a new DTD for the Termania dictionary portal (http://www.termania.net; Romih & Krek 2012) had to be prepared to enable importing of information in the database, as well as its visualisation.

Fig. 2 shows a partial word sketch for the term communicator with the grammatical structure

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"adjective + communicator", Fig. 3 shows its incorporation into the terminological database and its final visualization at the Termania web portal.

Figure 2: Partial word sketch for *komunikator* (communicator) in the KoRP corpus (the Sketch Engine)"[1] English translations of adjectives: *vladen* = government, *poslovni* = business, *akreditiran* = accredited, *profesionalen* = professional, *poklicen* = business, *britanski* = British, *glaven* = head, *organizacijski* = organizing, *dober* = good, *slovenski* = Slovene." on page 391

Figure 3: Partial entry of the term *komunikator* (communicator) at the Termania web portal

4.1.2. Examples

Examples are included in dictionaries to confirm the existence of the word, to assist with understanding of the definition, and to exemplify syntactic, collocational, textual and other characteristics of the word (Atkins, Rundell 2008: 452–455).

As shown in Fig. 3, examples have been included in public relations terminological database, in two parts of the entry:

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○ after the English translation of the headword (two examples) and

○ under each collocation (two examples for each collocate).

As Kilgarriff and Kosem (2012: 46) say: "Good dictionary examples are hard to find" – if one needs to search for them in a very large corpus, the procedure becomes even more difficult and time-consuming; for this reason, the GDEX (Good Dictionary Examples) tool has been developed, when preparing the online version of Macmillan English Dictionary.

GDEX ranks corpus examples according to their dictionary potential by using criteria such as sentence length, whole-sentence form, sentence complexity, presence/absence of rare words, presence of URLs etc., and is therefore a very useful function for lexicographers (Kilgarriff et al. 2008; Kosem, Husak, McCarthy 2011; Kosem, Gantar & Krek 2012). Using GDEX, we extracted good examples for almost all 2000 terms in the database.

In addition, users of the database can access two corpora (Fig. 4): the KoRP corpus and Gigafida, the reference corpus of Slovene (http://www.gigafida.net; Logar et al. 2013). In the former, the users can see all the concordance lines of a term, and a wider context (each paragraph has the information on the text source), and in the latter corpus the users can see how a term is used in general language (majority of public relations terms are found in general language; e.g. *javnost (public), odnos (relation), organizacija (organisation); sporočiti (to send a massage), komunicirati (to communicate), izvajati (to perform); blagovna znamka (brand), lokalna skupnost (local community), neprofitna organizacija (nonprofit organisation)*).

Figure 4: Partial entry of the term *komunikator* (communicator) at the Termania web portal; and links to the KoRP corpus and the Gigafida corpus

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5. Conclusions

"No matter how many features are used to summarize the data, the lexicographer still needs to critically review the summary" (Kilgarriff & Kosem 2012: 48). The editing of the extracted data mainly included redistribution and grouping of semantically related collocates, identification of compounds, and moving and reordering of corpus examples. In rare cases, we had to re-examine the word sketch of the term and manually select another example.

Language technologies can certainly speed up the building of terminological databases. By using Word sketches and GDEX, we almost totally avoided manual corpus analysis. After initial preparations it only took us three hours to obtain all the lexical information for almost all 2000 terms. The use of lexicographic tools, described in this paper, has not only facilitated a quicker building of terminological database for the discipline of public relations, but also made the analysis more objective.

Research shows that collocations strengthen (terminological) definition and/or facilitate its understandability (Bergenholtz, Tarp 1995: 117-126, 141-142) – together with examples they enable quicker understanding of the concept of the lexeme (term). This can undoubtedly increase the informative value and usability of any language resource; terminological resources should not be an exception. By adding considerably more information on the public relations terms, as opposed to merely providing a short definition and English translation, we have developed a body of knowledge for the field. In order to be able to evaluate how successful we were in the preparation of this terminographical product, which is quite different to what the users have been used to so far, we intend to carefully monitor its use and user feedback.

6. Acknowledgements

7. Notes

[1] English translations of adjectives: *vladen* = government, *poslovni* = business, *akreditiran* = accredited, *profesionalen* = professional, *poklicen* = business, *britanski* = British, *glaven* = head, *organizacijski* = organizing, *dober* = good, *slovenski* = Slovene.

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Philosophical roots of Russian terminology

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Abstract. The article deals with the description of the philosophical aspect of Russian terminology as a science. The description is concentrated on the creative work of Pavel Florensky, a well-known Russian philosopher, mathematician and theologian. Pavel Florensky was particularly interested in the ontology of term, and devoted much of his life to terminology study. It is important that he stressed the importance of researching terms with regard to the sphere of thinking. He believed that term belongs to knowledge as well as to cognition. He began his research with the etymology of the word *term*. In further researches, he tried to explain that the energy of human thinking was a sort of material, taking a form of an elementary particle that turns to be a term. A great talent and enormous erudition permitted Pavel Florensky to integrate in his conception ontologically different ideas – theology, symbolism, Cantianism, metaphysics and dialectics. He proved that interaction of philosophy and terminology was rather dialectical – they presupposed each other.

Keywords. Term, terminology, cognition, scientific speech, philosophy, concept, dialectics of term, symbolarium.

1. Introduction

Pavel Florensky (1882-1937) was one of the most important figures in Russian science of the beginning of the XX century (see: Florensky 1998). He was called "Russian Leonardo". In his image, you can actually find similarity with a great Master of the Epoch of the Renaissance. He was an encyclopaedist, a scientist, a philosopher, a theologian, a polyglot, with a good knowledge of Latin and Ancient Greek, and the majority of European languages, of all the Caucasian languages, of the Indian and Iranian languages. He was a many-sided man – he was a painter, a musician and a craftsman.

Pavel Florensky was born on January 21, 1882 in Yevlakh (now western Azerbaidjan). His mother Olga Saparova belonged to Tbilisi and Armenian nobility. After graduating from the Gymnasia in Tbilisi in 1899, Pavel Florensky entered the faculty of mathematics at Moscow State University. In 1904 he graduated from the faculty of mathematics of Moscow state University. However, being interested in mathematics, P,Florensky attended lectures in philosophy delivered by S.Trubetskoy, and studied independently the theory of arts. He was a friend of such philosophers as Sergei Bulgakov, Nickolai Berdyaev and Nickolai Lossky. Pavel Florensky is known for his famous work "The Pillar and Ground of the Truth", 1914. Later he proceeded his education in theology at the Clerical Academy in Sergiev Posad.

After the revolution, he tried to convince the new regime to preserve the church and the Lavra as a cultural heritage. He did much for that. After the Bolsheviks closed Troitse-Sergieva Lavra in 1918 and Sergievo-Posad Church in 1921, where Pavel Florensky was a priest, he moved to Moscow and worked there as a specialist in electricity at State Plan for Electrification of Russia.

Since 1927 Pavel Florensky was the editor of "Technological Encyclopedia" (Moscow, 1927-1934, volumes 1-23). He wrote 127 articles for the encyclopedia. On May 4, 1932, Pavel Florensky was appointed member of the Commission for Terminology Standardization. That was part of his life devoted to terminology. He wrote several works on theoretical issues of terminology ("Language Antinomy", 1918; "Term", 1917-1922; "The Magic of the Word", 1920; "The Structure of the Word", 1922; "Names", 1926). All these works were not published during his life.

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In 1933, he was accused of many political crimes and was sent for ten years of labour into the Soviet Gulags. In the words of Alexander Solzhenitsyn, Fr. Pavel Florensky was a remarkable person devoured by the Gulag. However, being imprisoned, he conducted his research in the production of iodine and agar out of the local seaweeds. Pavel Florensky was executed in Solovki in December 1937. The first publications of Pavel Florensky's works were only in the last two decades of the XX century. For the first time his article "Term" was published in "Issues of Linguistics", a famous Russian journal on theory of linguistics, in 1989.

2. Historical situation and terminology study

The aim of our research is to assess the significance of philosophical roots of Russian terminological School at the beginning of the XX century. The beginning of the twentieth century in Russia was called "The Silver Age" of culture and science. This period was characterized by a great interest in human insight. At that time in linguistics, philosophy began to dominate. This radical change involved the recasting of age-old issues, including terminology. The Silver Age precedes the European age of the 30th, focusing on what people do with language (Ludwig Wittgenstein, Bertrand Russell, Alfred Tarski, Rudolf Carnap, J.L.Austin, etc.). That was the period of creativity of great Russian philosophers – Pavel Florenskty, Sergei Bulgakov and Gustav Shpet. However, their ideas were widely discussed only after their death.

The roots of the philosophy in terminology go back to the great discoveries in science, such as the principle of complementarity of Niels Bohr, the "disintegration theory" of radioactivity of Ernst Rutherford, the general theory of relativity by Albert Einstein, etc. All those discoveries contribute into a further slacking of methodological axiomatic principles of science. It was a difficult period especially for physicists, since they have to give a definite answer, what takes place inside the atom.

It is clear that the epistemic situation in science of that time was directly connected with terminological issues. Following physics, philosophy put the question about the nature of term. Philosophers of that period concluded that it was necessary to part with the classical atomic theory and to search for a sufficient conception.

At the beginning of the XX century, a new model of the term has been thinking over, on a new philosophical basement linked with synergy of man's activity and the subject of the research. By analogy with the great discoveries in science, it was believed that the energy of human thinking took the form of an elementary particle, which was possible to be regarded as term. Russian philosophers Sergei Bulgakov, Pavel Florenskty, and Gustav Shpet were preoccupied with this philosophical idea. The questions that have most preoccupied Pavel Florensky are – What is a term? How is it linked with knowledge? How is it linked with thought? Pavel Florensky regarded these questions to be ontological ones and linked them with the major problems of terminology. Pavel Florensky did a thorough analysis of those questions to find out the presuppositions they rest on (Alekseeva 2012).

Being learned in natural sciences, as far as he was a mathematician by his first education, Pavel Florensky formulated a philosophical view on language and the language unit. The centre of his conception was the suggestion of the integral understanding of the world based on the contradictory. The sense of philosophy he saw in renewing everything, which became habitual and contradictory to the real life. He claims that there is no finite answer to any problem; being correlated with the reality, it stimulates a new question; however, this question will not be finite as well.

The most important ideas of Pavel Florensky referring to terminology are as follows: 1) antinomy and dialectics of term, 2) term and cognition, 3) term as a concept, 4) symbolarium as a type of terminological dictionary (Alekseeva 2009).

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3. Antinomy and dialectics of term

In his assumptions, he used Humboldtian line of argument. What was important for Pavel Florensky in Humboldt's conception about language? First, that language is dynamic. Following Humboldt, Pavel Florensky extended the idea that individual and social lines are integrated in language. Basing on it, Pavel Florensky did not adopt the idea of an artificially created language, Esperanto. He argued that any language has historical roots and its own history, which should not be disregarded.

P.Florensky's terminological activity was much influenced by his philosophical views of language. His interest in the philosophical issues of language led him to the investigation of a more general question about the antinomical nature of the term. Starting with his landmark article "The Antinomy of Language" in 1918, P.Florensky worked out his theory of language discrepancy.

Pavel Florensky regarded the antinomy of term by means of comparing it with the language unit. He believed that language is antinomical. It has two mutually exclusive perspectives, two different intentions. However, these two essential spirits are not simply two in number, but a couple, existing in the state of conjugation, or syzygy. By means of contradiction, they realize the language; without them, there is no language. None of them, since they are mutually cut out, produces language. Each of them separately, being divorced, becomes fruitless and stops producing any thought (Florensky 2013: 3). Being dissociated the language perishes. The language does not only possess these two fighting extremes, but is possible thanks to their fight, being a dynamic balance of movement and immobility, activity and objectness, impressionism and monumentality. Pavel Florensky attributed this quality to the term. The term must obtain both perspectives at a time; it must be flexible as well as steady, individual as well as universal, spontaneously born and at the same time historically given.

Pavel Florensky called the term a "cultivated word". It reveals two main qualities – firmness and flexibility. On one hand, a cultivated word must represent a very powerful thought, since it is kept in a historical treasure of humankind. The word is given to each individual mind as an already created thing, as an unshakable lighthouse in the comprehension of life (Florensky 2013: 4). On the other hand, it is created by man as the most individual word, corresponding to his individual demand at the given moment and on a very special occasion. Pavel Florensky considered the term to be extremely flexible, because it can transfer the most delicate shade of one's inner spirit.

P.Florensky defined term in many ways: as "the rest (stop) of a thought" (Florensky 1998: 199), as "a marker of the hypothesis" (ibid.: 210), as "a living mental effort" (ibid.: 218), as "a thought economizer" (ibid.: 210), as a concept (ibid.: 223) and as a text condenser.

4. Term and cognition

Pavel Florensky regarded this issue with the help of a metaphor. Metaphorically speaking, he compared a cognitive process to the process of thought climbing to the top of the mountain with several stops. At each stop, the thought produces a synthetic word, which Florensky compared to contemplation from the top of the mountain. Nevertheless, it would be a mistake to consider the limit of thought as a simple stop; otherwise, it would be associated with something unmovable. Even if it is a stop, it is a specific stop with inner movement, i.e. a moving stop or a stopping movement. In this sense, the progressiveness of the movement stops, but it does not mean that the movement itself stops, since a climber reaching the highest point of his way substitutes progression by turning around. There are really so wide horizons round him that it is worth contemplating them, a little turn to the right or left would give a climber a new picture from the height. The climber stops on his way; however, as far as the aim of the climbing is not a simple change of places, but the enriching of his experience, the stop at the top of the mountain, holding him by the far horizon outlook and the variety of pictures, is not only a break for relax during his

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climbing, but on the contrary, a break for intension and concentration of movement, if we regard the way from the functional perspective.

Pavel Florensky considered terms to be the most important language units to be used in the process of cognition. He built a hierarchy of language units:

1. *terms* come first, being words of words, a condensed source of ordinary words, an organized energy;

2. *proper names* come second, since they are types of individual structure of soul and body;

3. *ordinary words*, being condensers of will and attention (Florensky 1998: 256).

According to P.Florensky, the term must be correlated with a certain synthetic sentence that serves as its base ("folds in it") and therefore may substitute it (Florensky 1998: 208). P.Florensky used the terminological conceptions of L.W.Whevell. J.S.Mill, H.Poincare, who also believed that the term economized the thought. Florensky regarded a synthetic word or phrase, to be a technical phrase actually condenses in itself a certain compressed description of the reality, term, as we have previously found out, according to the language general feature should be correlated with a certain synthetic sentence, that can substitute the term and be condensed into it. The condensed sentence is term's definition; it is not "verbal", since it is impossible due to the absence of synthesis, but a real definition, which was called by W.Whewell "the Explication of Conceptions".

5. Term as a concept

The role of Pavel Florensky in defining the term is great. What we call now LSP he regarded as technical expressions, which have various properties. Depending on those properties, he distinguished the low level of expression (nomenclature) and the highest level of expression (terms proper).

Pavel Florensky equals a term with a technical name taken from any branch of knowledge and introduced by means of its definition, which is correlated with a certain existential statement, which implies the existence of a certain complex of characteristics integrated together by this definition (Florensky 2013: 9). In his terminological works, P.Florensky regarded the so called "technical expressions" (which may be substituted by a modern term "Language for Special Purposes"). In his view, these expressions may be subdivided into two classes according to their qualities: the low sphere of expressions, comprising nomenclature, and the high sphere of expressions including terminology proper:

○ The lowest level (nomenclature): the formula of the object under consideration; the lowest layer of those phrases, which within the Sciences of Classification, according to W.Whewell, is defined as a collection of names of all species, provides us with strictly cut off words taken from the general language;

○ The highest level (terms proper): a compressed description, a compressed formula of an object under research. Terminology is a tool by means of which the exact name is created. He regarded the nominative function of term in a specific way. According to Pavel Florensky, to name an object "means to produce a word, in which a common human thought would obtain, on the contrary, a lawful, or an obligatory for itself, link of an external form of expression and an internal form of content, or in other words, a newly created word should be a symbol" (Florensky 2013: 10). Viewing term Pavel Florensky comes close to W.Whwell and G.S.Mill. From them he took the idea of the interconvertability of term and law and evaluation of a great role of term in the history of science.

Pavel Florensky considered the nature of term. He started with the history of term. He was

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interested in what was the term from the etymological and semasiological points of view? He started from the following. Terminus, -i or termen, -inis or termo, -inis came from the root ter- which means "to step over", "to reach the point of destination, which is beyond". Thus, terminus is a border. Originally, it meant a materially marked border, that is why this word meant a "border post", a "border stone", any "border symbol". In the Greek language, as well as in philosophy, the word term was corresponded to οροϛ, as well to ὁρισμός from Ϝόρ Ϝos, which meant at he beginning "a furrow", and later – "a border". Like all ancient philosophical terms, the word "term" has an easily distinguished sacramental original meaning, which is not occasional in the philosophical sphere, but, as we constantly notice in the history of the philosophical terminology, is connected with its primary literal meaning, shaded by the following meanings, which impoverish and dissipate the native integral metaphysical nature of this word (Florensky 2013: 15). Later he spoke of the words term, terminus and ὄροϛ in philosophical and scientific meanings. In this sense, he associated the term with the limit of thought. Their meanings are associated with certain borders and landmarks of the thought. This non-limited possibility of the thought, which in the fluidity of the flow forces to perform various movements in the borderless area, at the same time, establishes hard edged borders, unmovable landmarks, which are sacramentally inviolable, since they are fixed symbolically by the thought itself, by means of a super-logical act and by an extra-individual will, which, although represented by an individual, are spiritually filled with definite absoluteness. In this situation consciousness is born. There is not anything easier than to ruin these borders and to remove the landmarks. It is the easiest physical action. However, for the experienced person they are taboo for the thought, since they are established by this thought exactly in this sense; the thought recognizes in it her own guard of property and fears to break the borders, since they are guarantees and conditions of her consciousness (Florensky 2013: 19). Thus, the term in the above sense is the border, by which our consciousness is self-defined and therefore self-comprehended. The way this border is fixed presupposes the way of the self-knowledge of the thought, i.e. the comprehension of the fact, the whole activity, which is done during the establishing the borders. This is the philosophical foundation of term as a unit of thought.

6. Symbolarium as a type of terminological dictionary

P.Florensky is well known for his ideas concerning a new type of dictionary – *Symbolarium*, linked with the ideographical way of expression of concepts. According to Pavel Florensky, the ideographical sign is either a written linear or a spacious sign that serves to express a certain idea (Florensky 1996). He found out that ideographical systems were used in ancient writing. Each sign meant a definite concept, abstract or concrete. Pavel Florensky believed that idiographic signs had special meanings and for this reason they could be viewed as the universal language of people. He expressed all these views in his article "Science as a Symbolic Description".

Pavel Florensky tried to solve the issue of ideographical representation of concepts. For this purpose, he worked out the project of a special type of dictionary, which he called Symbolarium. He defined the ideographical sign as a written flat or a spacious sign, which serves as the representative of an idea. He claimed that there was an integral proto-culture, where analogous images were used by all the people at all the times. He assumed that principles of ideographical writing did not disappear during the development of culture.

In his view, Symbolarium contains visual images, used as concepts; graphical images, like words, which serve to express certain ideas. Graphical images do not belong to individual interpretations, but are the heritage of all humankind.

He believed a visual image, like a word, expresses a certain idea. Graphical images lie beyond individual interpretations and are the heritage of all humankind.

The analysis of symbolic systems of various historical periods helped him to reveal the similarity between historically distant systems. P.Florensky believed that in the course of European culture development there arose several attempts to revise ideography within the frames of cultural

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creativity. These attempts are connected with Christian symbolism of the I-IV centuries A.D., as well as with the medieval period of ideographical system of writing in several scientific branches (alchemy, astrology, natural philosophy). These facts helped P.Florensky to prove that principles of symbolization were in the depths of human consciousness (Florensky 1996: 567).

Basing on this, he formulated the main purpose of the dictionary: to gather various visual images that were used in the function of signification of concepts. The tasks of the dictionary, in his view, were the following:

- ○ selection of visual images,

- ○ comparison of visual images in order to find out their actual meanings,

- ○ selection of quotations, which prove the meaning of each visual image.

Pavel Florensky started to work at the dictionary but unfortunately he was not able to finish it. He researched such symbolic signs as *a dot, a line, a cross, a pyramid, a disk, a circle, a sphere, a triangle*, etc. He assumed that these symbolic images formed the basement for more complex images or graphical signs. More than that, in his view, they represented antinomies that were always in the centre of his attention. He distributed the material in his dictionary according to a certain graphical alphabet, in other words, he started with a simple graphical image, *a dot*, and followed with more complicated images: *a line, a triangle, a square*, etc.

During his life P.Florensky was able to research only one symbol – *a dot*. He defines a dot as a minimum of spacious perception. He believes that a dot is the beginning of everything. Its meaning is dialectical: *it is* and at the same time *it is not* (Florensky 1996: 574). This dialectical quality of the dot converts it into a symbol with a certain potential. The most adequate definition of the dot from the historical point of view was given by the Pythagoreans: a dot is a unit having a certain location in space. This definition presupposes that any geometrical body is a multitude of dots. Pavel Florensky noticed that Euclidean geometry defined the dot in an opposite way, as nothing, a zero. Thus, a unit and a zero as meanings of the dot were limits. In this sense, the dot may be understood as a phenomenon that leads to these limits and therefore it obtains a dialectical meaning of existence and of non-existence. The dot is emptiness and fullness at the same time. However, in both cases it is regarded at the border of existence and non-existence, in other words, at the place of their transition. In this sense, the place of the dot is at the border of the two worlds: the real world and the imagery world. In this way, the symbolic meaning of the dot might be connected with two spheres: positive and negative interpretations of the dot. When the concept of dot is connected with life, it has a positive meaning. When it is connected with the construction of certain abstract schemes, the dot obtains a negative meaning, since they mean not real things. In this case the dot is associated with the centre of gravity, the centre of inertia, with the dots of various physical states – melting, evaporation, etc.

Having researched the main symbolic characteristics of the dot, Pavel Florensky defined symbol as a mental phenomenon that is integrated from the inside but not from the outside. In his view, a symbol is not an abstract concept or an artifact that we can define. It is impossible to state the borders of symbol's meaning. That would be more useful to study its functions since only the research of various cases of its usage will give the possibility to study it. Pavel Florensky believed that his new dictionary, *Symbolarium*, would partially fulfill this task. Although he argued, that it would be impossible to give any finite classification of symbols. All the classifications, in his view, will be flexible and not steady.

7. Contribution of Pavel Florensky into philosophy of term

One of his important suggestions was that concerning the role of terminology in science. According to Pavel Florensky, scientific speech, produced from the ordinary language, is the tool with the help of which we acquire the subject of knowledge. The aim of science is to build, or to arrange terminology. To build a proper term from the already known ordinary word means

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to solve the advanced issue. Science is a system of terms. Therefore, the life of terminology is the history of science, no matter what is it: natural sciences, law or mathematics. To study the history of science is to study the history of terminology, i.e. the history how intellect acquires the subject of science (Florensky 2013: 22).

His main contribution into philosophy of term was the proof of the analogy between the content of the discoveries in natural sciences and term's theory. He approached the subject of terminology and the term's space more close than other philosophers. He attributed the ideal character to the term. He made a significant difference between the methodologies in studying the term. On the one hand, one should divide the term into elements in order to examine it. On the other hand, it is necessary to observe term's dynamics and its movement within a human thought. He claimed that images in science were just our views about objects.

Pavel Florensky was able to proof that an ideal terminological space was determined by term's symbolic meaning. He did a scrupulous etymological analysis of the word term, which helped him to comprehend term's symbolic nature. He analysed the term in the meaning of "a border" in the historical aspect. The Term originated as the guard of the border, or of a sacred land, the guard of everything included within the guarded borders. In other words, initially the term was the guard of the border of culture, it structured life; the term established the inviolability of its principles; it did not permit any general mixture; it established rules of life and prepared life for further creative work. Thus, the term in the above sense is the border, by which our consciousness is self-defined and therefore self-comprehended. The way this border is fixed presupposes the way of the self-knowledge of the thought, i.e. the comprehension of the fact, the whole activity, which is done during the establishing the borders. The philosophical meaning of the term Pavel Florensky saw in the following. Being unmovable before the thought, the term is actually a living effort of the thought, which is the greatest discovery of its tension. The more stable is the term, the steadier it stands before the thought; in this case, the thought lives a long life. The history of the term is a series of creative efforts of thought, which is, like a nuclear, wraped into new exterior obstacles, in order to be concentrated and to obtain a new force and a new freedom.

8. Conclusions

1. The foundation of European terminology is usually linked with Eugene Wüster and the Soviet terminological school. We regard as the sources of Russian terminology the views of a well-known Russian philosopher, mathematician and theologian Pavel Florensky. We suggest that Pavel Florensky stood very close to the foundation of terminology as a science. At his time, the epistemic situation in science was directly bound by the terminological problem.

2. He stressed the importance of studying terms with regard to the sphere of thinking. He believed that term belongs to knowledge as well as to cognition. He proved that interaction of philosophy and term was dialectical – they presupposed each other. Philosophical aspect tends to focus on the integrity of the terminology study, based on the integrity of the reality.

3. What does philosophy bring to terminology? First, it enriches the subject of terminology by means of complicating the concept of term at the expense of its function as a mental unit. This causes a great actuality of cognitive research of the term. This perspective makes possible to regard the term as a means of modeling the reality, as a means of thinking about the phenomena that are beyond the frames of common knowledge. Term is a compressed (optimal) sign, which is provided with a great cognitive power.

4. Finally, philosophical view on terminology helps to understand that term belongs simultaneously to knowledge, as well as to cognition. Being the name of a concept, it structures a term system. Term systems fix knowledge and consequently aspire to

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stability. Within these systems concepts, represented by terms, become constructs, which stabilize the system of knowledge. While forming knowledge, terms provide interrelation of term system with the reality. Cognition, in its turn, presupposes the movement of knowledge, i.e. the dynamic work with concepts. Pavel Florensky claimed that cognition is correlated with the energy of cognition.

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Language standardization in e-commerce by applying terminology structured content management: Case Colombia

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Abstract. In recent years a number of developing countries are pushing forward to achieve a technological infrastructure capable of providing economic and social development without losing the focus on an effective international insertion. In part, this infrastructure considers the massive use of the New Information and Communication Technologies ICTs for Business which proposes as a key element for development. Moving in this direction Colombia as a developing country is implementing the use of these technologies in official procurement and licensing which brings several considerations in the way buyers, providers and users at large, deal with the language in describing, classifying and sharing Product Data regarding Information Management and commercial proposes conjunctly.

This paper aims to highlight the role of Terminology Work in terms of Structured Content Management in e-commerce and how terminology principles and resources (International Terminology Standards) can and should be implemented in a context of rapid technological and economic growth such as Colombia that is living a crucial change in the way of making business mostly with official entities.

Keywords. Internationalization, terminology, e-commerce.

1. Introduction

With over 46 million consumers, the third largest GDP in South America ($369,8 billion, 2012 est.) according to World Bank (Banco Mundial, 2012) and a robust free market economy, Colombia is a strong economic force in the region. Investor's confidence and commercial ties with major world economies are on the rise. Foreign direct investment (FDI) has increased fivefold and exports have increased fourfold since 2000, according to the Colombian Embassy in Washington. Colombia's economy has been growing steadily and faster than the Latin American average, and the nation is quickly becoming one of the world's leading emerging economies. In fact, some economists have included it in a new class of growing economies – CIVETS – Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa, which are characterized by their dynamism and high prospects for growth in the coming decades.

Colombia's outstanding economic stability has fostered foreign direct investment, and FDI inflows reached $15 billion in 2011 (Ministerio de Comercio Industria y Turismo, 2013). The United States continues to be the main source of FDI in Colombia. And according to the UNCTAD (UN Conference on Trade and Development) Colombia is the fifth country in the world attracting FDI (UNCTAD, 2013). According to (EMarketer, 2011), growth in the sector has been fueled by online marketing of airline tickets, technology, distributors of recognized brands, department stores, tickets, discount coupons and all sorts of goods and services, which in 2012 will account for more than $ 250 billion (around € 185.9 billion) in sales worldwide.

1.1. Trade and export growth

The strengthening of economic and commercial relations is a priority for Colombia's development. As a result, the country has implemented seven free trade agreements (FTAs) with 15 countries. By 2014, it is expected that the country will have implemented FTAs with 49 countries, gaining preferential access to 1.5 billion consumers worldwide. Colombia's exports have more than

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tripled since 2000 and exceeded $56 billion in 2012 being its main destination the United States (World Trade Organization, 2012).

The internationalization of the Colombian economy has already begun, back from the 90s, as an official economic policy and it has brought a number of changes in the domestic market. In terms of development, the entrepreneurial culture has also helped to foster innovation within firms and to reach international recognition. Important government organizations have been created to assist Colombian firms in their path to become international. At the same time the electronic market has suffered a very important growth representing an important part of today's economy in Colombia. One remarkable aspect from the growth and international projection of the Colombian Economy is the rapid electronic commerce as a way of internationalization not only for firms in the service sector but also for any kind of firm trying to venture its operations abroad. Estimates from the Colombian Chamber of Electronic Commerce in 2011 $ 1.2 billion (more than € 892 million) in goods and services were sold in the country via the Internet."

This scenario shows a very crucial momentum for the Colombian economy in order to consolidate as a real strong open market economy. In doing so Colombia's government is also innovating and facilitating the insertion of Colombian firms into the world of e-business

With the decision of the Colombian Government to implement a Virtual Unified Platform (Colombia Compra Eficiente, 2013) for the purchase of products and services a very important step has been taken towards the offering of products and services in the field of e-commerce by firms looking for contracts and business with the Colombian State. At the same time, it brings with it a number of interesting challenges. The first of these is the seeking of transparency in the purchase and contracting processes by the State, since through this platform these processes become traceable and seeking also to avoid public goods squandering, preventing of buying the same products with different prices. Another purpose of this strategy is to create unified policies as guidelines for buyers and suppliers in order to create a more efficient market. The Colombian Government buys and constantly engages in all the important aspects of the national life such as education and defense among others. On the other hand, this new business scenario demands a new paradigm for public and private companies in terms of commercial electronic communication, that is to say how communication is performed when businesses become virtual

More challenges are brought along with this initiative. For instance, the huge task of harmonizing these business processes in all official agencies and more specifically the task of standardizing products and services electronic data management that both suppliers and buyers (mainly the State in this case) should have to be embedded in a unified electronic market scheme, which is the aim of the Colombian Purchase Efficient Agency (Agencia de Contratación Pública, Colombia Compra Eficiente). With this Agency, the government made mandatory the use of this electronic tool, for any procurement process. In its website, the Agency provides training and informative documents, so companies interested in registering could appropriately classify their goods and services and understand all the undertaking procedure.

1.2. Product data management

To achieve the goal of increasing efficiency and transparency on the State purchases, a serious work is required in the way how suppliers and buyers in the electronic market managed, stored and offer their products and services data. In other words, agreements in how products and services are called, classified, and stored must be reached so these data management could be unified accordingly to rigorous and scientific principles that prevent errors in communication.

Not only agreements on prices, supply and demand must be addressed but also the interoperability between data of products must be ensured. If standardized systems of classification and description of products and services are implemented, electronic communication between suppliers and customers will be as needed, interoperable. This is a reality in which we are now engaged and to which we must adapt in the best way possible.

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This is an example on how firms can become more international implementing electronic marketing as a strategy of differentiation, by facilitating a broader access to markets all around the world. Since business opportunities can be found not only in domestic markets but also in a global horizon, this gives the opportunity for Colombian firms to become more profitable and more cost-efficient.

Product Data Management as a way of collection, storage, use and reuse of all kind of Data (terms, measurements, Product Description, Classification) related with the firms activities, concerns every aspect of a Product or service life cycle, it includes processes such as production, logistics (procurement, and distribution) marketing and sales, maintenance, among others. This Data Management provides information to all levels at the firm and when it is built according to unified principles it brings efficiency in communication and ensures a better performance in the commercial activities in which the firm is involved.

Outside the firm, the usage of standardized language and data in terms of Structured Content Management is a requirement in several schemas of e-commerce, such as:

- ○ Business to consumer
- ○ Business to Business
- ○ E-procurement

The application of terminology principles and a concept oriented scope when managing Product Data is an optimal way of assuring common conventions not only on language but also in a process of knowledge description.

Terminology principles can be the pattern to manage huge amount of information produced within a firm and for commercial purposes. This information collected and converted into data of every nature is the key to successfully reach a precise communication across firm's levels. Data storage and retrieval in the shape of Terminology Databases, Ontologies, or Thesauri, among others, is also crucial to have an information resource where all Product Data are collected and classified for its use in commercial communication. That is why to take advantage of the work done in International Terminology Standards is a key factor to achieve a solid ground to develop the Product Data Management required in the context describe in this paper.

2. International terminology standards

International standards are built upon the process of agreements among national delegations representing several sectors involved in a specific area to be standardized, *e.g.* suppliers, customers, government and other groups such as consumers. The agreements are made about specifications and criteria that are consistently applied in areas such as: classification of materials, manufacturing and product supply, testing and analysis, and last but not least, the agreements on terminology the products description ((Drame, 2006)). In other words, the value of the agreements on the terminology used in exchanging products and services is as important as the agreements themselves. At the same time, it is clear that international standardization is forged in the framework of the international economy, thus, it serves as a technical support for the economic sectors to be able to encounter agreed solutions to the differences between technical specifications, which is often a serious barrier for the product data interchange needed within the framework established by the Colombian Government and presented in this paper.

The foremost aim of International Terminology Standardization is: "[...] *to facilitate the exchange of goods and services through the elimination of technical barriers to trade*" (ISO/TC37, 2007). This foremost purpose left clear the commercial content interrelated to the actions of agreements that are around the international normative activity, which is developed in all organizations equally dedicated to designing standards in different specific areas. One of these areas is the development of terminology in order to make technical communication as accurate as possible and serving at the same time as the foundation for Product Data Management.

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Terminological standardization, understood as a set of methodological and technical standards for the development of language resources makes part of terminology management, which is the set of activities related to the design, classification, organization and presentation of language resources which is perfectly applicable in product data as well. A quite appropriate definition of this concept is given by Wright and Budin, who describe it as "any deliberate manipulation of terminological information" (Wright/Budin, 1997). This definition includes a very broad overview in matters of the terminological work approaches and potential resources that can be obtained from its management. Experts have divided terminology management into two approaches: the first one is the descriptive terminology management, and the second one is the prescriptive terminology management, where the terminological standardization belongs.

Taking these aspects of International Terminology Standardization it is clear that for the purpose of the Colombian initiative regarding business with the official sector, International Terminology Standards provide a set of common criteria in order to make commercial and official transaction through the internet in a more efficient way. For the development of business in the national context the application of International Terminology Standards is crucial and taking into account the direction given by the Colombian Government with the Virtual Unified Platform considerations in the way Product Data are managed must be turn to a consensus in the way these Data can become really unified.

According to the data shown in this brief attempt to call attention on the importance of terminology principles in the shape of International Standards, a national terminology policy can be achieved counting on the participation of all actors involved (Diaz Vasquez, 2010). This will lead to a truly consolidation of a better communication and information management favoring not only business at the national level but also fostering the internationalization of Colombian's Economy.

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Typology of structured content in eApplications: Under a content interoperability, quality and standardization perspective

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Abstract. There is a proliferation of content – not only in the Internet, but also at organization level, where it is called 'big data'. Therefore, enterprises struggle to integrate content resources or at least make them interoperable. In line with this process, content has to be analyzed and low-quality content to be identified in order to be deleted or improved. This refers also to a large degree to structured content – here content entities at the level of lexical semantics comprising linguistic and non-linguistic representations of concepts. Resources of structured content were seen as mainly comprising terminological data, lexicographical data and other kinds of concept representations, including a few non-verbal ones, such as visual symbols (e.g. public symbols).

But increasingly there may be also acoustic/audible symbols, haptic/tactile symbols, and others, which, in terminology management could occur as designations or even concept descriptions (such as non-verbal representations). This occurs first of all in the eApplications, such as eLearning, eBusiness, eHealth etc. More and more also non-linguistic entities of structured content are subject to the multilingual requirements of industry and the need for different modalities (e.g. graphical representations made 'readable' by blind people).

The investigation reveals various kinds of structured content at the level of lexical semantics which largely coincide with the characteristics of microcontent. From the semantic point of view and generic approach of terminology, microcontent entities could be data modeled based on one open-ended data model with a core structure (based on core data categories) covering more or less all kinds of the information objects called microcontent.

Keywords. Content interoperability, eLearning, eContent, structured content, unstructured content, microcontent, data modeling, metadata, standardization, terminology.

1. Need to clarify *eContent*

Content has acquired new meanings and dimensions under the conception of *eContent*. Originally derived from *electronic content eContent* is defined as *digital content* that can be transmitted over a computer network such as the Internet. (The Computer Language Company Inc. 1981-2013) This definition implies that eContent is developed in a computer-assisted way (which does not exclude conventional output) and that it must conform to a minimum of standards, in order to be transmissible over the Web. As the development of eContent is not a goal in itself (maybe except when applied in the fine arts), the purpose of the development, e.g. for an intended application, has to be added to the definition. Besides, in the course of increasingly using eContent as a commodity, commercial and legal aspects (*inter alia* digital rights) are becoming more and more important for the distribution and use of eContent. Pertinent technical standards as well as legal norms have been developed at international, regional and national levels – not to mention new methodology standards for accommodating new commercial and legal requirements in the data models for eContent. As nearly any traditional content can be digitized with technical means and turned into eContent, 'content' today stands for traditional content as well as modern digital content and is used as such in this contribution.

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Content applications, also called eApplications, are for instance eLearning, eBusiness, eHealth etc. Some of these eApplications came to use different terms for eContent, such as *intelligent content* in eBusiness or *learning material* in eLearning. While the number of different eApplications is increasing, the total amounts of content accessible on the Web are growing exponentially. Not least in order to save costs involved in content development and maintenance as well as the growing need for re-using and re-purposing available content, content increasingly has to be integrated, combined, further developed etc.. Therefore, standards are developed to ensure the integratability and interoperability of content – if possible – already at the time of its development.

In any case *content* is related to, but somehow also different from the traditional *wisdom chain* of information science consisting of: data → information → knowledge → wisdom. Content management from a theoretic-methodological point of view usually does not clearly distinguish between:

- Content and data – information – knowledge,

- Large and small objects/entities/items/units[1] of content (and the respective content resources),

- Structured and unstructured content.

This proves to be a big barrier against the integratability and interoperability of content increasingly required in more or less all eApplications.

As content is largely processed as 'digital objects' (or *digital materials* referring to any item that is available digitally) this contribution attempts to analyse content and related concepts ultimately aiming at establishing a typology of *structured content at the level of lexical semantics* in eLearning.

2. Content and related concepts

The *type of content* and where to take it from is one of the key issues that must be considered when dealing for instance with a project on a "*new methodology to design and develop learning objects (LO) based on terminological and corpus linguistic methods.*" However, the vast amount of information that can be found dealing with *content* and the diversity of areas that use the term indistinctly for more or less different concepts calls for some explanation before focusing on content entities.

More often than not the terms *data*, *information* and *content* are used interchangeably. Therefore, the relation between data – information – content will be tackled first.

Information processing theory argues that the physical world is made of information itself. Under this definition, *data* is either made up of or synonymous with physical information. Data as an abstract concept can be viewed as the lowest level of abstraction from which information and then knowledge are derived[2]. Generally speaking, information and data have much in common and are often used as synonyms in pertinent literature.

In ISO standards *data* is defined differently from the point of view of several technical committees:

- ISO 22005:2007 (3.1): recorded information;

- ISO 15784-3:2008 (3.7): information before it is interpreted;

- IEC60050-701,721:1992; ISO 16091:2002 (3.1.4): information represented in a manner suitable for automatic processing.

As for *information*, ISO standards again provide several definitions – however, without really providing a clear distinction:

- ISO/TS 25237:2008 (3.27): data set within a context of meaning;

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- ○ ISO 15531-43:2006 (3.1.15): facts, concepts, or instructions;
- ○ ISO 22320:2011 (3.9): data that are processed, organized and correlated to produce meaning.

From the user's perspective, information is all content, while from the computer programmer's perspective, it is all data. (Boiko 2004)

In the course of the development of the eApplications, *content* has become one of those fuzzy 'terms' that needs careful scrutiny in order not to add to the confusion. In international standards, content is among others defined as follows:

- ○ ISO/IEC 15938-5:2003 (3.3.2.9): a representation of the information contained in or related to multimedia data in a formalized manner suitable for interpretation by human means. Content refers to the data and the metadata;
- ○ ISO/IEC 24800-3:2010 (3.1.5): data and the associated metadata;
- ○ ISO 24531:2013 (4.11): <XML> all data between the start tag and end tag of an element.

This shows that content and metadata are closely related to each other.

ISO 9241-151:2008 defines *content* (in the meaning of web content referring to the web user interface) as "set of *content objects*" (item 3.4) and *content object* as "interactive or non-interactive object containing information represented by text, image, video, sound or other types of media" (item 3.5). Thus from a technical point of view content management takes content as *content objects* (i.e. content entities) in the form of:

- ○ Text (i.e. textual data, incl. all kinds of alpha-numeric data),
- ○ Sound (audio data),
- ○ Image (graphical data),
- ○ Video (incl. multimedia data).

Other types of media indicate that other modalities (defined in ISO 5492:2008, item 2.11, as "sensations mediated by any of the sensory systems, for example auditory, taste, olfaction, touch, somesthesis or visual modality") are not excluded. On the one hand, text, image and video (without sound) refer to the visual modality; on the other hand, different media today may occur in texts or documents, e.g. in electronic books. This reveals that *content* is not satisfactorily defined from the technical point of view. From the standpoint of semantics, the above definition is certainly insufficient.

Currently, *content management* has largely gained control of the term *content*. ISO/IEC/IEEE 26511:2011 (item 4.4, from a user documentation point of view) defines *content management* as "control of units of information with their metadata, to allow selective reuse in documents or information items with variable structures and formats". To this is added the "EXAMPLE: Content management for user documentation means management of help topics, explanations of concepts, troubleshooting procedures, compliance statements, and variables such as the names and host platforms of software products, with metadata tags that are applied to format output". It seems as if *information units* here resembles *content entities*, while "reuse in documents or information items" indicates that there are objects/ entities/items/units of higher complexity which also constitute content.

ISO/IEC 12785-1:2009 defines *content* (item 3.7, in the meaning of *LET content* from a learning technology and content packaging point of view) as "*logical unit* to represent usable (and reusable) information contained in or related to learning, education, and training (LET) data in a formalized manner suitable for interpretation by human means". It is further explained by the "EXAMPLE: In the instructional context, content can be web-based instructional materials".

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Thus, on the one hand a content entity is a logical unit representing *usable (and reusable) information* possibly contained in larger entities. On the other hand, "data in a formalized manner suitable for interpretation by human means" reveals that content "represents information" in a "manner suitable for interpretation by human means".

From the above it becomes clear that *data*, *information* and *content* convey different – though closely related – meanings although they are commonly used interchangeably. If "information is data that has been processed in such a way as to be meaningful to the person who receives it" (Riley 2012)[3], *content* becomes the 'representation of information meaningful to the person who receives it'. The latter comprises also the communication aspect – both in terms of technical as well as of human communication – which is particularly important in eLearning.

Today, there is a proliferation of content – not only in the Web at large, but also at organizations' level where it leads to high costs if it is not integrated in terms of *system integration* as well as *content integration*. When content is integrated in large organizations without being fully interoperable, it may become something called *big data*, which is not only just a great amount of content[4]. In this respect the Web can be considered as the biggest resource of *big data*.

If *content management* (according to ISO/IEC/IEEE 26511:2011, item 4.4) is "control of units of information with their metadata, to allow selective reuse in documents or information items with variable structures and formats", organizations are immediately faced with:

- The question of 'structure': structured content or unstructured content,
- The issue of complexity of content entities,
- The way of structuring information/content through data modeling using metadata.

3. Structured content

3.1. Structured content and unstructured content

Like data – information – content, *structured data – structured information – structured content* are commonly used interchangeably. This is due to the fact that "structure" is interpreted from different perspectives and in a variety of contexts. Thus content is approached and labeled as structured or unstructured according to the way it is interpreted or contextualized. This looks comparatively trivial when dealing with it in two well differentiated fields. However, difficulties emerge when ICT experts, marketing experts/consultants, webpage designers, content developers, editors and translators, among others, borrow and mix up terms without paying attention to the boundaries.

"Structured data can be defined as the data that resides in fixed fields within a record or file. Relational databases and spreadsheets are examples of structured data." (PC.COM s.a.) Apparently, unstructured data is the opposite, "data that does not reside in fixed locations. ... A huge amount of company information is unstructured text." (PC.COM s.a.) At the level of industry the need to cope with large amounts of *unstructured content* is evident:

> As companies increasingly create and store large amounts of information in electronic form, access to and the understanding of that information plays an important role in everyday business operations. However, much of the information that is generated and stored by companies is in unstructured form that is not suitable for either conventional relational database operations or for on-line analytical processing ("OLAP"). The unstructured content (e.g., e-mails, word processing documents, images, faxes, text files, Web pages, etc.) do not have any meaningful measure by which they can be compared with each other or combined to automatically communicate trends and/or abstract and diverse concepts ("attributes") that may be present across a number of types and/or categories of content.

> While some previous systems have attempted to classify and/or categorize unstructured content, such systems are generally rigid in nature and are not effective at measuring abstract and diverse concepts that span classifications and/or categories. Accordingly, there is a need for a measurement system or method for gleaning abstract and diverse concepts from unstructured content. (US Patent 7,249,312 B2 2007)

In the above, *unstructured content* largely refers to texts and other visual information/ representation. This – in certain content management systems (CMS) – is extended towards auditory information (such as music) as well as other modalities and the respective media. The content entities here may be small or large. The metadata applied mostly refer to formal aspects, i.e. to syntactic structuring rather than *semantic structuring*. (See also: OASIS[5] s.a.)

Increasingly content demands a more refined *content management* that goes beyond the above-mentioned definitions from a technical point of view and includes semantic approaches. There have been lots of initiatives and developments dealing with structured and unstructured content in different sectors in order to overcome obstacles in the management of content. With the emergence of the Semantic Web and the need to adapt content from the Social Web demands with respect to semantic structuring are growing:

> The heterogeneous support content that is available for software products needs to be transformed to a semantically richer form in order to allow reasoning, adaptation and personalisation across it. … Semantic Web technologies such as ontologies represent an opportunity to base such structuring and markup on. The different types of content can be broadly categorised by their amount of existing metadata and structure. Consequently, different types of usage can be drawn from each: whereas highly structured content (such as technical documentation) can be used to derive an ontology of the knowledge domain, unstructured content (such as forum posts) can be marked up in order to provide querying users with a larger range of problem solutions. (Cena et al 2010)

In today's information society there is no content which is totally unstructured. However, *unstructured content* is not structured *sufficiently* from the point of view of semantic structuring.

In this connection *intelligent content* in the business sector (called or addressed as structured content) is in most cases unstructured content more or less semantically marked up. "Intelligent Content is structurally rich and semantically aware, and is therefore automatically discoverable, reusable, reconfigurable and adaptable." (The Rockley Group, Inc. 2008) In relation to *intelligent content*, Boses, in his article "Intelligent Content, Meet Content Intelligence", takes position against the unsuitable terms *structured data* and *unstructured data* and how the following two options can contribute to overcome the 'problem of naming' these concepts: "add structure and semantics to the data (Intelligent Content), or improve the technologies that try to understand 'unstructured' data". "When Intelligent Content and Content Intelligence work together the result is that unstructured data is transformed into meaningful and useful information that can support automation". (Boses 2012)

The difference between *structured content* and *unstructured content* seems to be determined by their amount and types of metadata and structure. *Entities of structured content* can be characterized by a high degree of semantic structuring based on the necessary metadata covering also the *semantic context* required to understand the content entity in question. It is typically processed and managed in databases which – if designed for textual data – should be capable of handling more than one language. *Entities of unstructured content* usually contain several/ many entities of structured content in *co-text*. However, even if semantically tagged to a certain degree, unstructured content does not (maybe cannot or even should not) reveal the full semantic context of each entity of structured content contained. Besides, *unstructured content*, if textual, is usually monolingual (although it may contain elements in other languages).

There are many efforts and several approaches trying to overcome the gap between structured

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and unstructured content by combining their features by means of complex CMS with several modules of different functions in order to make different kinds of content interoperable.

3.2. High or low complexity of content objects/entities/units

The complexity of a content entity in general could be determined in terms of:

- ○ Quantity of information covered,
- ○ Granularity of metadata applied,
- ○ Amount of explicit context and co-text provided,
- ○ Number of content types comprised,
- ○ Degree of cognitive processing required, etc.

When developing short activities such as the ones found in podcasts, short videos, blog entries, tweets, short texts, wikis, eGames etc., complexity is usually viewed in terms of the information used. Here, the level of complexity in a way is governed by the length of the content, or reflects how much time and brain power is required for a person to understand and where appropriate do something, rather than simply memorise. (LIMBIC Learning Ltd. 2009, 2010)

Paradoxically, from the point of view of information processing:

> Highly structured knowledge bases permit a low degree of complexity to be managed by the information system. In contrast the degree of complexity is very high in weakly structured knowledge bases, whereby the user does only need a small amount of information about the meta-structure. (Zumpe & Esswein 2002)

Therefore, most approaches aiming at overcoming complexity due to weakly structured content are geared towards a higher degree of structuring while trying to avoid bothering the user with structure aspects at the user interface. This applies in fact to both, structured content and unstructured content.

Entities of structured content, as explained above, which are typically processed and managed in databases, are often called *microcontent* today. *Microcontent* "is a more general term indicating content that conveys one primary idea or concept, is accessible through a single definitive URL or permalink, and is appropriately written and formatted for presentation in email clients, web browsers, or on handheld devices as needed." (Dash 2002) *Microcontent entities* may comprise a day's weather forecast, the arrival and departure times for an airplane flight, an abstract from a long publication, or a single instant message. "Originally Jakob Nielsen (1998) referred to microcontent as small groups of words that can be skimmed by a person to get a clear idea of the content of a Web page. He included article headlines, page titles, subject lines and e-mail headings. Such phrases also may be taken out of context and displayed on a directory, search result page, bookmark list, etc."[6] The second use of the term (also called *microformats*[7]) extends toward other small information chunks that can stand alone or be used in a variety of contexts, including instant messages, blog posts, RSS feeds, and abstracts.

Comparing the approaches of terminological data modeling and the metadata-based approach of *microcontent/microformats* one can find many similarities. The whole Wikipedia is based on the *microformat approach* – however, not yet developed to a full *semantic* data modeling efficiency. When teaching a foreign language, lots of cultural, economic, historical, geographical and other facts – not to mention proper names – are important for learning a foreign language. This applies to common purpose language (CPL) as well as to special purpose languages (SPL – the object of teaching and research in LSP, language for specific purposes). It also applies to *linguistic entities* of structured content as well as to *non-linguistic entities*. Only fairly recently experts of terminology methodology started recognizing the importance of non-linguistic representations as well as of proper names in the field of specialized communication (in all its modalities – beyond spoken and written texts).

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Microcontent – if taking into account terminological and lexicographical data based on the metadata approach – seems to be the most appropriate term representing the concept of *entities of structured content at the level of lexical semantics*. Therefore, in this contribution 'microcontent' will be used from here onwards.

The complexity of microcontent does not depend on the amount of information, nor on the technical formats, but can be determined in terms of:

- ○ Granularity of semantics-oriented metadata,

- ○ Degree of multilinguality and multimodality,

- ○ Number of purposes for which they can be applied,

- ○ Existence of cross-references to other entities within the same database or across repositories,

- ○ Degree of cognitive processing required, etc.

From the above it becomes clear that the *complexity* of microcontent is governed by additional and partly substantially different criteria compared to those of unstructured content.

3.3. The way of structuring information/content through data modeling using metadata

Data modeling defines not just *data elements*[8], but also their structures and the relationships between them. Wikipedia[9] summarizes the information about data modeling as follows:

> *Data modeling* in software engineering is the process of creating a data model for an information system by applying formal data modeling methodologies and techniques. Its purpose is to manage data in a standard, consistent, predictable manner as a resource.
>
> The use of international data modeling standards is strongly recommended for all projects requiring a standard means of defining and analyzing data within an organization.
>
> Progressing from requirements to the actual database to be used for the information system the data requirements are initially recorded as a *conceptual data model* which is essentially a set of technology independent specifications about the data. The conceptual model is then translated into a *logical data model*, which documents structures of the data that can be implemented in databases. Implementation of one conceptual data model may require multiple logical data models. The last step in data modeling is transforming the logical data model to a *physical data model* that organizes the data into tables, and accounts for access, performance and storage details.

Several methodologies and techniques have been developed for the design of data models in order to guide data modelers in their work. However, two different people using the same methodology will often come up with very different results. Therefore, efforts are made to design generic data models which – being generalizations of conventional data models – "define standardized general relation types, together with the kinds of things that may be related by such a relation type." But as "the logical data structure of a database management system (DBMS), whether hierarchical, network, or relational, cannot totally satisfy the requirements for a conceptual definition of data ..., the need to define data from a conceptual view has led to the development of *semantic data modeling* techniques".[10]

State-of-the-art data modeling uses *metadata*, a term referring to 'data about data' which, however, is ambiguous, as it is used for two fundamentally different concepts:

- ○ Structural metadata is about the design and specification of data structures and is more properly called 'data about the containers of data';

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○ Descriptive metadata, on the other hand, is about individual instances of application data.

ISO/TC 37 chose the second approach and is using standardized *data categories*[11] based on the international standard ISO 12620:2009 in order to assure the data exchange on the basis of the user´s need while paving the way for creating, extracting, combining, or adding data. The data categories (also called ISOcats) are registered and maintained in the Data Category Registry (DCR).

> ISO 12620:2009 provides a framework for defining data categories compliant with the ISO/IEC 11179 family of standards. According to this model, each data category is assigned a unique administrative identifier, together with information on the status or decision-making process associated with the data category. In addition, data category specifications in the DCR contain linguistic descriptions, such as data category definitions, statements of associated value domains, and examples. Data category specifications can be associated with a variety of data element names and with language-specific versions of definitions, names, value domains and other attributes. (ISOcat s.a.)

Considering content from the perspective of standardization in ISO/TC 37 as a continuum between terminological and lexical resources (considered as structured content here) and corpus resources (considered as unstructured content) demands a clear understanding and recognition of the entities that are labeled under the category of 'structured content'. *Data categories* are used to semantically structure *microcontent entities* (first of all terminological and lexicographical data) while the DCR permits to make clear the semantics of whole *microcontent resources*. This approach suitably fits the *microcontent* concept where the data and information must be enriched with metadata. However, these metadata should better be established based on the data categories' approach of ISO/TC 37.

The clarification above aims at contributing to:

○ Promote re-usability of content – especially with respect to re-use in eLearning;

○ Enhance the role of academia in content creation;

○ Understand the value of distinguishing different types of content;

○ Find the basis to harmonize methodological approaches for learning objects (LO);

○ Bridge the gap between structured and unstructured content, such as:

• Identify elements of structured content in unstructured content,

• Insert/combine unstructured content in/with structured content,

• Include increasing users' needs (different user/learner strategies, impairments, etc.);

○ Use existing and emerging ICT technology in a more efficient way and based on sound methodologies;

○ Identify gaps in standardization.

By means of terminological data modeling, the functional requirements for multilinguality, multimodality, multimedia, multi-channel output can be fulfilled from the outset. It also permits the improved use of unstructured content for the extraction of items of structured content as well as the use items of structured content for 'controlling' the quality, re-usability and interoperability of unstructured content. Furthermore, the didactic component can be added in case of designing LOs at the level of lexical semantics.

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4. Microcontent

Microcontent (in the sense of *structured content at the level of lexical semantics*) indicates content that conveys one primary idea or concept. The kinds – not types – of objects/entities/items/units of this structured content may cover:

Designative concept representation	Descriptive concept representation	Possible extensions
(1) Terminological data:		
Linguistic designations:		
○ *terms* (incl. single-word and multi-word term) and similar, such a synonym, antonym, equivalent (in another language), etc. (written or spoken or other)	○ logic / partitive / other kind of determination[12] ○ logic / partitive / other kind of explanation ○ other kind of linguistic descriptive representation	○ *terminological phrasemes* (focused on LSP communication entities)
○ *abbreviated forms* (incl. initialisms, acronyms, clippings etc.) (written or spoken or other)		○ *terminological phrasemes* (comprising an abbreviated form)
○ *alphanumeric symbols* (written or spoken or other)		○ *terminological phrasemes* (comprising an alphanumeric symbol)
○ *proper names* (as kind of linguistic designation)		○ combinations of proper names with other linguistic designations
Non-linguistic designations:		
○ *graphical symbols* ○ *other visual symbols* (incl. bar code, etc.) ○ *non-visual non-linguistic symbols*	○ graphical {descriptive[13]} representation (more or less systemic) ○ other kind of non-verbal descriptive representation (more or less systemic)	○ combinations of linguistic and non-linguistic/non-verbal designations
		○ combinations of all kinds of designations
(2) Lexicographical data:		
○ *word* (or similar entities)	○ (different kinds of) explanations	
○ *collocations* (or similar entities)		○ *micro-utterances* (or similar entities)
○ *non-verbal communication entities*	○ (different kinds of) non-verbal explanatory representations	○ *entities of alternative and augmentative communication (AAC)*
○ *other kinds of entities of inter-human communication*		
		○ combinations of terminological and lexicographical data ○ combinations with entities of inter-human communication
(3) Controlled vocabularies:		
○ *thesaurus entries* ○ *classification entries* ○ *entries of other kinds of controlled vocabularies*	○ indications of conceptual structure as well as of domain/subject ○ other kinds of necessary indications	○ extensive mapping of controlled vocabularies
(4) Data categories (metadata):		
○ *names of data categories*	○ formal/coded description of data categories ○ additional (incl. non-formal/coded) elements of description	○ networking of repositories / registries of metadata and data categories
(5) Information of standardized and non-standardized coding systems for proper names and other entities in eApplications	○ coded entities (such as language codes, product classification codes, currency codes, etc.)	○ rules for the combination of these in various applications

Under a generic approach based on terminological data modeling methods all the above may be varieties of one data model for microcontent. If the development shows that entities like a day's weather forecast, the arrival and departure times for an airplane flight, an abstract from a long publication, instant messages, article headlines, page titles, subject lines, e-mail headings, blog posts, RSS feeds, etc. are becoming distinct types of microcontent, a typology can be established. If not the different kinds of microcontent could be dealt with in the form of a taxonomy, for instance.

Not to forget: complexity in the form of a higher granularity in terms of more (incl. more different kinds of) data categories in fact reduces complexity from the point of view of software engineering; a higher granularity of data categories does not necessarily indicate a higher degree of complexity.

5. Conclusions and outlook

Microcontent (in the sense of structured content at the level of lexical semantics) and unstructured content definitely are two types of content. Content management further distinguishes text, sound, image and video as content types and applies this also to *micrcontent entities* referring to units of reusable metadata that permits to create new 'information products'. Furthermore, a *content type* comprises a collection of elements; for classification of content, content types are chunks of meaningful information which are potentially content types but depend on business goals and needs of the users. Authors do not create content types; they create content items from content types; for example: strawberry is a content item that can be labeled under content type fruit, which in turn possesses content elements such as sweet and color. (Gibbon s.a.)

From the semantic point of view of terminologists this distinction of content types applied to microcontent is questioned. Inter-human communication occurs in the form of spoken, written and other kinds of communication. Under this perspective the different kinds of microcontent (and their different levels as well as combinations) can be classified in the form of a facetted classification scheme or taxonomy. From the point of view of a generic approach to the data modeling of structured content with the aim to achieve

- ○ A generic data model (as described above),
- ○ A semantic data model (possibly taking into account, but not necessarily following in all detail the existing approaches),

microcontent entities could be modeled based on one open-ended data model with a core structure (based on core data categories) and many variants depending on:

- ○ The degree of multilinguality and multimodality/multimedia,
- ○ The eApplication where used (at different level according to the target groups etc.).

Even information on sources (e.g. bibliographic and related data) can be part of this data model.

However, it is not impossible that certain kinds of *micocontent* on the Web – as mentioned above - may develop into content types in the future.

There two more push-factors for higher granularity in the direction of harmonized data modeling of microcontent:

- (1) Legal issues in connection with copyright and other originators' rights are increasingly requiring even for minute pieces of information (even down to parts of fields)

- ○ The need to reliably identify authorship (e.g. for the sake of allotting micro-credits);
- ○ Securing the authenticity of entities of structured content (or parts thereof);
- ○ Traceability of microcontent entities (or parts thereof) for the sake of assigning

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rights and use conditions to re-use or re-purpose pieces of content in order to secure exploitation rights (whether asking for or waving remunerations), etc.

(2) The Recommendation on software and content development principles 2010 defines as basic requirements for the development of fundamental methodology standards concerning semantic interoperability the fitness for:

- ○ Multilinguality (covering also cultural diversity),
- ○ Multimodality and multimedia,
- ○ eInclusion and eAccessibility,
- ○ Multi-channel presentations,

which have to be considered at the earliest stage of:

- ○ The software design process, and
- ○ Data modeling (including the definition of metadata),

and hereafter throughout all the iterative development cycles. (MoU/MG 2012)

The above Recommendation inevitably requires a higher degree of structural complexity, which has to be coped with by a higher degree of data granularity of the data model. It may require additional URIs for the different language parts of the individual entries of structured content. Ultimately the time-honoured principle of *term autonomy* will have to be extended towards *representation autonomy* in the field of terminology management. This is anyhow necessary when re-purposing entities of structured content for instance for eLearning purposes. Because of the paramount phenomena of quasi-equivalence of concepts between languages links between parts of entries or even certain fields in a given entry to other entries (or parts thereof) will be necessary. As experienced in localization (such as in the field of technical documentation), the above even applies to non-linguistic representations due to cultural diversity factors.

6. Notes

[1] Data/information *objects, entities, items* or units are used interchangeably in experts discourse. Therefore, in this contribution 'entity' is used at the conceptual level, while 'entry' is used for the object/entity/item/unit in the data model.

[2] See for instance the *DIKW Pyramid* (also known variously as the 'DIKW Hierarchy', 'Wisdom Hierarchy', the 'Knowledge Hierarchy', the 'Information Hierarchy', or the 'Knowledge Pyramid'), which refers loosely to a class of models for representing purported structural and/or functional relationships between *d*ata, *i*nformation, *k*nowledge, and *w*isdom. "Typically information is defined in terms of data, knowledge in terms of information, and wisdom in terms of knowledge". (Rowley, 2007)

[3] "Note the two words highlighted in red – processed and meaningful. It is not enough for data simply to be processed. It has to be of use to someone – otherwise why bother?!" (Riley 2012)

[4] Webopedia (s.a.) refers to big data as "a buzzword, or catch-phrase, used to describe a massive volume of both structured and unstructured data that is so large that it is difficult to process using traditional database and software techniques"

[5] Advancing Open Standards for the Information Society

[6] See http://en.wikipedia.org/wiki/Microcontent#cite_note-1

[7] See http://en.wikipedia.org/wiki/Microformat

[8] Data element (in metadata standards according to ISO/IEC 11179-1:2004, item 3.3.8): unit of data for which the definition, identification, representation and value domain are specified by means of a set of attributes

[9] Wikipedia. Retrieved 2013-02-07: http://en.wikipedia.org/wiki/Data_modeling

[10] Wikipedia. Retrieved 2013-02-07: http://en.wikipedia.org/wiki/Data_modeling

[11] Data category (acc. to ISO 12620:2009, item 3.1.3): result of the specification of a given data field

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[12] *Determination* according to Webster: in logic, the act of defining a notion [=concept] by adding differentia [=characteristics], and thus rendering it more definite. This corresponds also to similar use in physics <determination of nitrogen in the atmosphere> and in natural history <determination [=classification] determining the species of minerals, plants etc. to which they belong>)

[13] *Descriptive* with respect to non-verbal representations means that the representation indicates characteristics of the concept in question

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Terminology meets the multilingual Semantic Web: A semiotic comparison of ontologies and terminologies

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Abstract. To pave the way towards a multilingual Semantic Web its resources such as ontologies need to be expressed in natural language in addition to logic. Ontologies are primarily designed for machine-readability of knowledge and often lack natural language content required for human users. Terminology provides an established model to accommodate specialized language and has the potential to bridge this gap towards multilingual Semantic Web resources. In addition, the technological infrastructure and tool support for ontologies have the potential of boosting terminology formalisms. To lay the ground for their integration a thorough comparison and multidisciplinary understanding of ontologies and terminologies is needed. This paper elaborates on their commonalities and divergences from a semiotic perspective by analyzing their main syntactic, semantic, and pragmatic aspects. Subsequently, results of this analysis are juxtaposed and implications for the ontology-terminology integration are presented.

Keywords. Terminology, ontology, semiotics, comparison, terms, ontology labels, multilinguality.

1. Introduction

The Semantic Web (SW) relies on ontologies and provides a fundamental body of knowledge that enables informed decision-making. As the main design goal of an ontology is to enable reasoning (Krötzsch et al. 2012), it lacks refined means of representing natural languages (Gracia 2012). This ability to represent knowledge irrespective of a natural language (NL) provides one of the greatest potentials for bridging communication barriers due to linguistic differences. An integration of terminology and ontology helps explore this potential. To provide the foundation for their integration, this paper undertakes a profound analysis of the similarities and differences of terminology and ontology from a semiotic perspective.

To provide clarity about the nature of both resources and to profit from their advantages requires more than a mere syntactic comparison and conversion. Semiotics is the study of signs and turned out to be the most adequate perspective for the comparison at hand. Semiotics provides guidelines for defining the representation and use of signs, but more importantly for translating from one sign pattern intended for one purpose to a sign pattern intended for another purpose (Sowa 2000: 55). The three main branches of semiotics – syntax, semantics, and pragmatics – provide the major categories from which comparison criteria are derived.

To provide a clear reference point and draw from community consensus, the major definitions of each resource as well as their syntactic, semantic, and pragmatic aspects are taken from standards (International Standards Organization) and specifications (World Wide Web Consortium). Although both standards provide visualizations, they differ in their use of UML and in granularity. This is why a data model for each resource has been developed in UML. The goal of this paper is to provide a very clear understanding of the nature of each resource as well as their differences and to produce requirements for a possible integration of both.

2. Comparison method

A deep understanding of two different data models and their functions presupposes a well-defined comparison method and analysis of both. The sheer number of varying approaches to defining both terminology and ontology render a clear point of reference for each resource inevitable,

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which here are standards (ISO) and recommendations (W3C). They reflect community consensus and best practices, being developed and curated by leading representatives of the respective field, and provide the input to the semiotic comparison criteria and modeling method.

2.1. Comparison criteria

Semiotics is the study of signs, i.e., it studies the structure and meaning of language including its non-linguistic sign system. Terminologies and ontologies take signs as a starting point and use them for organizing and representing knowledge. Given that both thus are based on semiotics, their semiotic comparison comes natural. With its three main branches – syntax, semantics, and pragmatics – semiotics provides guidelines for defining sign representation, organization, and use. Syntax regards the form or representation of signs and relates sign representations to one another. Semantics investigates the meaning of a concept and its determination (intension), its relation to physical or abstract objects (reference), and which objects can be instantiated by the concept (extension). In addition, semantics frequently investigates the truth value of statements and propositions. Pragmatics is mostly interested in what the representation effects in the interpreter – how meaning depends on context and use. From this semiotic perspective, the following main criteria form the basis for the present comparison method.

1. Syntax

   a. mechanisms for grouping objects into units and associating them

   b. permissible content of these units

   c. operations permissible on these units

2. Semantics

   a. object the units of knowledge/thought refer to

   b. mechanisms for expressing and interpreting meaning

   c. purpose of modeling intended meaning

3. Pragmatics

   a. usage of resource

   b. context of concept use/interpretation

   c. application scenarios

2.2. Reference definitions

The main organization fostering the advancement of Semantic Web technologies, i.e., also ontologies, is the World Wide Web Consortium (W3C). Its Web Ontology Language (OWL) enjoys great popularity and experienced a thorough revision in form of a recently published second version OWL 2, which will be used to analyze ontologies herein. The "Structural Specification and Functional-Style Syntax" (W3C 2012) represents the main source for creating a data model and conducting the syntactic analysis. As regards semantics, both versions of OWL are based on description logic – a fragment of first order logic. "Direct Semantics" (W3C 2012) and related publications specify its semantic aspects. Its actual usage will be taken from W3C documentation for users.

Concept-centered terminologies are standardized by the International Standardization Organization (ISO) in terms of theory and application (ISO 1087:2000), principles and methods (ISO 704:2009), representation and exchange (TBX - ISO 30042:2008). At the core of these various standards is a detailed analysis of a terminological metamodel in the Terminological Markup Framework (TMF - ISO 16642:2003), particularly targeted towards the re-use and exchange of terminological data. Combined with ISO data categories (ISO 12620:2009), the

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TMF makes up the core of the Term Base eXchange (TBX) format – a language family for terminology exchange.

2.3. Modeling method

Visualizing syntactic elements of both resources by means of a graphical modeling language strongly supports and facilitates the human readability of their comparison. The Unified Modeling Language (UML) has become the de-facto standard for a graphical representation of computer artifacts. Both organizations, W3C and ISO, utilize UML to visualize their data models, but differently in terms of cardinality, associations, concept and constraint modeling, and designations. W3C diagrams mostly use cardinality restrictions at the end of directed associations. The TMF meta-model indicates numbers at both ends of the associations, TBX diagrams use a highly complicated method of associating this information to concepts rather than relations, and other terminology standards do no use cardinality at all. The use of associations is equally inconsistent across ISO documents from specific diagram types, e.g. tree diagrams for generic relations, to undirected associations. OWL always uses directed associations or generalizations to connect elements, which are modeled as classes. In ISO sometimes concepts are modeled as classes, then as free text without boundaries, or headings with notes.

Due to these differences in notation and differences in granularity, comparable UML class diagrams for each resource are provided herein. The three types of relations to be used are (1) generalization (the solid line with a hollow arrowhead), (2) aggregation/composition (diamond shape which is not filled/filled), and (3) undirected association (solid line). Generalization is the association of a specific to a less specific concept, where the former inherits the characteristics of the latter. Aggregation means that one element aggregates a number of other elements, which have an existence on their own. In contrast, composition aggregates elements that do not exist independently from the main element. Cardinality restrictions are only introduced where beneficial to the comparison and by no means seek to achieve a complete picture on multiplicity. One very nice modeling feature of UML is the ability to indicate abstract elements by italicizing their designation. This means that there is no syntactic equivalent in the targeted representation language for such an element.

3. Terminology

From its advent, the intent of terminology management has been a highly practical one and always related to a specific domain. Terminological resources are to fulfill a specific function and utilized towards a special purpose, e.g. consistent and homogenous asset management across the entire company. Thus, it has always taken a functionalist perspective, drawing from functionalism in linguistics (Budin 2010: 23). Although there are also semasiological or linguistic approaches to terminology, the one defined by ISO and of interest here is concept-oriented and onomasiological. It is defined as a set of domain-specific concepts designated by terms in a specialized language.

3.1. Terminology structure

In terminologies, concepts are the main mechanism for grouping objects into units of knowledge. Objects are abstracted into concepts, its properties into characteristics forming a definition, and one or several designations are assigned to the concept. The four main elements of a terminology according to ISO have been color-coded in Figure 1. Red elements represent relations that connect white elements, i.e., different types of concepts. Blue elements depict administrative and descriptive details added to concepts (associated information) as well as to the terminological resource (global and complementary information) and designations and definitions. Characteristics represented in green are integrated in the definition of a concept. However, due to their pivotal role in the concept and concept system formation process, characteristics have been assigned a separate color.

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While designations, characteristics, definitions, and information are represented in NL, relations and concepts are structuring elements in the concept system. Elements in italics are abstract because they are syntactically realized by their sub-elements. For instance, relations cannot be associative without specifying the type of proximity, such as time or space. The number of associative relations illustrated in the above diagram is by no means complete as there are many other thematic connections between ems. Terminological elements included in Figure 1 are the ones most interesting for a comparison.

Concepts mediate between real or abstract objects they refer to and designations and definitions, which make up the concept. The delimiting characteristics of an intensional definition unequivocally position the concept within the concept system. Not every concept might be included in the terminological resource, as the concepts and their interrelations constitute a coherent concept system. Moreover, the intensional definition determines the extension, the objects that meet all requirements of the intension. The pertaining designation(s) might either be linguistic expressions or non-verbal, such as images, formulas, code, diagrams.
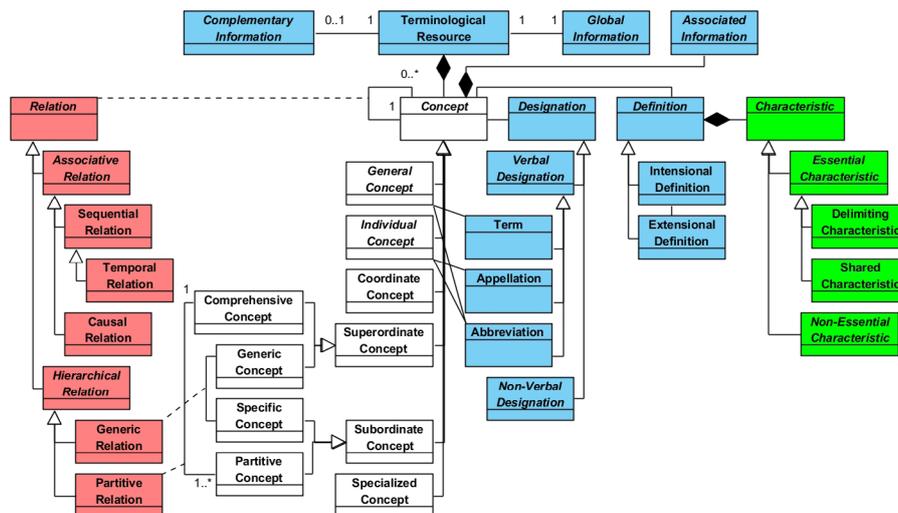
Figure 1: UML Overview Diagram of Syntactic Elements of Terminology

Apart from the concept relations illustrated in Figure 1, other operations can be performed on concepts and related designations. Definitions of such operations are not formal in the sense of machine-readable. They are contained in typed meta-data category such as reference, associative information, or description. Thus, operations are targeted towards human users only. It is possible to state a term is an antonym of another term, which is also possible on a conceptual level. However, synonymy is restricted to the designation level as it is presumed that synonym terms pertain to the same concept. For instance, equivalents in different languages pertain to the same concept and are separated into individual language sections. Two terms within the same language section are understood as synonyms. It is also possible to indicate partial equivalence by means of meta-data.

3.2. Terminology semantics

Conceptualization designates the abstraction of objects into units of knowledge called concepts. Concepts mediate between definition, designation, and objects. Terminology work entails an informed conceptualization of a specific domain, which means objects are grouped and described on the basis of their properties. In the terminological resource, objects are referred to by means of concepts, which mediate between objects and their definitions and designations. This reference is established by a set of essential and delimiting characteristics that uniquely define the concept intensionally and position it within the concept system.

Concepts are not isolated units but semantically located within a concept system, for which the

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context provides a framework. The basis for establishing a hierarchical ordering are subdivision criteria, such as material, usage, or specific traits of an object. In case there is more than one such criterion, the system is considered multidimensional. The semantics of the hierarchy are validated by means of the principle of inheritance, i.e., the subordinate concept inherits all characteristics of the superordinate concept. Associative relations are always thematic connections, such as by proximity in space and time. In fact, terminological relations in general connect concepts based on their senses (linguistic) rather than meaning (conceptual). Concepts and relations together establish a system that is supposed to be coherent, i.e., provide a coherent view on the specific subject field. Of course, this view depends on the specific context of the terminology.

Having established a concept system, each concept is assigned with designations in a special NL. The term is said to derive its meaning from the concept, while further administrative and descriptive metadata (associated information in Figure 1) contribute to this meaning. This meaning - the set of characteristics making up the definition and its designation - corresponds to the initially introduced intension, while the extension is the set of objects being conceptualized. The truth value refers to the correspondence between object and concept. In case the meaning of the term, the concept, adequately describes the nature of the object we can talk about truth (Budin 2003: 73). Thus, the definition is the central vehicle for conveying and expressing conceptual meaning targeted to human users and currently not machine-readable per se. Nevertheless, the principle of term transparency demands the term to allow for a basic inference of the concept's meaning without further explanations.

Although the boundaries of a term and a concept system might not be clear-cut, each terminology targets a specific context. For instance, an accounting terminology for neophytes differs substantially from the corresponding expert resource. The perspective on the domain and its level of granularity depend on the purpose of and the terminologist(s) modeling the resource. This context also determines the degree of specialization a concept and its designation have. Marzá (2009: 104-05) categorizes this degree along the following five aspects: cognitive, semantic, semantic-pragmatic, semantic, syntactic, and formal. Cognitive refers to the fact that concepts have a clear position within a concept system. Semantic hereby refers to the fact that a term is always more specific in terms of its traits than an entry in a lexicon of the language. Text genre, subject field, way of handling the subject, target audience, and the communicative situation represent pragmatic parameters to determine an expression to be a term (semantic-pragmatic). The syntactic aspect refers to the nominal nature of terms. Formal states that updating terminologies requires a formation process similar to the initial concept formation.

3.3. Terminology usage

A terminology as a collection of concepts and terms is by definition user-oriented and can be applied to improve consistency and coherence in any setting of specialized communication. Thus, the targeted users of the terminology have to be identified prior to initiating terminology work. Terminology science as a field is highly multi- and interdisciplinary in that it crosses linguistic, conceptual, and communicative fields to provide a holistic approach to terminological entries. The three main functions that are generally associated with terminology are epistemic (support of knowledge acquisition), informational (managing information), and discourse-directive (optimizing specialized communication) (Budin 1996: 18). Many specialists, such as engineers, technicians, scientists, are attracted to the field of terminology in need of improving their professional communication. On the other hand, terminologies can also offer a systematic entry point to specialized fields.

One of the major functions of a term is its usage in a specific context. Its discourse-directed function allows it to serve as a source of reference for consistent terminology use throughout and across individual organizations or enterprises. Furthermore, concepts group multilingual terms, their variants, and synonyms, which is why terminologies are an invaluable working tool for translators and other communication specialists. A range of linguistic and terminological details

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can be added to this set of multilingual specialized terms. The ultimate goal of a terminological data collection is to be used in terminological applications and exchanged as terminological data for human users.

4. Ontology

Ontologies are the main building block of the Semantic Web, but are equally used in biomedical applications, software engineering, and information architecture. Ontologies consist of a set of concepts, relations, and meta-data, but are also grounded in logics, which is why they are equipped with formal semantics (Krötzsch et al. 2012). The most cited definition for ontologies is that of "formal, explicit specification of a shared conceptualization" (Gruber 1995: 907). It is shared in the sense that it should reflect community consensus and formal in that it is machine-processable. Explicit refers to logical propositions. W3C defines ontologies similarly as "formalized vocabularies of terms, often covering a specific domain and shared by a community of users". The main difference is the focus on "terms", logical specifications of entities, and the domain-specific reference. Ontologies vary along the line of expressivity from lightweight to formal and in terms of field of study from upper-level to application and domain ontology.

4.1. Ontology structure

The main elements for grouping objects in ontologies are concepts called ontology classes and derived by the abstraction process called conceptualization. The three main syntactic categories of the Web Ontology Language 2 (OWL 2) depicted in different colors on Figure 2 are entities, expressions, and axioms. This model describes the general structure of OWL and is independent of any syntax used to realize ontologies.
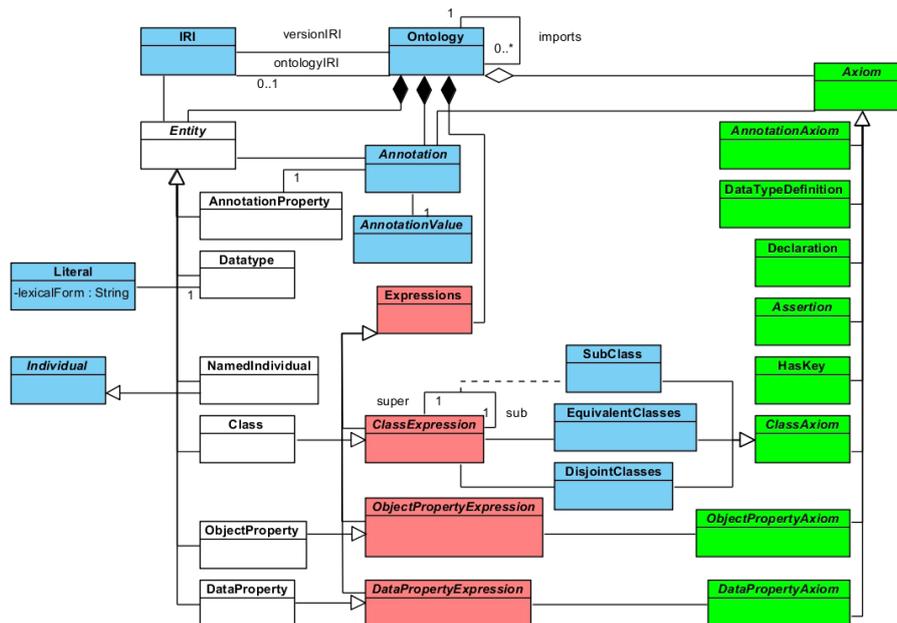
Figure 2: UML Overview Diagram of Syntactic Elements of OWL Ontologies

Entities are classes, named individuals, properties, and datatypes. Each entity is uniquely identified by an Internationalized Resource Identifier (IRI). IRIs are a generalization of the Uniform Resource Identifier (URI) allowing Unicode characters and uniquely identify names and resources on the Web. Classes represent a set of individuals. While named individuals are entities, OWL 2 considers individuals actual objects from the domain. Object properties connect two individuals, while data properties connect one individual to a data value. Datatypes represent sets of such data values, while literals can be considered individuals that denote data values. Literals are lexical forms that provide a string for individuals. Literals, data properties and object properties cannot be used directly to associate information to a class or property. This is why

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there are annotation properties, which can relate any entity to any value. Annotation properties assign NL content to the ontology, its entities, axioms, and annotations themselves as metadata. Some of them are built-in with a predefined significance, such as *rdfs:label* for NL expressions, *rdfs:comment* for NL definitions and comments, *owl:versionInfo* to specify the version of the ontology. As metadata they are beyond reasoning, i.e., cannot be used for or influence automated inferences.

Axioms are statements or logical propositions that declare what is true in the specific domain of discourse and are generally categorizes as assertional (ABox), terminological (TBox), or relational (Rox) axioms (Krötzsch et al. 2012). The ABox fills the conceptual world with instances of objects, such as assertions, which relate individuals to classes. The TBox describes relations between classes, such as subsumption, equivalence, or disjointness. The RBox does the same for properties and also allows further specifications such as transitivity, symmetry, etc.

Most elements are never referenced directly but by means of expressions, which can be considered either their parent element or a combination of elements. Object property expressions represent relationships between pairs of individuals, of which (inverse) object properties are a subtype. Data property expressions relate individuals and data values, but only have data properties as subtype. Classes and object properties connect to class expressions, called complex concepts in logic. They formally specify conditions on the properties of individuals they represent.

The permissible content of entities in ontologies is restricted by the use of expressions and axioms. For instance, the object property *hasAmountReceiveable* can be restricted to only connect to instances of the class *Creditor* in a specific ontology. As regards permissible operations on these units, OWL 2 provides an ample set of primitives that can connect class expressions. These operators are as follows, whereby the expression in brackets refers to the equivalent Boolean operator or a short explanation: intersection (and), union (or), complement (not), enumeration of individuals (providing a list of individuals), equivalence (same as), and a range of restrictions. These restrictions can either be applied to data properties or object properties, such as universal quantification (for all or every), existential quantification (for some or there exist some), and cardinality restrictions.

4.2. Ontology semantics

In the process of ontology engineering observable or conceivable objects are abstracted by means of conceptualization. Its intension refers to the signature of the ontology, i.e., the set of entities contained (Guarino et al. 2009), as well as the pertaining axioms, which further formally specify the instantiation of the ontology. Ontologies are able to represent knowledge including the objects it relates to by means of individuals, which are added to the ontology in a process called ontology population. Individuals constitute the extension of the ontology (Guarino et al. 2009).

Meaning of OWL 2 ontologies are based on direct semantics every implementation needs to comply with in order to be OWL 2 conformant. This formal semantics allows for the use of logical deduction to infer additional information from the facts represented in the ontology (Krötzsch et al. 2012). A logical consequence is a statement that can be considered true in terms of what is said in the ontology. Thus, direct semantics specify for which possible states of a world a particular set of OWL statements is true. Instead of making default statements about axioms, ontologies specify all possible situations where the depicted axioms hold, i.e., are true or satisfied, which is called the open world assumption in description logics (Krötzsch et al. 2012). Thereby, everything that is left out is simply omitted and not considered true or false.

It has to be noted that the semantics of OWL 2 does not require any NL in order to be specified. However, in order to be intelligible to human users, NL expressions are needed. Labels are the only means of representing terms in ontologies, but there is no standardization of or best practice for content of labels and the only built-in annotation of such a label is its language by means of an *xml:lang* tag.

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4.3. Ontology usage

As the interrelations and interaction of axioms can be very subtle and difficult for human users to understand, logical consequences can be inferred automatically. The computation of inferences is called reasoning, which requires tools – reasoners. The higher the expressive power of the selected ontology language the more complex the reasoning task. The trade-off between expressive power and complexity of reasoning needs to be evaluated for each ontology. For this purpose there are three profiles of OWL 2 EL, QL, RL, which are all a subset of description logics and created for a specific purpose. The most common profile for large ontologies with low expressive power is OWL 2 EL specifically designed with terminologies in mind, i.e., complex structural descriptions, large number of classes, heavy use of classification, and application to large amounts of data.

The computation of logical consequences and inferences is not only the main usage scenario for ontologies, but at the same time provides the main context for its interpretation. Reasoning is one important design goal for ontologies (Krötzsch et al. 2012). The reasoning algorithm for automating the activity needs to consider the used subset or profile of description logics. Each reasoning task processes a certain axiom, which means a range of reasoning tasks are required to check the ontology:

- ○ Satisfiability: checks whether the formal concept definition is meaningful

- ○ Classification: computes the subsumption hierarchy for classes and properties

- ○ Consistency: checks whether the knowledge is represented consistently

- ○ Equivalence: infers equivalence of classes

- ○ Querying: provides query language and inference-based answers, including instance retrieval

In case there is no NL content in an ontology, the output of a query or the result of a consistency check is difficult to understand by humans. This is why several approaches seek to verbalize logical consequences as well as content of ontology entailments by using controlled NL, such as the SWAT project (Nguyen et al. 2013). Other approaches investigate ontology visualization as a means of facilitating the human interpretation of ontology content (Fu et al. 2013).

Application scenarios for domain ontologies range from machine translation to the detection of similarities of e.g. products in a product classification ontology or web page contents when managing a corporate website based on ontologies. Most applications nowadays are to be found in the biomedical domain.

5. Comparison of terminology and ontology

While concept-oriented terminologies are defined as a set of domain-specific concepts designated by terms in a specialized language, ontologies are most frequently specified as formal and explicit knowledge representation based on description logic. To explicate the most basic difference in this definition it has to be stated that ontologies refer to and relate objects, while terminologies treat concepts and terms.

5.1. Terminology and ontology structure

A number of elements in the ontology have no correspondents in a terminology: all types of expressions and axioms, assertions. A flat representation of strings in labels without any internal structure is not equivalent to a domain-specific consistently used term in a terminology, but the only option for adding terms. Associative and partitive relations have no direct correspondents, but depending on the context might be expressed by expressions or restrictions. Class assertions would require an instance relation, which is currently not needed in terminological modeling.

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One of the clearest equivalences can be established between the generic relation and the subclass axiom. This suggests that some terminology concepts might coincide with ontology classes or individuals despite of the semantic differences discussed in the next section.

Concepts in ontologies are sets of individuals, while terminologies abstract away from objects, but cannot be described as sets of objects. Instead terminologies are defined as sets of concepts designated by terms. As has been argued before, terms are not concepts. In terminology, concepts do not exist independent from their definition written in NL. Ontologies, however, do not even require NL at all, even if its omission is detrimental to user-based applications. Smith et al. (2005: 648) delineate definitions of the term *concept* as psychological (mental entities), linguistic (meaning of general words), epistemic (units of knowledge), and ontological (abstraction of kinds, attributes, or properties). Terminological concepts in this classification clearly are epistemic, while ontologies belong in the last category.

5.2. Terminology and ontology semantics

The process of conceptualization in terminologies entails the reference to real-world object by placing concepts within a clearly defined net of semantic relations and defining it in NL. Assertions and expressions in ontologies make statements about real-world objects and allow relating these objects (individuals) by means of properties. Thus, ontologies realize the extensional definitions, while terminologies fully focus on intensional definitions of concepts. As regards the semantic perspective on truth values, ontologies are based on the open-world assumption, i.e., everything that is not in the ontology is not assigned a truth value, whereas depicted axioms need to be true. This also implies that isolated parts of the ontology are valid as long as they are satisfiable. This usually holds not true for terminology, which depends on the coherence of the entire concept system in one resource. From a semantic perspective, commonalities of both resources are reduced to the linguistic equivalence of contents of an ontology label with a term in a terminology.

The RDF(S) label property system specifies a many-to-many relation to ontology elements. Several labels can be associated to one ontology element, while one label can refer to several elements, i.e., might be ambiguous. This system presupposes that each label has at least one correspondence to at least one ontology element, which raises several issues on the paradigmatic and syntagmatic level. In terms of paradigmatic aspects, there is no specification of the type of semantic relation a set of labels associated with one concept share. On a syntagmatic level, components of NL expressions cannot be associated with a specific concept and thus, are not considered at all in the current label system.

Naming a domain ontology element requires the assignment of linguistic signs to elements. There is no standardized procedure or best practice for this process and it is an optional choice to assign labels. In addition, time pressure and multiple agents (several experts, engineers, and semi-automated term extraction procedures) often lead to a lack of consistency in the naming of ontology elements. Terminology standards and best practices offer established term formation processes and terminological principles that foster consistency of terms in terminological data collections.

5.3. Terminology and ontology usage

The emphasis of both resources in terms of what they can describe and express about the described knowledge differs. Terminologies describe, define, relate, and model the terminological differences and similarities within and across languages, something that has not yet been accomplished by ontologies. On the other hand, ontologies allow for informed decision-making due to the logical statements depicted about the state of the world represented. In a nutshell, terminologies are interested in how terms are used in specialized communication, while ontologies seek to draw inferences on the specific state of a certain domain of discourse.

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While terminologies are classified as knowledge organization systems, ontologies are categorized as knowledge representation systems. This differentiation can be explored from a pragmatic perspective. Knowledge organization has its origin in the library science community and is concerned with the construction of semantic tools for information retrieval (Friedman and Thellefsen 2011). Related processes entail classification, indexing, and description of documents and knowledge, which are performed by information specialists and computer algorithms. In knowledge representation the two main types of representation relevant for the purpose at hand are the represented world and the representing world. While the former is the world *about* which we make statements and assertions, the latter is the one *in* which we make statements and assertions (Friedman and Thellefsen 2011). Thus, representation targets a system of reasoning that assigns truth values by exchanging logical arguments.

6. Requirements to ontology-terminology integration

The proposed semiotic comparison clearly shows that terminologies and ontologies cannot be treated equivalently as they differ from a syntactic, semantic, and pragmatic perspective. The most striking syntactic difference is the refined modeling of semantic relations and fine-grained NL contents of terminologies, which have no corresponding elements in the ontology. Thus, a requirement to the integration definitely is the generation of a flexible model to accommodate features specific to individual NLs and differences between languages. The syntactic differences already indicate that the terminological data model requires a formal semantics to benefit from ontological advantages. Adding formal semantics would bring several elements, such as synonymy relations, to the conceptual level of terminologies and might be beneficial to terminological data modeling. However, simply replacing the concept system of the terminology by a formal ontology is not feasible as the pragmatic and semantic comparison shows. A profound integration framework considering all three levels is needed.

As the number of differences is substantial, a manual integration of terminology and ontology is out of question. Such an endeavor clearly calls for automating the process. In addition, granularity is one aspect that requires further considerations, e.g. is it even necessary to dispose of an existential quantifier in terminology or can the purely NL elements of terminologies be formalized. The last aspect is particularly interesting, as characteristics and subdivision criteria might profit substantially from a formal representation.

7. Related work

With the target of accelerating the ontology design process, controlled vocabularies, thesauri, and terminologies have been re-engineered into ontologies syntactically (Villazón-Terrazas and Gómez-Pérez 2012) based on patterns. Kless and Milton (2010) provide a semiotic comparison similar to the one proposed in this paper, but compare thesauri and ontologies. The results thereof were then turned into a methodology for re-engineering thesauri into ontologies (Kless et al. 2012). Integrating terminologies with ontologies focuses mostly on linguistic aspects. Resulting ontology-terminology models either provide meta-data for the ontology (e.g. Aussenac-Gilles et al. 2008) or generate a completely new socio-cognitive linguistic categorization framework for terminological descriptions (Temmerman and Kerremans 2003). Interoperability of concept-oriented terminology and ontology engineering standards and formats is yet to be achieved. The three main strands of semiotics provide an excellent foundation for an interoperability framework of knowledge representation and terminology standards.

7.1. Conclusion and discussion

This paper describes, analyzes and compares terminologies and ontologies from a semiotic perspective. These resources were found to be substantially different in all three aspects: syntax, semantics, and pragmatics. From a syntactic perspective only the generic relation and associated

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metadata of the terminology are fully matched by an axiom and annotations in the ontology. Semantically speaking there is basically no congruence - not even optionally used ontology labels can be equated with terms. From a pragmatic angle the main difference lies in the goal of fostering specialized communication in terminologies and enabling automated reasoning for ontologies. Furthermore, the former is a knowledge organization and the later a knowledge representation system – a differentiation that is worth being explored from a pragmatic side.

For terminology to truly meet the multilingual Semantic Web, an interoperability framework considering all semiotic aspects and requirements introduced above is required. Terminology fosters the accommodation of specialized natural languages, while ontologies command of ample tool support. Furthermore, proven linking mechanisms of the Semantic Web are beneficial to terminology harmonization. As a future research activity the ontology-terminology integration would be a mutually beneficial encounter.

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University terminology: Why it is not just higher education terminology

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Abstract. Following a prescriptive approach, the University of Vienna aims to increase the consistent use of university-specific terminology in German and English. The University's terminological database is available to university employees and provides preferred German and English terms. By focusing on administrative university terminology the subfields provided in the University of Vienna's terminological database range from studying and teaching, research, human resources, international relations, infrastructure to designations of organizational units.

After the introduction of the three-cycle Bologna system envisaging the harmonization of the European higher education system, the University of Vienna is confronted with two coexisting higher education systems. The transition to the Bologna higher education system is accompanied by a change in university terminology. German terms that were introduced to help separate both higher education systems often result in terminological inconsistencies in German source texts and pose a challenge when searching for equivalent terms in English. Thus terminological inconsistencies can occur on several levels and need to be considered in terminology standardization.

Keywords. Bologna framework, higher education system, prescriptive terminology work, terminological database, terminology standardization, university terminology, UniVieTerm.

1. Introduction

Internationalization is a key objective for the University of Vienna, the largest University in Austria. The terminological database of the University of Vienna contributes to the internationalization of the University as it provides standardized German and English university-specific terms.

After defining the scope of university terminology and distinguishing university terminology from higher education terminology, subfields of administrative university terminology are identified for the University of Vienna. Moreover, the management and standardization of university terminology at the University of Vienna is illustrated by the University's terminological database UniVieTerm.

Terminology work in the area of university terminology reveals terminological inconsistencies between and within Austrian universities. The reasons for terminological inconsistencies and the characteristics of Austrian university terminology are discussed and related to the implementation of the Bologna framework in Austria and to the autonomy of universities to independently coin terms in some areas of their activities.

2. Definition and scope of university terminology

Delimiting the subject field of university terminology and its subfields requires the definition of university terminology, but a clear-cut definition of university terminology is lacking in the literature. One approach to define the scope of university terminology is to start with defining the terms higher *education* and *university*. The fields of terminology pertaining to these two concepts can be derived from the definitions of both terms. Higher education is legally defined as "[a]ll types of courses of study, or sets of courses of study, training or training for research at the post secondary level which are recognized by the relevant authorities [...] as belonging to its higher education system" (The Convention on the Recognition of Qualifications 1997). The

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Oxford English Dictionary online describes university as "[a]n institution of higher education offering tuition in mainly non-vocational subjects and typically having the power to confer degrees". This definition shows that university terminology is a subfield of higher education terminology because higher education encompasses not only courses of study at universities but also at vocational schools and other institutions.

University terminology as the field of terminology "[a]n institution of higher education offering tuition in mainly non-vocational subjects and typically having the power to confer degrees" (OED 2013) concentrates on is a rather broad definition. This broad field of university terminology can be subdivided into a) academic university terminology – terminology used by the disciplines represented at a university – and b) administrative university terminology – terminology "relating to or required for the running of a [university]" (OED 2013). Thus administrative university terminology is the subfield of university terminology that comprises terms that all university members are confronted with when working, researching or studying at a university. At the University of Vienna, the difference between administrative and academic terminology is also reflected by the internal structure of the University. The University is subdivided in academic units and non-academic, administrative units. A clear distinction between administrative and academic terminology cannot always be drawn because the main activities of universities, e.g. research, teaching, administration and studying are intertwined and depend on each other to a certain degree. Subfields of (administrative) university terminology can be delimited according to the internal (administrative) structure of universities. At the University of Vienna the subfields of administrative university terminology according to the internal structure are studying and teaching, research and career development, human resources, international relations, infrastructure and organization.

Austrian university terminology relies primarily on two sources: a) terminology specified by legislation and regulations and b) corporate terminology of Austrian universities. Corporate terminology in the university context means that some terms are unique to a certain university and are not contained in legislation or specialized dictionaries.

3. Managing university terminology

To manage and standardize administrative university terminology the University of Vienna created a terminological database called UniVieTerm. The purpose of UniVieTerm is to be a reference tool for university staff containing university-specific, administrative terms in German and English. It also provides easy access to terms preferred by the University of Vienna's terminology standardization committee.

Terminology standardization at the University of Vienna aims to achieve consistency in university-specific terminology as part of a corporate identity, to facilitate internal and external communication by "avoiding competing designations for the same concept" (Chiocchetti & Ralli 2013: 32). Terminology work at the University of Vienna in the area of university terminology follows the principles of prescriptive terminology work, but the University has a "less forceful, less prescriptive attitude that recommends, rather than dictates, the use of a form" (Cabré & Sager 1999: 211). The recommended university terms in German are predominantly derived from legislation and regulations. The terminology standardization committee at the University of Vienna selects the most appropriate English terms. In UniVieTerm these preferred terms are highlighted as recommended English terms that should be preferably used when translating German source texts into English.

UniVieTerm is based on systematic terminology work (cf. Mayer & Seewald-Heeg 2009: 14) and concentrates on administrative university terminology and its subfields that are derived from the internal structure of the University. However, "ad-hoc terminology work" (Chiocchetti & Ralli 2013: 23) and translation-based terminology work (cf. Mayer & Seewald-Heeg 2009: 15) also play an important role because translators or university employees ask for English translations of university terms as well.

The main target group and the majority of UniVieTerm end-users are university employees. Other types of end-users are terminologists, translators and members of the terminology standardization committee. The university staff is a heterogeneous user group consisting of academic and non-academic employees without or with only little experience in the practices and methods of terminology work. However, terminology management systems available on the market are primarily tailored to the needs of terminologists. As the majority of UniVieTerm end-users are non-terminologists their needs are crucial for the design of the University of Vienna's terminological database. University employees and their needs also determine the amount and content of terminological data provided in UniVieTerm. So the layout, the terminological information and thus the overall usability of the terminological database are based on the needs of university staff. To enhance the commitment of end-users, they can actively contribute to the further development of UniVieTerm by suggesting new terms, giving feedback on terminological information and expressing their terminological needs.

4. Austrian university terminology in a period of transition

4.1. Terminological inconsistencies between and within Austrian universities

Austrian university terminology is currently in a period of transition as legislative changes restructured the Austrian higher education system. In 2002, the last major changes occurred in Austrian university legislation. The Austrian Universities Act altered the internal structure of Austrian universities, granted their autonomy and implemented the Bologna framework in Austria. Although the 2002 Universities Act standardized some university terms in German, it also enabled the emergence of corporate terminologies, i.e. universities are able to coin their own German terms in those areas that are not specified by legislation. Examples for corporate terminologies are German terms coined by Austrian universities to designate the "officer to administrate matters concerning the enforcement of study law in the first instance" as stipulated in the 2002 Universities Act, section 19, para. 2. The German designations used for this body by Austrian universities include *Studiendekan*, *Curriculumdirektor* or *Studienpräses* (cf. Ralli, Stanizzi & Wissik 2007a: 11).

In addition to terminological inconsistencies between universities, there are also terminological inconsistencies within universities. Terminology work carried out in the UniVieTerm project depicts the development of university terminology in German. Thus it also reveals that some superseded German terms are still used by a small number of university members. One example for the use of superseded Austrian university terms is the superseded German term *Immatrikulation* used for designating the admission to a university. Nevertheless, the preferred German term used for designating the admission to a university is *Zulassung*.

Austrian university terminology is also influenced by the neighboring German-speaking countries. On the one hand, there are university terms in German that are identical in meaning, e.g. *Studiengang* and *Studienrichtung*. The first German term is predominantly used in Germany and the latter is predominantly used in Austria. Both terms designate the same concept, i.e. study program. Problems only arise when different designations used for the same concept create the impression that they designate different concepts. On the other hand, there are terms used in the German-speaking neighboring countries that differ in meaning to the Austrian term and lead to terminological inconsistencies and misunderstandings. Ralli, Stanizzi & Wissik (2007b: 287) attribute these intralingual terminological incongruities to the large amount of culture-specific terms, the degree of freedom Austrian universities have to coin their own terms, and cultural differences between German-speaking countries and their legal and higher education systems.

Terminological differences within and between Austrian universities are due to changes in domestic university legislation, the autonomy of universities and the persistent use of superseded German terms in university communication.

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4.2. Implementation of the Bologna higher education reform

Higher education systems within the EU have still not achieved the level of comparability as intended by the European Commission by the implementation of the Bologna framework (Nickel 2011: 11). From a terminological point of view, this means that finding equivalent terms in another language is still rather difficult because university terminology and its legal basis are country-specific and not based on a common extralinguistic reality (cf. Mayer 1998: 77). However, the Bologna process aiming at harmonizing the higher education systems in Europe already changed the Austrian higher education system. In the current period of transition from the domestic higher education system to the Bologna framework, two higher education systems are coexisting in Austria, i.e. the three-cycle Bologna system and the 'old' Austrian system. The higher education systems that exist in parallel during the transition period have also consequences for the university terminology in use at the University of Vienna. The diversity of university terminology is also reflected by the academic degrees currently awarded to graduates of the University of Vienna. They comprise *Bakkalaureus/Bakkalaurea*, *Magister/Magistra*, *Bachelor*, *Master*, *Doktor/Doktorin* and *PhD*. Graduates of the diploma and *Magister* programs are awarded a *Magister* degree and graduates of baccalaureate programs a *Bakkalaureus* degree. These three programs are phased out according to the Bologna framework. Bachelor's, master's, doctoral and PhD programs are programs that are already in line with the Bologna process.

The coexistence of the old and new programs at the University of Vienna is one reason for terminological inconsistencies in English texts containing university terminology. The German terms of the old and new systems cannot be used interchangeably because they are not synonymous. In English translations some university members use the term *master's program* to designate a *Magister* program. Although *Magister* and master's programs are similar in structure, duration, content, etc. they cannot be used synonymously because the degrees awarded after successful completion of the programs are not the same (*Magister* v. *Master*).

To distinguish the domestic higher education system and the Bologna system in this period of transition, new German university terms are introduced in Austria. This includes that German designations used for the domestic system and German designations used for the Bologna framework are different. Examples are the terms for *curriculum*: The German term *Studienplan* is used to designate curricula that were effective until the introduction of the Universities Act. The new German term *Curriculum* was introduced by the 2002 Austrian Universities Act and its use is reserved for degree programs that were set up according to the Bologna reform. The German terms *Studienplan* and *Curriculum* are means to distinguish the old and new Austrian higher education systems.

German terms that are used to draw a clear distinction between the Austrian higher education system that is phased out and the Bologna higher education system pose a challenge when searching for English equivalent terms. Therefore the question arises whether to use the same English term for both German designations or whether to introduce neologisms in English to emphasize and maintain the distinction between these systems in English as well. However, finding English university terms that are identical in scope and meaning to the German university terms, i.e. "exact equivalence" (ISO 5964:1985) is extremely rare. This is also due to the "Systemgebundenheit des Hochschulrechts" (Ralli, Stanizzi & Wissik 2007b: 289) which renders it difficult to find equivalent terms in another language as higher education systems have their individual concepts and knowledge structures that differ from other higher education systems. Terminological gaps also reveal the "Systemgebundenheit" of and cultural differences between higher education systems.

Due to the internationalization strategy of the University of Vienna, English has been defined as the target language in which university terminology is available in UniVieTerm. Although English has evolved "as a lingua franca" (Seidlhofer 2011) or "as an international language" (Jenkins 2000), cross-cultural misunderstandings are inevitable. Glückstad & Mørup (2012:65) state that cross-cultural misunderstandings in English are often caused by not being able to

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identify the 100% equivalent concept and by different cultural backgrounds, i.e. knowledge about the university systems in the respective countries interferes.

The Bologna process reorganized the Austrian higher education system and also the Austrian university terminology. To separate the old and new higher education systems, Austrian university terminology is characterized by German terms that belong either to the old domestic system or German terms that belong to the Bologna system. This distinction also renders it difficult to find target language equivalent terms.

5. Conclusion

Austrian university terminology is influenced by European legal developments and corporate terminologies of universities. Therefore inconsistencies and neologisms in university terminology occur on several levels. The implementation of the Bologna reform in Austria resulted in a higher education system that is currently in a period of transition. In this period, the Austrian and Bologna higher education systems are distinguished by different German terms. German terms that are used to draw a clear distinction between the systems are either specified by legislation or by the universities themselves. The partially standardized university terminology on a national level, the complexity of the higher education system and the autonomy of universities to coin their own German terms in some fields lead to terminological inconsistencies between and within universities. Finding equivalent terms, i.e. terms that are identical in meaning, in another language is a daunting task as higher education systems are country-specific and university terminology can be university-specific.

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Creating ontology from Persian thesauri

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Abstract. Ontologies can play a significant role in information systems, natural language processing and knowledge engineering. As common lexicon is the prerequisite for knowledge sharing through language, shared ontologies is the prerequisite for knowledge sharing through information technology. To speed up the ontology development process, as ontology developers are reusing all available ontological and non-ontological resources such as different domain ontologies and lexicons, we use the basic sciences thesauri previously developed at IRANDOC as resources for ontology construction. For this purpose, we firstly merge thesauri and transform the data format into ISO 25964 standard. Then, we built conceptual model based on the terms and their relationships in thesauri and the concept maps that were designed by domain experts for each of basic sciences (Chemistry, Physics, Biology, Geology and Mathematics). Ultimately, the ontology was generated by implementing the model in OWL, an ontology implementation language. The aim of this project is to create a standard ontology to be used in information retrieval system.

Keywords. Information retrieval, IRANDOC, ontology, Persian thesauri.

1. Introduction

In recent years, development of World Wide Web and its related technologies influence representing and retrieving knowledge in the field of information science. These new technologies enable machines to understand, process, and retrieve relevant information. In particular, ontologies are used to describe and represent knowledge and can enhance the performance of information processing systems.

However, developing ontologies is a time consuming and labor work, so many ontology developers try to facilitate and speed up this process by reusing other resource such as thesaurus. In particular, (Soergel 2004) and (Kawtrakul 2005) try to reengineer AGROVOC into ontology by building the ontology on the information contained in thesaurus and refine the information as needed. Moreover, in (Huang 2007), the Inspec thesaurus is used to enrich core ontology in the IT domain. In Persian language, Khosravi and vazifedoost (khosravi 2008) work on re-engineering an ASFA thesaurus into ontology in the field of library and information science.

In fact, thesaurus contains semantic information and hierarchical structure that make it an appropriate resource for ontology construction. Therefore, we determined to transform the basic sciences thesauri, previously developed at IRANDOC, into ontology that can be used in our information retrieval system. In the rest of the paper, thesaurus and ontology are compared firstly. Then the ontology development process is described. The ontology refinement issue is mentioned at last.

2. Thesaurus versus ontology

Thesaurus consists of terms and their relationships and its prime application is in information retrieval. The traditional aim of a thesaurus is to guide indexer and searcher to choose the same term for the same concept (ISO25964-1 2011). Terms stand for concepts in thesaurus. Each concept can be represented by one or more terms but just one term is selected as the preferred term per language for a concept. An equivalence relationship should be established between a preferred term and its corresponding non-preferred term.

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In addition, two kinds of relationships are distinguished between concepts: hierarchical (BT/NT) and associative (RT). These relationships are established only between preferred terms. Whenever the scope of one concept falls completely within the scope of other concept, hierarchical relationship should be established between them. Similarly, associative relationship is used between terms that are conceptually or semantically related and their relationship is not hierarchical.

On the other hand, Ontologies consist of concepts (also Known as classes), relations (properties), instances and axioms. It is used by people and application to share the meaning of a particular area of knowledge and can be used in formal and informal reasoning (Sowa 2010). Fig. 1 shows a comparison between thesaurus and ontology based on the triangle of meaning. A thesaurus generally works with the left-hand side of the triangle (the terms and concepts), while an ontology, in general, works more with the right-hand side of the triangle (the concepts and referents)(Daconta, et al 2003).
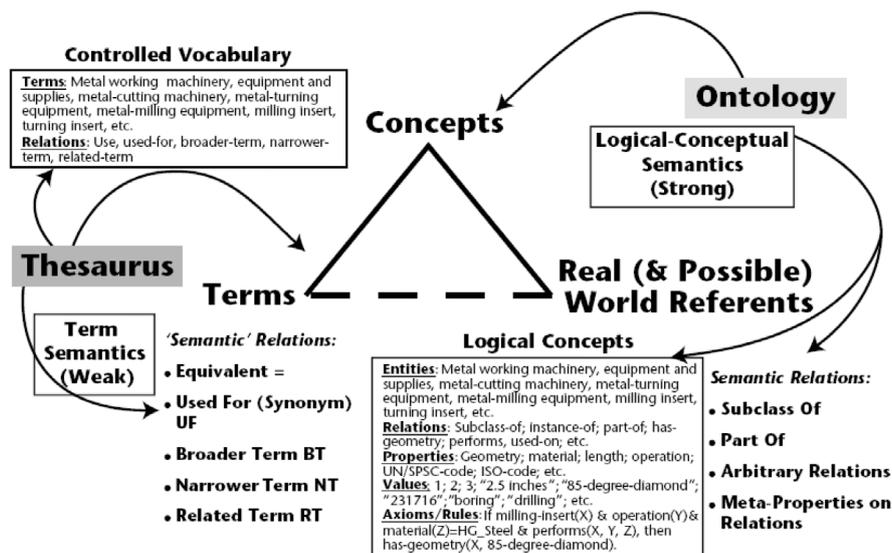
Figure 1: Thesaurus versus Ontology (Daconta, et al 2003)

3. Creating ontology from thesaurus

3.1. Synchronization and integration

We used bilingual (Persian/English) thesauri of basic sciences (chemistry, physics, biology, geology, and mathematics), which were previously developed at IRANDOC, as resources for ontology construction. Within a collection of tens of thousands of terms that were produced in different times and by different experts, we needed to synchronize common concepts in thesauri before integrating them as a macro thesaurus.

To reduce the amount of time and human resources which were needed for synchronizing process, Thesaurus Synchronizer was developed using Thesaurus Builder to illustrate differences between matched cases of two thesauri. The differences between thesauri are examined based on ISO 25964 standard. It also provides powerful tools for demonstrating differences and suggestions for each of the existing matters. Therefore, domain experts synchronized each two thesaurus semi-automatically.

The Thesaurus Synchronizer examines the following issues within two thesauri:

- ○ Differences in transcription of the same concept,
- ○ Differences in narrower terms of the same concept,

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- ○ Differences in non-preferred terms of the same concept,

- ○ Differences between the translations of the same term in a specific language,

- ○ Differences in related terms of the same concept,

- ○ Lack of a related term for a concept in one thesaurus,

- ○ Using the same translation for two different terms in a particular language,

- ○ Different selection of a preferred term for one concept,

- ○ Different relationship type between two concepts,

- ○ Infinite loop between concepts (conceptual network),

- ○ Different concepts related to the same term (polysemy).

After domain experts synchronized all thesauri completely, the integration process must be done to produce a macro thesaurus which can be transformed into ontology. The integration of basic science thesauri also was done semi-automatically by domain experts. The thesaurus format was transformed from ISO 5964 into ISO 25964 thereafter.

3.2. Methodology

Our methodology for ontology construction formed based on METHONTOLOGY (Gómez-Pérez 2004). This methodology enables the construction of ontologies at the knowledge level. We also consider the approach for re-engineering non-ontological resources into ontology presented in (Villazón-Terrazas 2010). So we first extracted the conceptual model of our thesaurus based on the concept maps previously designed by domain experts and the structure of thesaurus and then developed ontology using METHONTOLOGY methodology

In METHONTOLOGY, the main activity is ontology conceptualization because it determines the rest of the ontology development process. The aim of this activity is to design the knowledge representation paradigms and regulate knowledge based on the implementation language which will be used to formalize and implement the ontology. After building the conceptual model, it can be transformed into formalized model. The next step in methodology is to implement formalized model in an ontology language, so that the knowledge model is moving gradually to the implementation level during the process and can be understood by a machine. Fig. 2 shows the process model in ontology development. The discontinuous line in the figure shows that the transformation from conceptual model into formalized model may be done incompletely because some domain knowledge may be lost along the conversion process.
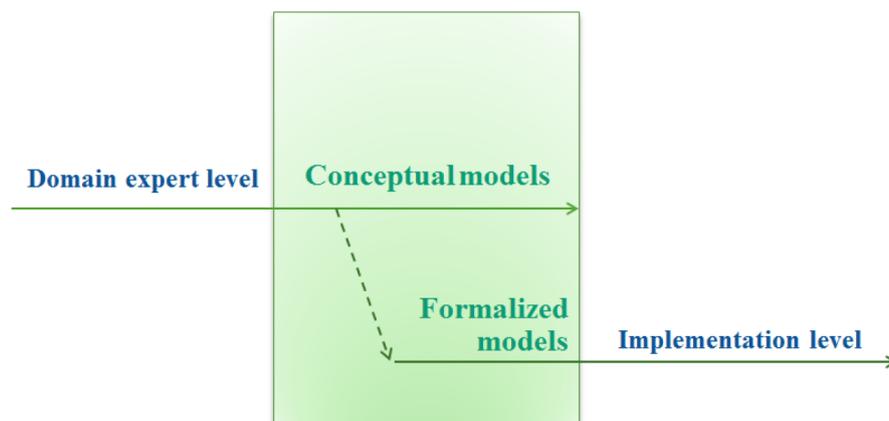
Figure 2: Essential process model in ontology development (Gómez-Pérez 2004)

As shown in the Fig. 3, conceptualization activity in METHONTOLOGY consists of the set of tasks for organizing knowledge. Each task creates a special ontology component (concepts,

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relations, instances …) and the arrangement of tasks offers the order which components must be created in along the activity. Following the order of tasks in the model, ensures that the represented knowledge is complete and consistent. We perform first four tasks during conceptualization activity and leave describing details for the next step of our project.
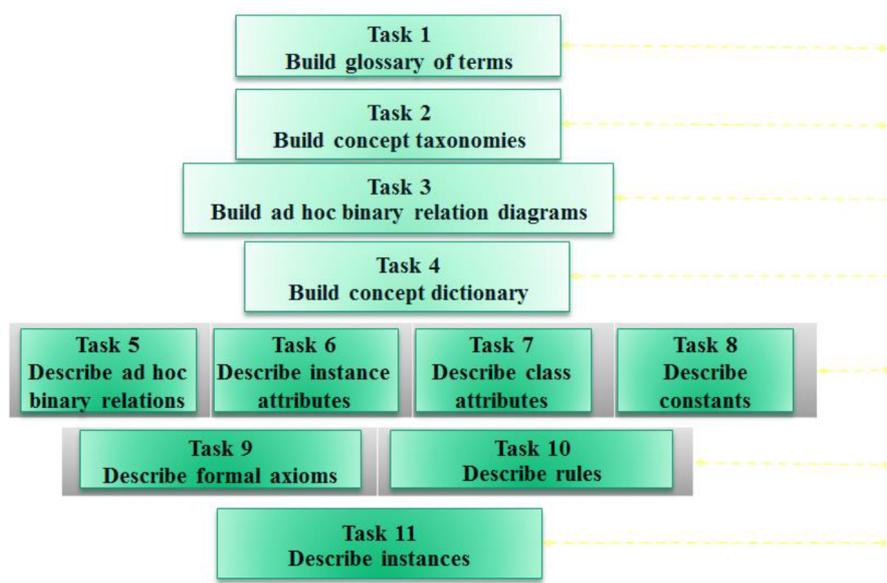

Figure 3: tasks of the conceptualization activity according to METHONTOLOGY (Gómez-Pérez 2004)

3.3. Conceptualization

As first task we built the glossary of terms based on the terms in our thesaurus. It should identify the set of terms which will be included on the ontology, their description in natural language, and their synonyms and acronyms. These terms were selected formerly by our domain experts from multiple resources such as classification schemes, existing thesauri, encyclopedias, dictionaries, periodical indexes, lexical indexes of textbooks, and collection of relevant documents using either inductive or deductive method.

In deductive method, the general framework of the subject is designed firstly. Then each of the topics is divided into subtopics and the process will continue to determine the most specific concepts. In the inductive method, a collection of relevant documents is selected and after indexing them, a set of concepts and terminologies is obtained. In fact, the inductive method is to form a hierarchy of concepts of a domain, while the deductive method tries to design a basic conceptual structure in one or more specialized fields and expand it by appending relevant terms to the structure.

Second task is to build concept taxonomies to classify concepts. Each preferred term designates a concept and concept taxonomies were formed based on the taxonomic relations in thesaurus. Afterward, we identified ad hoc relationships between concepts of the ontology and build ad hoc binary diagrams in task 3. Ad hoc relationships could be established between concepts of the same (or different) concept taxonomy. We mapped the relationships between terms in thesaurus into semantic relationships between corresponding concepts in ontology. BT/NT is converted to super/subclass-type relationship to form hierarchical structure of the ontology and other relationships labeled with their corresponding relationship type in thesaurus. Parts of concept taxonomies and hierarchical relationship between concepts is represented in Fig. 4 and 5.

The last task is to build concept dictionary. Concept dictionary mainly includes the concept instances for each concept, and their ad hoc relationships. We identify non-preferred terms as individuals and associated each of them with the concept which is designated by their corresponding preferred term. Translations and abbreviations are set out as concept attributes.

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3.4. Implementation

After building conceptual model based on semantic information in thesauri, we implemented it in OWL, a web ontology language which is recommended by the World Wide Web Consortium (W3C). For this purpose, at first, domain experts contemplated concepts and made common concepts uniform, and then they examined hierarchical and associative relationships, and equalized them semi-automatically. Finally, the Basic Sciences Ontology was developed by converting conceptual model into OWL. Fig. 6 represents part of this ontology in Protégé.
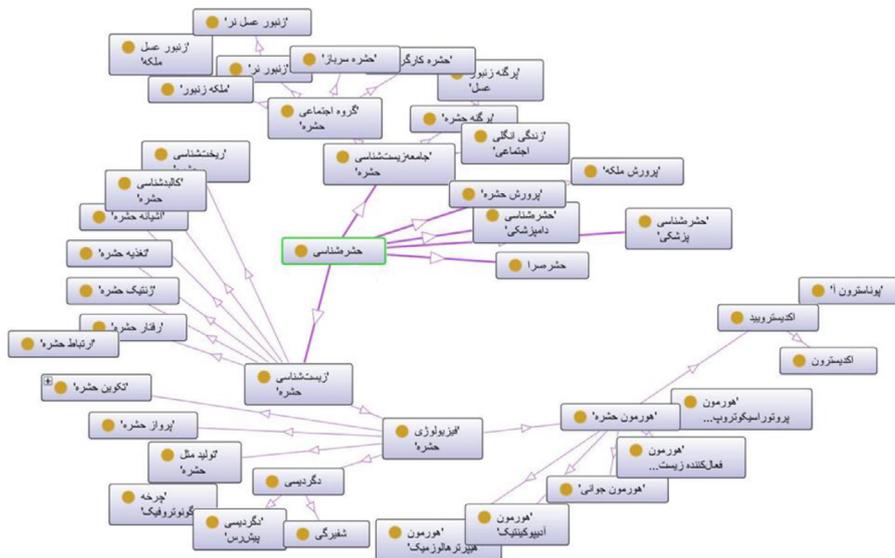
Figure 4: Part of concept taxonomy
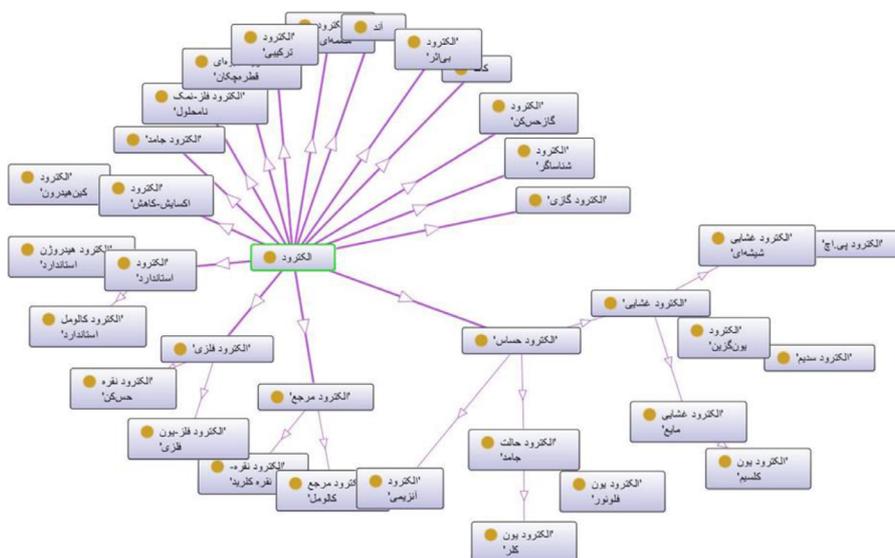
Figure 5: Part of concept taxonomy

4. Ontology refinement

The difference between the applications of thesaurus and ontology and the ambiguity in existing relationships in thesaurus, make the refinement process necessary. The hierarchical relationship in thesaurus may be one of the three types: generic, hierarchical whole-part, or instance relationship. However, in practice few thesauri make the distinction between them (ISO25964-2 2011) and therefore, this kind of hierarchical relationship has insufficient precision

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for ontologies. Likewise, the associative relationship is very ambiguous. It is used in many different situations and link any two related terms with non-hierarchical relationship. Thus, its semantic is unspecified and cannot be used for reasoning.
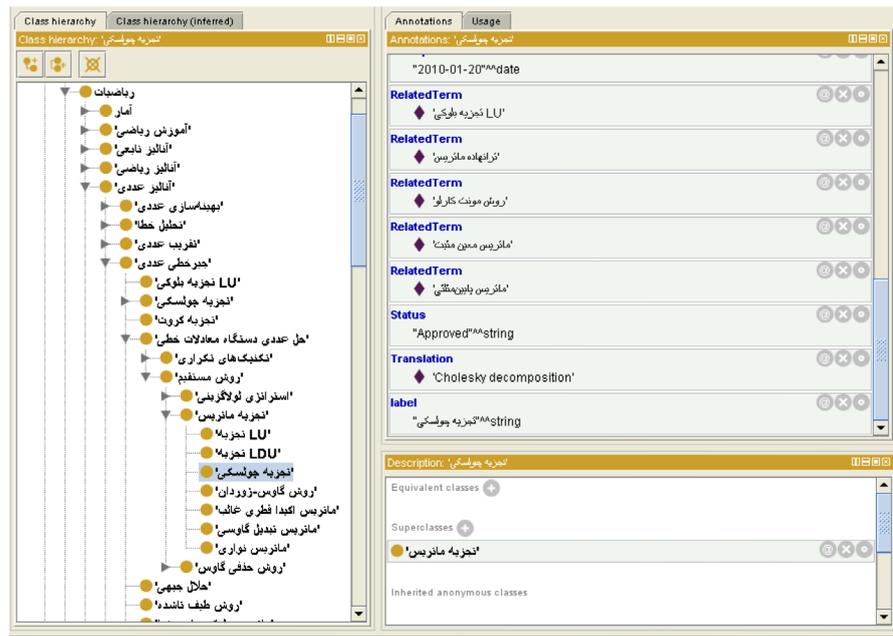
Figure 6: Part of Developed ontology

As a result, the relationships of developed ontology needed to be refined and converted to more precise ones. Our approach of refinement was similar to what proposed in (Soergel 2004). Our experts tried to extract semantic relationships between concepts and make the relationships more meaningful and specific. We also benefit from the concept relationship types, shown in Tab.1, in the first stage of refining the ontology. Hierarchical relationships in thesaurus are usually transformed into one of the concept relationships in first two rows and associative relationships are often converted to one of the relationships in the last row.

5. Conclusion

In this paper, we use thesauri previously developed at IRANDOC as resources to construct basic sciences ontology. At first we synchronized and integrated the thesauri semi-automatically and then transformed the produced macro thesaurus from ISO 5964 into ISO 25964. We use the methodology called METHONTOLOGY for designing the ontology. In this methodology the main activity is conceptualization. We used the conceptual model of our thesauri for this activity and build the ontology conceptual model based on it. At last, ontology of basic sciences generated by formalizing and implementing the model in OWL.

The next step is to refine the relationships to more specific semantic relations. Our domain experts tried to refine some relationships manually based on the Soergel approach (Soergel 2004). But we decide to design an appropriate method for refining the ontology semi-automatically. Also we need to add more details to our ontology and turn it into heavyweight ontology to get more advantage from it in formal reasoning.

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X, Y are concepts
Isa
X *<includesSpecific>* Y / Y *<isa>* X
X *<inheritsTo>* Y / Y *<inheritsFrom>* X
Holonymy/meronymy (the generic whole-part relationship)
X *<containsSubstance>* Y / Y *<substanceContainedIn>* X
X *<hasIngredient>* Y / Y *<ingredientOf>* X
X *<madeFrom>* Y / Y *<usedToMake>* X
X *<yieldsPortion>* Y / Y *<portionOf>* X
X *<spatiallyIncludes>* Y / Y *<spatiallyIncludedIn>* X
X *<hasComponent>* Y / Y *<componentOf>* X
X *<includesSubprocess>* Y / Y *<subprocessOf>* X
X *<hasMember>* Y / Y *<memberOf>* X
Further relationship examples
X *<causes>* Y / Y *<causedBy>* X
X *<instrumentFor>* Y / Y *<performedByInstrument>* X
X *<processFor>* Y / Y *<usesProcess>* X
X *<beneficialFor>* Y / Y *<benefitsFrom>* X
X *<treatmentFor>* Y / Y *<treatedWith>* X
X *<harmfulFor>* Y / Y *<harmedBy>* X
X *<hasPest>* Y / Y *<afflicts>* X
X *<growsIn>* Y / Y *<growthEnvironmentFor>* X
X *<hasProperty>* Y / Y *<propertyOf>* X
X *<hasSymptom>* Y / Y *<indicates>* X
X *<similarTo>* Y / Y *<similarTo >* X
X *<oppositeTo >* Y / Y *< oppositeTo >* X
X *<hasPhase>* Y / Y *<phaseOf>* X
X *<growsIn>* Y / Y *<EnviromentForGrowing>* X
X *<ingests>* Y / Y *< ingestedBy>* X

Table 1: Concept relationships: Examples (Soergel 2004)

6. Acknowledgements

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Metaphoric terms: Elusive magic of meaning transformation

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Abstract. In technical texts metaphoric terms are often used to denote notions that have not received a name yet. They perform several functions: expand the scope of information communicated at the same time compressing the information; extending the meaning of the existing linguistic items, they fix new meanings by designating new concepts. Such terms cannot be described in traditional categories due to their complicated semantic structure, and their manifold meaning potential can be revealed only in the particular communicative setting.

In the present article we analyse one of the most frequently applied mechanisms of meaning transformation, namely, semantic shift based on metaphoric meaning extension, used in creation of new terms in several technical fields, such as marine, military, civil engineering, technology, mechanics, telecommunications, and computing.

Metaphoric terms should be investigated using a combination of methods of semantic, pragmatic and semiotic analyses as they may potentially pose communication problems caused by various reasons, such as ambiguity, polysemy, and culture specific associations embodied in the meaning of a term.

Keywords. Metaphoric term, semantic change, meaning extension, term creation, polysemy, symbolic character.

1. Introduction

The advances in technological development determine the central role of technical language in contemporary information exchange, and there is a constant need for nomination of new concepts. Although technical vocabulary is considered to be an open system, i.e. there is no limit for new entries to be introduced, genuinely new terms are relatively rare. Great majority of terms are created on the basis of existing linguistic material, using derivation and compounding. Semantic change can also be considered one of the most productive methods for coining new terms (cf. Veisbergs, 2001:95). The tendency for creation of new terms by means of semantic change has always been a characteristic feature of the technical language, however, at present this tendency has become even more pronounced.

Numerous classifications of the types of semantic change comprising from eight to twelve categories have been developed (Campbell, 2004; Traugott, Dasher, 2002; Ullman, 1962). Only four mechanisms of semantic change are generally used in term building: 1) extension of meaning based on a metaphoric meaning transfer; 2) extension of meaning based on the principle of allusion, which is seen as a form of extended metaphor (cf. Skrebnev, 2000); 3) extension of meaning based on the principle of metonymy; 4) shifts between classes in hierarchical taxonomies (i.e. replacement of a hyponym by a hyperonym and vice versa). Meaning transfer may also occur through a combination of these mechanisms (cf. Iljinska, Smirnova, 2010). It should be noted that semantic change is rarely used in controlled term creation, it is rather used *ad hoc* when a necessity for a new term emerges.

The aim of the present article is to analyse one of the most frequently applied mechanisms of semantic change, namely, semantic shift based on metaphoric meaning extension, used in creation of new terms in several technical fields, such as marine, military, civil engineering, technology, mechanics, telecommunications, and computing.

Numerous classifications of metaphors have been developed (e.g. Saeed, 2004, Lipka, 2002

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[1990], Lakoff and Johnson, 1980). In the present article metaphoric terms are classified in accordance with *the field of reference* (fauna, flora, human body, household items, etc), and *the mechanism of meaning transfer* (based on similarity of form, similarity of function, symbolic representation, etc).

Analysis of semantic shift based on metaphor in the language for special purposes is of considerable theoretical and practical importance, taking into consideration the fact that metaphors often reveal aspects of reality, which otherwise cannot be expressed. The metaphor establishes certain relationships between seemingly unrelated concepts, thus, it may explain the unknown in terms of the known. It can also be treated as one of the ways to enrich the word stock using existing lexical units to denote new concepts.

In the course of centuries a large number of metaphors have been created in the technical language and now they form an indispensable part of the contemporary technical vocabulary. Thus, the lexico-semantic, pragmatic and semiotic analyses of metaphoric terms can yield valuable findings on the mechanisms of meaning extension and transfer in the technical discourse. The results obtained may be used both as empirical data for creation and updating of mono- and multilingual terminological databases and as a medium for further study of the development of terminology in any specific technical domain.

2. Metaphor as a cognitive phenomenon

In order to analyse the terms based on metaphoric meaning shift, it is necessary to establish the theoretical framework for the study of metaphor as a cognitive phenomenon.

Based on the theory of metaphor proposed by Lakoff and Johnson (1980) *metaphor* is defined as "[…] a cross-domain mapping in the conceptual system […]" (Lakoff 1993:203). A conceptual metaphor consists of a target, a source and a mapping between them (cf. ibid). The authors also stress that "Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature" (Lakoff and Johnson 1980:3).

Tendhal and Gibbs (2008) with the reference to Lakoff and Johnson (1999) argue that "[...] metaphor is not merely a figure of speech, but a specific mental mapping and a form of neural coactivation that influences a good deal of how people think, reason, and imagine in everyday life." At the same time, abstract notions are even more frequently mapped in language in terms of metaphors.

Following the recent findings of cognitive linguistics, in the present article we define metaphor as an essential conceptual tool, which consists in a structural mapping from a source conceptual domain onto a target conceptual domain. Using the terminology suggested by Richards (1990 [1936]:93), source conceptual domain in the article is referred to as vehicle, whereas target conceptual domain is referred to as tenor. The more features of the vehicle are used as a tenor in the process of metaphoric meaning extension, the higher is the probability that the term created by means of metaphoric meaning shift will be transparent and comprehensible for its perspective users. In technical texts, terms based on metaphoric meaning extension, further referred to as *metaphoric terms*, may potentially pose communication problems, which are caused by various reasons, such as lack of transparency, intra-disciplinary polysemy, and culture specific associations embodied in the meaning of a term.

As any other lexical items, metaphoric terms possess certain 'meaning potential' defined by Allwood (2003:43) as "[...] all the information that the word has been used to convey either by a single individual, or on the social level, by the language community [...]". Meaning potential of metaphoric terms is even more many-fold, i.e. the information stored in them does not only provide reference to numerous concepts within special fields, but also to cultural, historical, and sometimes individual associations. According to Tarpey, terms based on metaphors can "[…] effectively communicate the most complex of ideas in a simple, elegant manner that transcends the boundaries of language and culture […]" (Tarpey, 2003).

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Metaphoric terms, irrespective of their *degree of lexicalization* (i.e. live, novel, original, active or dead, stock, frozen; cf. Saeed, 2004, Lipka, 2002 [1990]) or their *status* within specialised vocabularies (i.e. *ad hoc* entry, jargonism, professionalism, standardised entry), should be studied only in context to resolve ambiguities caused by their polysemic nature. Arnold (1986:23) states that today "[...] English vocabulary, especially the part of it characterised by a high index of frequency and polysemy, constitutes a constant source for the creation of new terms. The constant interchange of elements goes both ways".

From the point of view of pragmatic theory, the meaning of every lexical item is realised only in a certain context. Evans (2007:7) considers that construction of meaning in context "[…] is not an unpacking of stored information, as assumed in more traditional accounts. Rather, it is a constructive process, in which integration of lexical units involves differential access to the conceptual knowledge which lexical entities potentially afford access […]". Accepting this point of view, it may be maintained that the meaning of any metaphoric term can be understood only in context. Moreover, compound metaphoric terms create their own inner context.

The inner context of a term stores a myriad of associations represented in various meaning components, which convey a range of associative meanings when the term is used in the outer context (context of application). Metaphoric term can be applied both in non-metaphoric and metaphoric sense, denoting a particular general or special concept either provoking easily recognisable, but limited number of associations (non-metaphoric use), or inducing a whole system of multi-layered, even contrasting, associations (metaphoric use).

The theory of metaphoric interaction formulated by Richards in 1936 was developed and modified by Black, who referred to a vehicle as to a "system of associated commonplaces" (Black 1962:40), asserting that the vehicle is normally represented by a *system of associations* and related phenomena rather than by an individual concept. It means that a metaphoric term forms a complex system of shared senses (both metaphoric and non-metaphoric) and related meanings (associative, etymological, folk, cultural, historical, etc.), which can be evoked simultaneously causing polysemy.

For example, the term *beaver tail* (Example 1) may be realised both in non-metaphoric and metaphoric sense. In biology it would literally denote the tail of the beaver. In arms manufacturing *beavertail* (beavertail grip) designates a fore grip. In automotive industry this term denotes an auto trailer, whereas in technology it is used to refer to the main jack. In all three cases metaphoric meaning shift occurred based on the similarity of form, whereas in the latter case it is also the similarity of function.

The associations to the shape and movements of the tail of the beaver induced by the term *beaver tail* create the inner context of this term. In the outer context the field of application would determine the exact meaning of the term and the system of associations it triggers.

It is interesting to note that the term under discussion can be used as a constituent in even more complicated compounds. For instance, in meteorology the term *beavertail* is a part of the term *beavertail antenna* (Example 2), which means a type of radar antenna that forms a beam having a greater beam width in azimuth than in elevation, or vice versa[1]. The metaphoric meaning shift has occurred based on the similarity of form.

Metaphoric polysemy is based on the apparent/obvious or obscure/hidden, but still well-known and understandable similarity between two concepts that belong to different conceptual domains (semantic or thematic fields). Gibbs argues that "metaphor […] plays a major role in our understanding of individual words, especially in making sense of how a single word can express a multitude of related meanings (i.e. polysemy)" (Gibbs 1999:35).

Temmerman notes that language "[…] has a tendency to increase the polysemic character of lexical items […]" (Temmerman 2000:138), thus, polysemy is viewed as a result of meaning evolution, in the process of which many terms acquire additional layers of meaning. Meaning shift based on metaphor occurs on the basis of analogy/similarity ascribing additional meaning

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to everyday objects or frequent phenomena either by omitting or adding one of the meaning components (cf. Platonova 2011:42-53).

Metaphors make the language more complex, and the more complex and the more symbolic is the metaphor, the more polysemous its interpretation is and the more difficult it is to interpret it outside the context. This problem is particularly topical in terminology, where the possibility for numerous interpretations should be limited to the degree possible.

Pustejovsky (cf. 1996:27-28) distinguishes between contrastive polysemy, which is a fully context-dependent phenomenon that can be decoded in the particular communicative setting (context of situation), and complementary polysemy, which relies mainly on the background knowledge of the user.

The most common type of complementary polysemy is metaphoric polysemy, which "[...] derives in most cases from metaphor as a diachronic process [...]" (Blank in Nerlich et al, 2003:268). In general, polysemy is considered to be a diachronic process. For example, Temmerman (2000:153) states that "[...] polysemy appeared to be the synchronic result of diachronically increased informational density".

In the present article two types of polysemy of metaphoric terms are considered, namely, intradisciplinary and cross-disciplinary polysemy. The latter does not pose significant difficulties in communication provided the text belongs to only one technical field. At the same time, intradisciplinary polysemy may be the cause of several other problems such as ambiguity, term doublets, and, eventually, intra-field term synonymy.

The challenges associated with the interpretation of metaphoric terms as well as mechanisms of their creation will be discussed in more detail in the next section.

3. Terms based on metaphoric meaning extension

The meanings of metaphoric terms in the present article are analyzed using a) semantic approach (considering the semantic field and thematic field for concept placement and cross-referencing; componential analysis to identify meaningful components and their role); b) pragmatic approach: the analysis of the context-sensitive lexical items, considering the linguistic and extra-linguistic aspects of their application; c) semiotic approach: (investigating the symbolic meaning hidden within a particular metaphoric term) (cf. Platonova 2010:345).

Metaphoric terms can be classified in a variety of ways, depending on the aspect being considered. In the present research terms based on metaphoric meaning extension are classified in accordance with *the field of reference*, and *the mechanism of meaning transfer*. The semantic and/or thematic fields of reference, namely, *fauna*, *flora*, *human body*, and *household items*, which have been selected for the research, are used as a basis for metaphoric meaning extension in technical language more frequently than others. They represent the most universal systems of symbols inherent in any language, and thus provide a perfect medium for analysis.

Tab. 1 presents a selection of metaphoric terms from various technical fields that are based on similarity of the referent with the form and/or function of some plants.

Metaphoric terms based on floral imagery are mainly formed based on the similarity of form. Tab. 1 could be supplemented with a great number of terms (e.g. *apple-ring fender*, *shower rose*, *fly reed*), but only a few were chosen to illustrate this tendency.

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No	Term	Field	Definition[2]
Similarity of form			
1.1.	Tulip valve	Technology	an intake valve (as on an engine) with a cup-shaped to trumpet-shaped head (MW)
1.2.	Daisy wheel	Computer science	a component of a computer printer in the shape of a wheel with many spokes (FDF)
1.3.	Pine-tree array	Electromagnetism	array of dipole antennas aligned in a vertical plane (FDF)
Similarity of function			
1.4.	Daisy chain	Computer science	a means of connecting devices to a central processor by party-line input/output buses which join these devices by male and female connectors. (FDF)

Table 1: Metaphoric terms based on floral imagery

The concepts that are familiar and are characterised by a wide scope of associative meanings are more frequently used in metaphoric term creation. For example, the concept DAISY is often used in metaphoric term creation (*daisy clipping* (aviation), *daisy cutter bomb* (military), *daisy tip* (medical technology)). The term *daisy chain* is very frequently used in numerous technical fields, for example, technology, mechanics, network technologies, oil and gas technology, electronics, etc. moreover, it has become a source for secondary term formation, that is, it is used in a great number of compounds, e.g. *daisy-chain structure* (security), *daisy chain mine pattern* (military), *daisy chain bus*, *daisy chain logic*, *daisy chain network*, *daisy chain topology* (computer science). It should be kept in mind that the term daisy is generic (umbrella term), it does not denote only one particular species of plants. According to Encyclopedia of Life, the item *daisy* can be used with the reference to 2,770 different plants[3].

Tab. 2 lists metaphoric terms based on the concept BODY. It is one of the most ancient cognitive concepts, that is why it is frequently and extensively used as a vehicle in the process of meaning extension. The extension occurs based on similarity of function, similarity of form, or similarity of both form and function. It may be argued that metaphoric meaning extension may be based on symbolic perception of human body as the pattern for nomination of parts of natural objects, structures or pieces of equipment (*foot of the mountain*, *face of the building*, *leg of the tower*, *cantilever arm* (of the bridge), *finger bit*, etc.) (see Iljinska, Smirnova, 2012 for discussion).

No	Term	Field	Definition
Similarity of form			
1.1.	Cheese head	Technology	*of a screw or bolt* : having a raised cylindrical head (MW)
1.2.	Mushroom head	Technology	obturator spindle plate (M)
1.3.	Cheek plate	Civil Engineering, Mechanics	anchor wall (M)
Similarity of function			
1.4.	Hazardous shoulder	Civil Engineering	roadside, which does not ensure safe traffic (M)
1.5.	Leg of the tower	Civil Engineering	each of the supports of a structure (OD)

Table 2: Metaphoric terms based on the concept BODY

The semantic field BODY is one of the most productive fields for metaphoric meaning shift. For example, the term *head* is widely used in technical language both as an independent unit and as an element in a great number of compounds. Dictionary of Terms in Civil Engineering (DTCE)

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lists *16 meanings* and more than *100 compounds* which contain the component *head*. The main meaning is *top, upper part of a tool or construction*.

The nomination of a term *mushroom head* is based on two fields of reference, both flora and human body. It is used in many fields to denote a mushroom shaped upper part of some detail or mechanism. The term is also used in secondary term formation and has become a constituent of a number of compounds (e.g. *mushroom head bolt*, *mushroom head rivet*, *mushroom head buttress*, etc).

In general, the more ancient is the field of human activity in which a certain phenomenon occurs, the greater number of stock metaphors are used as terms. For example, the thematic field *household items* is a rich source for both primary and secondary term formation because metaphoric terms created extending the meaning of the concepts in this field are based on human perception of the surrounding environment, everyday experience and traditions.

No	Term	Field	Definition
Similarity of form			
1.1.	Scissor platform	Civil Engineering	a work platform which can be moved into place, then raised and lowered to various heights[4]
1.2.	Water-table	Civil Engineering	a projecting ledge, molding, or stringcourse along the side of a building, designed to throw off rainwater. (FDF)
1.3.	Liquid dashpot	Technology	hydraulic shock absorber (M)
Similarity of function			
1.4.	Apron wall	Civil Engineering	in an exterior wall, a panel which extends downward from a windowsill to the top of a window below. (FDF)

Table 3: Metaphoric terms based on thematic field 'Household Items'

The examples presented in Tab.3 illustrate different mechanisms of meaning shift. The terms *scissor platform* and *water-table* are based on similarity of form and are relatively transparent, whereas the term *liquid dashpot* is the least transparent term in the selection. It is based on three concepts, namely, LIQUID, DASH and POT, and two of them, i.e. liquid and pot, are used for meaning shift. Technically, the dashpot is not liquid, but rather contains liquid, thus meaning transfer occurred by means of metonymy, and it is not a pot, but rather a glass envelope, thus meaning extension also occurred as a result of metaphoric transfer.

A vast body of research is dedicated to the study of animal symbolism in folklore, literature and visual arts. Human perception of fauna as an important part of the world has culturally and symbolically determined the extensive use of *animal imagery*, which is one of the major source domains for a great number of metaphoric terms.

Although the use of animal imagery is quite a universal pattern of naming new concepts, metaphoric terms based on one and the same concept can be interpreted differently in various linguistic communities, as metaphors map the images, feelings, values and thought patterns embodied in the culture of the users (cf. Mittelberg et al, 2007:34). However, it may be argued that in technical vocabulary the symbolic aspect of the meaning of faunal metaphors is not always explicit, and the meaning of technical metaphoric terms is less culture dependent.

The most frequently used mechanism of meaning transfer in case of animalistic metaphors is based on the similarity of form: *snake waveguide* (electronics), *bent tail dog* (technology), *camel-back truss* (CE). Similarity of function is also used frequently, but such terms are not always as transparent as the terms based on similarity of form. For example, the meaning of the term *bear punch* (metallurgy), which denotes a portable spot perforator (M), may appear rather vague. Other terms that are based on the similarity of function include *dog anchor*, *bulldog clip*, and *rivet dog* (technology).

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No	Term	Field	Definition
Similarity of form			
1.1.	Camel-back truss	Civil Engineering	a truss having a broken outline for the upper chord, composed of a series of straight segments, taking the humped shape of a camel's back (FDF)
1.2.	Butterfly wall ties	Civil Engineering	wall ties. Twist central is used to prevent moisture travelling across cavity (R&J Builders Hardware)
Similarity of function			
1.3.	Cat's eye	Civil Engineering	small pieces of glass or plastic that are put along the middle and sometimes the sides of a road, to reflect the lights of a car, in order to show the driver where to drive when it is dark (CDO)
Similarity of form and function			
1.4.	Crocodile shears	Technology	shears constructed on the principle of the lever (MW)
1.5.	Spider trunnion	Engineering	Steel trunnion suitable for mounting on any object that must be turned or rotated[5]
Symbolic representation			
1.6.	Spider	Computer science	an automated program that reads Web pages from a Website and then follows the hypertext (HTTP) links to other pages. Spammers use spiders to sift through Web pages to look for (that is, harvest) email addresses (WNWHD)
1.7.	Ant colony optimization	Computer science	a population-based metaheuristic that can be used to find approximate solutions to difficult optimization problems (S)

Table 4: Metaphoric terms based on animal imagery

Metaphoric terms may display features of both cross-disciplinary and intradisciplinary polysemy. For example, the term *cat's eye* is polysemic as it is used to denote different phenomena in different domains such as road building, automotive, wood processing, military, etc.

The term *cat's eye*, which is a road reflective safety device, establishes a clear reference to the ability of cats to see in the dark. The other three meanings used in military slang refer to this quality of a cat as well. This is a good example of approach to research known as biomimetics. Schatten and Žugaj (2011: 39) consider biomimetics to be both *"...the art and science of imitating nature and life for technological solutions…"*. Biomimetics is the source of human inspiration for many innovations. Engineers copy the functions and characteristic features of the animals in developing scientific innovations in different fields of engineering and medicine.

The concept SPIDER has been a vehicle for metaphoric meaning shift in many fields of human communication. The terms based on this concept may be both neutral and connotationally loaded. Tab. 4 presents two terms based on this concept. The term *spider trunnion* denotes a spider-shaped detail, and it is neutral and comprehensible with minimum outer context.

Depending on the culture of the users, the concept SPIDER is perceived as having many different sometimes even contradictory connotations. For example, spider might symbolise either patience and persistence, or malice and evil. In many pagan cultures (e.g. Ancient Egypt, Ancient Greece, the Vikings) spider was associated with the goddess(es) weaving the destiny of humans and gods, whereas in Christianity spider often possesses a negative connotation (cf. Cooper, 2004:156).

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The metaphoric term *spider* used in the field of computing and network security, is based not just on similarity of form or function, but rather on the symbolic representation of the concept SPIDER. The term under discussion is connotationally loaded having an implicit negative connotation. The source conceptual domain or the vehicle of this metaphor is not only *modus operandi* of the spider in nature, i.e. patiently hunting for pray following the signals passed by the cobweb, but also the symbolic perception of the spider as an evil venomous creature capturing unaware pray, typical of the Western cultural tradition. It may be argued that this term is extremely complicated both semantically and symbolically because it maps numerous similar features between the tenor and the vehicle. For example, certain parallels can be established between spider venom and spam, spider web and hypertext links, and spiders and spammers. Thus, it is not always easy to distinguish between a cultural (extended) metaphor and a symbol. Arutjunova (cf. 1990:22-24) states, "Metaphors and symbols are both based on similarity, however, symbols complement language by replacement, they do not compare but identify notions (in Kalve and Načisčione 2010:124)".The term *spider* indeed serves to identify or nominate a new notion rather than simply to establish certain similarities.

Ant colony optimisation, also known as *ant colony optimisation algorithm* is another connotationally loaded term that is based on symbolic representation of a complex concept with a complicated semantic structure. In order to comprehend this term the user not only has to possess the knowledge of the concept ANT, but also to be aware of the principles according to which the colony of these insects is organised. For example, the Chinese identify the ant as "the righteous insect" and attribute orderliness, virtue and even patriotism to it; an alternate symbolism is subordination, especially that of the tireless and dutiful servant (cf. Werness 2006: 9). The connotation of a term *ant* is rather positive than negative, and it is conditioned by a universal perception of an ant as of an industrious orderly creature.

4. Conclusions

The study of metaphoric terms is of considerable theoretical and practical importance, taking into consideration the necessity to investigate the principle of linguistic economy. Metaphoric terms perform several functions: they expand the scope of information communicated and at the same time compress the information. Furthermore, extending the meaning of the existing lexical items, they formalise and fix new meanings by designating new concepts.

Due to their polysemic nature, many metaphoric terms can be interpreted only in the context of application. At the same time, some metaphoric terms create their own inner context, which may trigger a wide range of associations encoded in various components of their meaning.

Metaphoric terms based on different types of imagery (flora, fauna, etc.) possess different connotations, features and properties, and provoke different associations in different religions, cultures and communities. The symbolic systems chosen for the present research are complex in their nature, as they are simultaneously universal and culture-dependent.

Metaphoric meaning extension is a continuous process that promotes the development of the technical vocabulary. However, despite being one of the most productive methods of term creation, metaphoric meaning shift may potentially pose problems in comprehension, standardisation and alignment of terms across the languages.

5. Notes

1 http://glossary.ametsoc.org/wiki/Beavertail_antenna - Accessed on 8 October, 2013.

2 Definitions of all the terms analysed in the present paper are taken from the sources provided in the list of references.

3 http://eol.org/search?q=daisy&search=Go - Accessed on 8 October, 2013.

4 http://www.mediacollege.com/glossary/s/scissor-platform.html - Accessed on 8 October, 2013.

5 http://www.downscrane.com/products/drum/Belt_and_Spider_Trunnions.htm - Accessed on 8 October, 2013.

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Special terms in children's non-fiction books: Choice and presentation

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Abstract. This contribution deals with the way terminology is introduced in non-fiction books for children. The focus is on the choice of terms introduced, their difficulty, their emotional impact and the way in which they are displayed in the text.

Keywords. Terminology, non-fiction books for children in German, terminology and illustrations, terminology and emotion.

> "You will learn more new vocabulary here than you will in your language classes."
>
> (My biology teacher at the start of grade 11)

1. Introduction

Non-fiction books for children are an important segment of the book market. Some are read purely for enjoyment, some look as if they were rather meant to make parents happy. Be that as it may, the huge number of books published by almost every publishing house for children's books testifies to the fact that there is a demand for these books.

The non-fiction book for children has diversified considerably over the years. But at a basic level of diversification, we find those which follow a narrative alongside encyclopedias and picture-oriented publications. This means that the following dictum holds true (and not just in a German context): "Im Prinzip baut die bunte Vielfalt der Sachbücher für Kinder und Jugendliche auf den Grundformen des Johann Amos Comenius und Joachim Heinrich Campe auf…" [Basically, today's variety of non-fiction books for children and teens is based on the pioneering works of Johann Amos Comenius and Joachim Heinrich Campe.] (Ossowski 2005: 672) And indeed, those two pioneers offer almost every way of dealing with terminology we find in children's non-fiction books today: Campe makes terminology part of his narrative, Comenius uses pictures and short phrases.

Terminology does necessarily play a role in non-fiction books, even if they are addressed at young schoolchildren. It is simply part of the knowledge transferred. We all know that scientific discourse would be cumbersome without terminology.

At the same time, terminology can be difficult and complicated. Many terms, particularly from the sciences, are of Greco-Latin origin and may be longish, difficult to decipher and to memorise and even more difficult to pronounce. Therefore, some authors of non-fiction for children try to avoid terminology and explain things in simple everyday language. This is easiest where pictures are used for explanation, as the text can point to objects in the picture without actually naming them.

This approach undoubtedly has its merits. It is most useful where the authors try to interest children in a topic they may approach tentatively. If, however, the subject in question is one children are interested in anyway, terminology should not be avoided. Knowing terminology means that you are a specialist, an insider. One only has to watch children's enjoyment of dinosaur names to testify to that.

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Learning terminology means learning how a certain scientific subject ticks: Terminology helps to bring order into knowledge. It is an important part of ontologies and of knowledge management. One only has to think of Linné's system of animal and plant names which has shaped the way we look at our natural surroundings for centuries. For all these reasons, terminology is important:

> Wo von Technik die Rede ist, muss Fachbegrifflichkeit ihren Platz haben. Sie ausmerzen zu wollen, ist Nonsens. Zumal da, wo Laien technologisches Wissen vermittelt werden soll, wäre solcher Purismus kontraproduktiv. Es gibt keinen Grund, ihnen damit die Chance zu nehmen, wichtige Fachbegriffe zu lernen. [When we talk about technical topics, terminology cannot be avoided. It is nonsense to try to eradicate it. Especially if expert knowledge is brought to non-experts, this kind of purism must be seen as counter-productive. There is no reason to deprive them of the chance to learn important technical terms.] (Bechtel & Thomas 2011: 189)

Schlenkhoff (2012) emphasises the fact that the terminology used has to be explained:

> Fachbegriffe müssen erklärt werden. Redakteure dürfen nicht davon ausgehen, dass alle Anwender mit allen Fachbegriffen vertraut sind. Wenn Fachbegriffe für das Verständnis des Produkts und der Handlungen benötigt werden, kann es sogar sinnvoll sein, diese im beschreibenden Teil der Dokumentation in eigenen Abschnitten ausführlich zu erklären. [Special terms have to be explained. Editors must not assume that all users are familiar with all the technical terms used. If technical terms are necessary for understanding and handling a product, it can make sense to reserve parts of the technical documentation solely for their definition.] (Schlenkhoff 2012: 126)

> Although this statement comes from a handbook on Technical Writing, it can be transferred to non-fiction books for any kind of target group.

Terminology is of course not without its problems. Particularly in children's non-fiction, the terminology used should not be experimental but well-established. Authors and translators should diligently research what terms are available for certain concepts and which of these are generally preferred by the expert community in question. The work of the terminologist is hardly ever appreciated in these quarters, but it is extremely important:

> Gleichzeitig mit der Zunahme menschlichen Wissens in allen Bereichen ist auch der Umfang der Fachwortbestände ständig gewachsen; es kommt immer häufiger zu Verständigungsschwierigkeiten zwischen Laien, aber auch zwischen Experten aus verschiedenen, manchmal sogar aus gleichen Fachgebieten. Es ist daher wichtig, neue Fachwörter möglichst bald nach ihrer Entstehung zu erfassen, ihre exakte Bedeutung zu klären bzw. festzulegen und sie den Interessenten zugänglich zu machen. [As the amount of human knowledge has increased, so has the amount of terminology. Communication problems between non-experts, but also between experts from certain areas increase. Therefore, it is important to document terminology, define terms and make these data available to those interested.] (Arntz et al.: 2004:1)

> The books covered in this paper are in German and deal with topics from the natural sciences. Terminology problems in the humanities are different: all too often, words look deceptively simple (they do not have Greco-Latin origins), but the concepts behind them are extremely difficult to explain. This would need a different research approach. Most of the books chosen here deal with either space or insects. Space belongs to the so-called A-topics, i.e. topics which children are interested in without any parental nagging, which sell well and where we consequently find a wealth of books published (other well-established A-topics are dinosaurs or medieval knights). Insects are not normally listed as an A-topic, but books about insects have become increasingly more popular over the past years.

Although these topics seem to be quite universal, the design and structuring of children's non-fiction books is culture-specific. Japanese non-fiction books for children generally use a fair amount of special language and terminology and tend to present scientific facts at a higher level than their European counterparts do. There is, however, cultural exchange due to the fact that

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many non-fiction books for children are translations. Most of the books picked for analysis in this paper are of either British or German origin.

1.1. Terminology and emotion

At first sight, terminology is cold and sober. It is meant to be precise and functional. This sounds like the very opposite of emotion. But this is not true. If it were the case, scientists would not enjoy coining funny terms such as the strange names based on real people some newly discovered species are graced with (http://de.wikipedia.org/wiki/Skurrile_wissenschaftliche_Namen). Also, science fiction is sometimes used as a basis for terms, particularly in physics. Some terms are pure fantasy terms, for example "googol" which was allegedly invented by the nine-year-old nephew of the mathematician Edward Kasner (http://de.wikipedia.org/wiki/Googol).

Scientific terms stimulate the imagination of experts and non-experts alike. The very sound of scientific terms, their strangeness, their exclusiveness, are in fact attractive. If this were not the case, science-fiction authors would probably put far less effort into the invention of new terms. But terminology systems and the corresponding ontologies build worlds. It is partly through terminology that we enter these worlds. Terminology is fascinating.

However, terminology can also be intimidating. If there are too many new long and difficult words in a text, the text will not look very tempting to the prospective readers. First books on dinosaurs (kindergarten age) will very probably contain names such as Tyrannosaurus, Apatosaurus or Hadrosaurus, which are not too difficult to read. Procompsognathus and the flying reptile Pterodactyl will probably appear in books addressed at readers from age 8 on. Ten-year-old dinosaur experts will not flinch at the sight of longer and more complex names.

Terminology is of course not only the Linné names. Complicated though they are, they can be explained easily by giving the name of plant or beast in question in the reader's mother tongue. Dinosaurs are admittedly a bad example here. Other pieces of terminology need "real" explanations – in words or in pictures. But their emotional side remains.

1.2. Choosing terminology

Terminology avoidance is an important topic in children's non-fiction. The fear that terminology might look difficult rather than fascinating is not unfounded. Children who pick the books themselves because they are interested in the topic will not mind terminology. Children who are "forced" to read the books in question, either by teachers or by well-meaning parents, may be put off by terminology.

As is generally the case with children's books, non-fiction books for children are marketed by age group. Whereas grown-ups tend to take information on the intended age group as advice and buy accordingly, children tend to ignore the age group information given on the cover and pick books by topic (and if they are interested in the respective topic, they will normally have no problems reading books intended for older children). Age group may be a fairly precise indicator for what amount and what kind of terminology the reader might expect.

Publishers often use guidelines or lists which guide the authors towards the use of terminology preferred by the publishing house in question (oral communication; source does not want to be named). Due to these preferences, there are books where terminology is more or less avoided, no matter what the topic is. This can result in fairly imprecise information and will therefore only be done in books for the very young. In some books, the choice of terms looks unreflected. Very complex terms stand alongside childish or simplistic terms used as synonyms (see 5. Terminology Overkill and Avoidance). The one above-mentioned exception where we never find terminology avoidance, dinosaurs, is due to the fact that the poor beasts do not have common names (except for T-rex).

Having said that, it still remains rather difficult to choose which terms should appear in the books and which terms are better left out.

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2. Terminological quality

The quality of terminology in children's non-fiction books is hardly ever subject to debate and does not appear in reviews in mainstream journalism. This is surprising. The revelations in Ahland's dissertation (1998) on the quality of terminology in children's books about the rainforest are quite shocking. Some of the shortcomings listed there are due to the fact that many books are translated into German, without the necessary prerequisites such as setting up a terminology database. At the same time, translators have to work under extreme time pressure. In each publishing house, editors have to supervise the production of books about a huge variety of topics and can necessarily not be experts in every single field.

The shortcomings of terminological quality are also a matter of debate at the meetings of the juries for the Deutscher Jugendliteraturpreis (German Children's Literature Award). Many non-fiction books which look good at first sight do not make it onto the shortlist due to terminology mistakes (Jüngst 2009). This problem is not discussed further in this paper but needs more research and more public awareness.

3. Presentation of terms

Terms can be presented in different spaces in books. Some of these spaces are conventionalised, for example glossaries or information boxes. There is hardly any literature on that which deals specifically with non-fiction for children, but there are books on Technical Writing and journalism which mention terminology and the problems associated. Bechtel and Thomas has a chapter on language for special purposes which deals with the problems specific terminology presents to the journalist (Bechtel & Thomas 2011: 186-188; some rules 190-191). Von Campenhausen, also from the field of journalism, deals with specific terminology and jargon in a few paragraphs (Campenhausen 2011: 85-86). Both concentrate mainly on matters of popularisation and terminology avoidance. Bechtel and Thomas mention rooms for the presentation of terminology in a short aside:

> Fachwörter dürfen nicht inflationär über den Leser hereinbrechen. Und sie sollten niemals ohne ausreichende Erklärung vorkommen. Wo sie [Fachwörter] den Lesefluss stören, lassen sie sich immer noch aus dem Text auslagern: Kästen mit Worterklärungen, ein Glossar, im Internet der Link zu einem eigenen Erläuterungstext – Möglichkeiten gibt es viele. [An avalanche of terms burying the reader should be avoided. Moreover, terms should never appear without an explanation. Where terms make fluent reading impossible, they can be presented in separate spaces: boxes, a glossary, Internet links – the possibilities are endless!] (Bechtel & Thomas 2011: 189-190)

Presentation, terminology avoidance and terminology overkill are thus closely related.

3.1. In the text

One of the most common spaces for defining terms is the text itself. Be it more informative or more narrative, we find definitions of terms which are normally one to three sentences long. These sentences are well-formed and they are not normally highlighted or printed in a different font to make them stick out.

If terms are defined within the text, the author's assumption is that the reader reads the whole book from front to back. The definition appears when the term first appears and is not normally repeated elsewhere in the book. In books dealing with the sciences, narrative structures appear most often in scientist's biographies. This genre is therefore most likely to define terms somewhere in the text.

A book from a different genre, which uses this strategy, is *Mistviecher [Dirty Beasts]* (Bonotaux 2008), a book about insects with many fun elements. Terms are highlighted in red in the text.

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This is true of the names of the insects in German (the Greco-Latin names are shown in brackets) as well as of terms such as "fotophob" [photophobic] (11), "Waben" [honeycombs] (16), "Geschmacksknospen" [taste buds] (22), "Ektoparasitismus" [ectoparasites] (28). "Waben" is used frequently in everyday German, and the meaning of "Geschmacksknospen" can easily be guessed from the two parts the word is made up of. "Fotophob" and "Ektoparasitismus" have to be explained. Unfortunately, words which refer to the topic the next paragraph deals with are also highlighted in red in this book, even if they are everyday words and are presented without explanation. This is not a good strategy and may easily lead to confusion.

Lift off! (Bührke 2008), a book on space travel for children aged 12+, has no glossary and no list of keywords. There are information boxes, but they contain biographies and information about space travel projects (there is one exception on page 23). The book relies completely on an admittedly well-written text in a clear journalistic style. There is no chance to look up a term if it appears a second time and if the reader has forgotten its meaning. On the other hand, the fewer typographic interruptions there are, the easier and the more pleasant the reading. The reader can lose himself in the narration without being reminded that he is reading a book again and again.

Unser Mond [Our Moon] (Jung & Jang 2010) which is meant for young children, was originally published in Korea. Surprisingly, it has hardly any terminological content – this is not typical of children's non-fiction books published in East Asia. The little terminological content we find is part of the narration.

3.2. Boxes

Boxes can appear in books which follow a narrative strategy, but they are more common in books which have a double-page spread structure. The latter was invented by Dorling Kindersley and has become very popular with a variety of publishers all over Europe.

Boxes have several advantages: They stand out on the page and thus give a clear signal that their content might be important. On the other hand, readers can check the first few words and then decide to read or not to read the whole box. The content of these boxes may be repeated on various pages in books which use a double-page spread layout, as these books are not designed to be read page by page and as readers may have missed out on some important information from an earlier box. The size of the box forces the author to write short and snappy definitions of terms. Unsurprisingly, boxes originally stem from journalistic formats such as print magazines.

In *Wissen mit Links: Insekten [e.explore insects]* (Burnie 2008), we find boxes on nearly every double-page spread. They contain extra information, including extra terminology. The book is an example of children's non-fiction which far extends the average grown-up's knowledge of the topic. The boxes contain terms such as "Stylopiden" (43), "unvollständige Metamorphose" [hemimetabolous development] (65), "Winterstarre" [dormant state] (73). There are extra boxes which refer to orders within the insect world. The amount of terminology is enough to make the reader a budding entomologist. There is no glossary in this book, but a good list of keywords.

Another book with information boxes, partly with a terminological content, partly with other content, is *Mein interaktiver Weltraumatlas [Interactive Atlas of Space]* (Scagell 2009). There are boxes about Pluto's excentric orbit (28) or about different kinds of comets (31).

Boxes can be seen as attractive, as Maja Nielsen, a well-known German author of non-fiction for children, states:

> Jungs, die sonst nicht lesen, werden durch meine Bücher zum Lesen gebracht. Selbst wenn sie sich am Anfang noch nicht an den Text machen, werden sie durch interessante Bildunterschriften und Sachinfokästen regelrecht zum Lesen verführt. [Boys who are not normally voracious readers are made curious by the way my books are designed. They may not read the whole text right from the beginning, but interesting captions and fact boxes tempt them into reading.] (Nielsen 2010: 121)

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3.3. Glossaries

In order to use glossaries, children need to be quite competent and experienced readers. They have to know what glossaries are and where to find them. Consequently, glossaries tend to appear in books for readers age 10+ only. From this age group on, books with glossaries are the rule rather than the exception.

Glossaries in non-fiction books for children are not different from those for grown-ups. They are in alphabetical order, normally arranged in two columns, and the words defined in the glossaries are highlighted in the text. The glossaries do not include pictures or other kinds of definition helps.

3.4. Labelled illustrations

Labelled drawings or photographs are a good means of information in the natural sciences. They can show the parts complex things are made up of, or they can show things in relation to each other. At the same time, the labels give the terms needed. Extensive information about visualisation and the use of words and pictures in scientific texts can be found in Ballstaedt (2012).

Mein erstes Buch vom Mond [My First Book about the Moon] (Wernsing 2009) uses this strategy often. However, the way the terms are presented demonstrates quite clearly that pictures alone are not necessarily enough explanation. The picture of a spacesuit (29) is extensively labelled: we do not only find terminology, but short, explanatory sentences. The mix of the terminology used is strange: "Helm mit goldbedampftem Visier" [helmet with a gold-covered visor – the German term actually refers to the way the gold is brought onto the visor] is difficult to understand if you do not have any background knowledge in the material sciences. On the other hand, the childish "Pipi-Beutel" ("wee-wee bag") is used instead of a more grown-up term.

In the insect books, we find drawings or photographs of insects with the body parts labelled. This is standard. The difference lies in the choice of terms for these body parts: German or Greco-Latin (see below).

Labelled illustrations often contain terminology which is not needed in order to read the rest of the book. They can be studied when the child reads the text a second time – or else they can be the object which draws the eye at a first glance.

4. Emotionalised definitions

The emotional impact of terminology as such has been mentioned above. Definitions can be phrased in a way which adds extra emotion. There are keywords such as "amazing", which are used frequently to signal emotion, a practice we know from TV documentaries.

> (1)   Das Verspeisen von Insekten hat sogar einen Namen: Entomophagie. [There is even a special term for eating insects: entomophagy.] (*Bsss*. Bingham et al. 2008: 34)

The term "sogar" marks the term in question as something surprising and worth remembering.

Sometimes, pictures are used in order to emotionalise terminology. In *Mein erstes Buch vom Mond [My First Book about the Moon]*, little mice dancing around a ball-shaped piece of cheese demonstrate how the lunar phases work (Wernsing 2009: 11).

Emotion in non-fiction books for children frequently stems from anthromorphism. The insects talk, they behave like humans, e.g. eat their meals seated at a table or complain about the fact that humans do not like them although they are so wonderful (examples both in Bingham et al. 2008 and Bonotaux 2008). Although it is not the terms themselves which are emotionalised here, it reflects back on the way terminology is presented.

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5. Terminology avoidance and terminology overkill

The quotation from Bechtel and Thomas mentioned in the beginning deals with matters of terminology avoidance. Their demand that terminology should not be avoided as it is part of learning but that terminology has to be explained wherever it appears holds particularly true for children's non-fiction. The practice, however, looks different.

Interestingly, terminology avoidance and terminology overkill can appear in the same book, even on the same page. The following is from *Lupenbuch: Insekten [Viewfinder Insects]* (Woodward 2010). Page 4 shows the body parts of a grasshopper, labelled with the common German names, without any Greco-Latin terms. Page 5, however, has an information box about spiders and scorpions and gives the description of the spider's body parts in the following way:

(2) Ihr Körper hat nur zwei Teile: Prosoma (Vorderleib) und Opisthosoma (Hinterleib). [Its body has two parts: prosoma (head and thorax fused together) and opisthosoma (abdomen).]

This is in marked contrast to the rest of the book where such complex terms are avoided.

The same is true of *Mistviecher* (Bonotaux 2008). On the one hand, the language used is easy to read and offers little complexity. On the other hand, where terminology is used it is highly complex and surpasses the knowledge of an educated grown-up who does not specialise in insects.

Terminological overkill is also manifest where terms are used without any explanations. This is true of *Mein erstes Buch vom Mond* (Wernsing 2009). The following quotation is a typical example:

(3) Bekannt sind die drei „Strahlenkrater" Kopernikus, Kepler und Tycho … Der größte Krater liegt auf der Mondrückseite. Mit einem Durchmesser von 2250 km und einer Tiefe von 12 km ist er der größte bekannte Einschlagkrater unseres Sonnensystems! [The three craters with ray systems, Copernicus, Kepler and Tycho are particularly well-known … The largest crater can be found on the dark side of the moon. With a diameter of 2250 km and a depth of 12 km it is the biggest know impact crater in our solar system!] (Wernsing 2009: 9)

(4) The terms "ray systems" and "impact crater" are not defined anywhere in the text. The accompanying picture shows a meteorite hitting the surface of the moon.

6. Conclusion

This paper could only provide a short overview over some aspects of a fascinating phenomenon. The way terminology is presented in non-fiction books for children, the spaces used and the terms chosen or avoided partly shape the way children perceive a new topic. The impact of terminology itself oscillates between informative and emotive. Terminology can be fascinating as well as frightening. Whatever the case, the importance of terminology in non-fiction books for children cannot be underestimated.

A close look at a number of books reveals that there are numerous inconsistencies in the way terminology is chosen and presented. The question of terminological correctness was not dealt with in this paper, but previous publications testify to the fact that some books contain serious terminological flaws.

There will without doubt be new developments in the field of non-fiction for children, and they will also affect the way authors and publishers deal with the choice and presentation of terminology.

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Changes in law and their impact on comparative legal terminology

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Abstract. Keeping a terminological database up to date is essential. This is particularly important in the field of law, which is subject to continuous changes involving underlying concepts, their designations as well as concept relations. These changes do not only require an expansion of the terminological database, but, very often, also demand a revision of existing and "completed" database entries. Keeping track of changes and maintaining an overview of systems of concepts where the single elements are in continuous alteration is quite difficult, especially as the database grows. This paper focuses on how changes in law have an impact on terminology work, and some strategies are shown that help with maintaining an overview of continuously changing concepts, designations and concept relations. These strategies are annotations in the database as well as graphical representations of concept relations. The application of these methods will be illustrated with examples taken from the legal terminology database at EURAC.

Keywords. Changes in law, comparative terminology, concept relation maps, legal terminology, terminology work.

1. Introduction

Concepts, designations and concept systems are no static units; they are related to the knowledge in the subject field, which changes and grows with new discoveries, technical inventions, new or changed theories or different problems to solve. As a result, new concepts and designations evolve while some of the previous ones become "obsolete". Such changes have a large impact on the related terminology work where we want to keep terminological databases (and other collections of data) up to date, and we have to integrate newly emerged terminological information into the database, and to decide how to deal with the obsolete or changed one.

In this paper, besides explaining how changes in the subject field of law have an impact on terminology work and which main terminological changes result as a consequence, some strategies will be shown that help with maintaining an overview of continuously changing concepts, designations and concept relations. These strategies are annotations on "entry level" and "term level" of the terminological database as well as graphical representations of concept relations. The application of these methods will be illustrated with examples taken from the on-going terminology work (and the legal terminology database) at the European Academy of Bolzano (EURAC), where concepts and designations belonging to the legal system of Italy are compared to concepts in the legal systems of Germany, Austria and Switzerland.

2. Legal terminology

2.1. The subject field "law"

Law is a large subject field, interfering with many aspects of life, and which constantly has to adapt to social, economic, political and also technological change, making *law* an especially dynamic subject field changed and molded by legislation, jurisdiction and regulations. The resulting modifications[1] can be explicit, e.g. when new laws specify what and how other existing rules should be modified, or implicit, when the new laws are not specifically meant to modify

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previous rules, but result in a change of the system because they are incompatible with such existing rules and prevail over them (Governatori & Rotolo 2010).

In order to allow rules to apply to different situations and to adapt to the continually changing reality they are embedded in, the terms used are often not defined, and intentionally abstract terms and phrasing is used, leaving room for interpretation of their meanings (Busse 1999). The same is true for the concepts the terms designate. Note that law has an especially tight relationship with language: law is expressed by language, and it is not always easy to draw a clear line between designation and concept (Arntz 2001: 206). In the field of law, the purpose of concepts is not only to communicate rules, but also (if not foremost) to apply rules, to regulate situations of public and private life and to guarantee legal certainty (Sandrini 1996a: 25); precise intensional definitions in written law would hinder the adaptation of the abstract rule to the single case in question (Sandrini 1996b). Which results in the fact, that there are often no ready definitions for the concepts, sometimes they are intentionally vague, or they are simply inaccurately defined or not defined at all (Šarčević 1997: 240). For instance, though *ente pubblico* (public entity) is a central concept in Italian administrative law, it is still discussed which characteristics make up this concept (and hence, which objects do belong to its extension[2]), and especially which characteristics distinguish public entities from private entities (Corradino 2009: 105). Since there is no single and common definition throughout the subject field, we will encounter different interpretations in jurisprudence on intension[3] and extension of the concept, and definitions which evolve and change in time until eventually a consensus is found.

2.2. Information sources

The main sources in legal terminology for manual extraction of terminological information are legal text books, court decisions, statutes and regulations, especially codes or main statutes regulating the single subdomains. However, these sources are not static, as shall be illustrated using the example of data protection regulations in Italy: Based on the European Data Protection Directive of 1995 (Dir. 95/46/EC[4]), in Italy was enacted a Privacy Act in 1996 (L. 675/1996[5]), which in 2003 was incorporated into and substituted by the Italian Data Protection Code (D.Lgs. 196/2003[6]). This Code again underwent several changes, the most important of which, from the terminological point of view, in 2011 (by D.L. 201/2011[7]) and 2012 (by D.Lgs. 69/2012[8]). Besides, further changes to the data protection regulations are to be expected for the near future, not least due to the planned European General Data Protection Regulation[9]. As changes to central statutes and regulations always affect the whole subdomain and require a review of the relevant database entries, it is indispensable that the version or status of the law consulted (or the consultation date) is indicated in the database (or list) of information sources.

The quick changing pace in the subject field is also reflected by constantly new versions of legal text books. This becomes especially evident in the field of administrative law, a large subdomain of law, where new versions of standard works in jurisprudence are published periodically: So has Elio Casetta's "Manuale di diritto amministrativo" (on Italian administrative law) been issued in 14 editions since 1999, which means that there has been a new version every year; and Hartmut Maurer's "Allgemeines Verwaltungsrecht" (on administrative law in Germany) is currently available in its 18th edition, while the first one was published in 1980 with a new updated edition at least every two years.

Since changes in the field of law happen quite fast, terminologists have to be careful not to use obsolete information sources and to keep information in the terminological database up to date, e.g. replacing contexts taken from abrogated statutes or paragraphs with such that are still in effect.

2.3. Comparative legal terminology

Juridical concepts always reflect the social, political and historical background they're

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embedded in, which means that concepts of different legal systems are in the vast majority of cases not identical (see also Sandrini 1996b), even if the same language is used in the different legal systems as German in Austria, Germany and Switzerland. This also implies that sets of concepts belonging to different legal systems tend to form different concept systems which undergo different changes at different times. Although there is an on-going process of unifying and standardising the national laws of EU member states and community legislation, there are still many differences between the single legal systems; and even European Union directives trigger different changes at different times in the national systems. Directives contain (new) concepts and designations which are implemented and used in the national legislation, but not always fully or in the same way in all member states. If and how designations and concepts are implemented into the national legal system depends on various factors, i.e.: the norms about the relevant topic already present in the target legal system (providing there are any at all), other concepts and designations present in the legal system and especially in the relevant subdomain, and generally, the way new concepts fit into the target system.

An example of how the same supranational concepts can have different outputs at national level is the one of *personal data* in the domain of data protection. For the purpose of the Data Protection Directive 95/46/EC personal data are "any information relating to an identified or identifiable natural person [...]" (Dir. 95/46/EC, art. 2, lit. a). While the designation *personenbezogene Daten* has been adopted (from the German version of the Directive) in Austria and Germany, the concepts the term designates are different in the two national legal systems. While in Germany, similar to the definition in the Directive, the term designates information concerning the personal or material conditions of a natural person (BDSG[10] § 3, clause 1), in Austria, the term designates information relating to a natural or legal person or a group of natural persons (DSG 2000[11], § 4, clauses 1 and 3). These intensional differences result also in different extensions: the "class" of personal data in Austria is wider than the one in Germany, meaning that in Austria certain data are regarded as personal data (e.g. those relating to a legal person) which in Germany do not count as personal data.

2.4. Concept systems in law

"Taxonomy is as important in the law as in any other discipline. It provides the intellectual framework of the law and it makes the law's complexity more manageable" (Mattei 1997). Nevertheless, in law or legal terminology, in contrast to other subject domains, we rarely find large concept systems. This is mostly because, as mentioned before, law is a large subject field covering many, also diversified, subfields, but especially due to the existence of vague concepts and indeterminate meanings of terms, there are many synonyms and often no ready definitions. This again results from rules being created to regulate certain situations, to solve certain problems in society, which is accomplished by following the needs of the special problem and not on basis of a classification of concepts (Sandrini 1996a: 98). However, relevant information does exist, though it is not always presented in an evident and unambiguous manner. Much has been done for instance in classifying the different administrative actions or sources of law (in the national legal systems involved in our work, i.e. Italy, Austria, Germany and Switzerland), but the information is mostly spread over pages and on different legal text books.

In maintaining an overview and for better structuring concepts in the field of law, at EURAC we started building what we call "concept relation maps" (Kranebitter & Stemle 2013) for the four legal systems involved in our work. As explained in more detail in Kranebitter & Stemle (2013), concept relation maps are manually built network graphs (using the free concept mapping software CmapTools[12]) depicting generic concept relations[13] between concepts belonging to a legal system. Concepts are represented by nodes, and generic concept relations are represented by linking lines with arrowheads starting from the superordinate (generic) concept pointing to the subordinate (specific) concept; the corresponding information sources are indicated in brackets (see Fig. 1). If (or better when) changes occur affecting legal terminology, these graphs

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allow to see immediately which concepts may additionally be affected by the change because of their close (hierarchical) relation, and they also allow to track some of the changes in law affecting terminology work (see section 3).

Fig. 1 shows a detail of a concept relation map about *atti amministrativi* (administrative actions) in the Italian legal system with the two terms in boldface representing central concepts in the domain. The figure shows that according to Casetta (2012: 540-541) *atto amministrativo* is superordinate to *provvedimento amministrativo* (administrative measure) and to *atto non provvedimentale* (administrative action which is not a "measure"), while the latter two are coordinate concepts. Furthermore, according to Caringella (2010: 1119) *provvedimento amministrativo* can be subdivided into four subordinate concepts according to the criterion "effects". Note that in our concept relation maps, nodes representing coordinate concepts do not have to be depicted in one (horizontal) line; analogously, if nodes are situated in one line, it does not necessarily mean that the concepts they represent are coordinate or on the same level. The numerous subdivisions in our concept relation maps would provoke that concepts belonging together are depicted overly far apart if the nodes are forced into a line. Therefore, we chose a more compact representation form, as becomes evident in several figures (e.g. in Fig. 1).

In our concept relation maps, nodes (representing concepts) may contain more than one designation as in the example of *atto non provvedimentale* in Fig. 1, or even a definition or description (see Fig. 2) instead of a (single) designation. If additional information on a concept is available, this is indicated by the yellow annotation symbol ([img]) in the concept relation map.
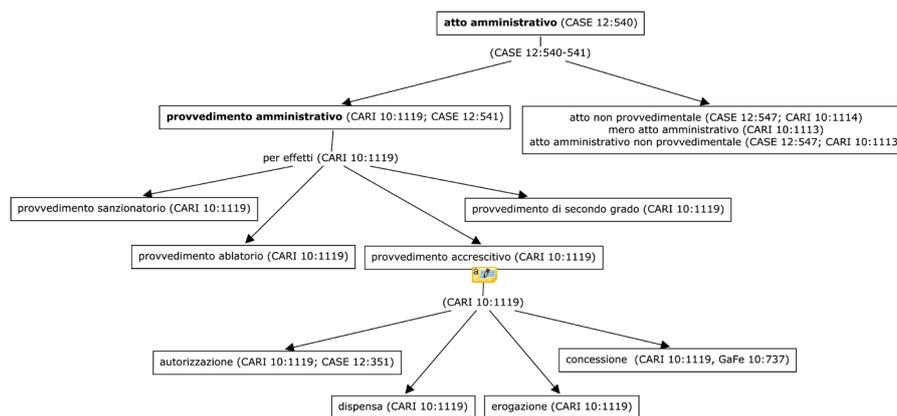
Figure 1: Concept relation map - an example

We build these graphs for each legal system separately as a structured collection of the relevant information found so far, emphasizing also conflicting relations, as explained in Kranebitter & Stemle (2013). Currently they have the (only) purpose to facilitate our on-going terminology work helping to keep an overview on concepts, designations and concept relations in the different legal systems. However, they are intended to be used further on as a basis for creating hierarchical concept systems in law, and as a still further step as basis for even larger concept systems including non-hierarchical concept relations. We do not assume that it will be possible to create concept systems without gaps or conflicts, or that every concept in the field of law can be placed in an overall concept system, but we retain that the systems built on basis of these graphs can be a useful resource for terminologists, translators, students and legal experts and in general for whoever looks for collected and structured information on concept relations in the legal systems of Italy, Austria, Germany and Switzerland.

3. Terminological changes

3.1. New concepts

The most common "terminological change" is represented by new concepts entering an existing

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subject field. In law, new concepts arise when new domains are regulated, as e.g. e-government and e-commerce in recent years, bringing new concepts into the subject domain, many of them being adopted from other domains (e.g. *digital signature* or *public key* and others deriving from information technology). New concepts also evolve thanks to reforms or even smaller changes in the national legal system; in Italy, for instance, a national population register called *ANPR* or *Anagrafe nazionale della popolazione residente* was introduced in 2012. Before that, every municipality had its own population register (and partly still has as explained in section 3.5). Also new theories and classifications in jurisprudence lead to new concepts and hence to new entries in the terminological database. In administrative law, for instance, a variety of classifications (according to different criteria) of public entities and administrative actions have been worked out over the past decades.

However, not every new concept is represented by a term, some concepts are perceived by their definition and are expressed solely by their definition or a description, but no designation has been assigned to them (yet). An example is presented in Fig. 2, which shows two classes of authorisations (*autorizzazioni*) in the Italian legal system (according to one classification of many) which lack a designation: *autorizzazione che rimuove un limite legale all'esercizio di un diritto soggettivo* (authorisation which removes legal restrictions on a certain right) and *autorizzazione che presuppone un interesse legittimo, sostanzialmente attributiva di nuove facoltà* (authorisation which presupposes a legitimate interest and grants new competences).

Figure 2: Concepts represented by a definition/explanation instead of a term

In databases, integrating concepts without designation often constitutes a problem, since concepts are usually represented by a term (or several terms) in a database entry. In these cases, we will have to decide whether it makes sense to enter the definition in the term-field or create a designation ourselves or not to include the information about this concept in the database at all (for the moment). In concept relation maps, however, such concepts will be indicated by their place in the system, represented by a node showing the definition (or explanation) as in Fig. 2, and in this way they are also easy to find again.

3.2. Obsolete concepts

Concepts may also become "obsolete", because they have been explicitly removed from applicable law; such is the case of *INPDAP* (*Istituto nazionale di previdenza e assistenza per i dipendenti dell'amministrazione pubblica*) in Italy, the National Social Security Institute for Public Employees, which has been abolished with effect from 1st January 2012. In other cases, the concept is substituted by another concept, as it happened in the example of the building authorisation in Italy, *licenza edilizia* (introduced in 1942), which was substituted by a different building authorisation, *concessione edilizia* (introduced in 1977), and then again by *permesso di costruire* in 2001 (Garofoli & Ferrari 2010: 831-832).

These concepts are actually not fully obsolete, they are often mentioned in older texts and laws which are still used or in force, they may even appear in new texts referring to situations in the past, and they may still affect legal processes dealing with cases dated before the concept became "obsolete" and therefore still be present in the legal system. Hence, it is not expedient to delete entries representing such "obsolete" concepts from the terminological database, but to indicate that they are out-dated by means of an appropriate annotation[14]. For instance, in the entry representing the individual concept[15] *INPDAP*, we will indicate that the National Social Security Institute for Public Employees was abolished by the decree-law no. 201 of 2011 with effect from 1st January 2012 and its function has been transferred to the (already existing) National Social Security Institute *INPS (Istituto nazionale della previdenza sociale)*:

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(1)   Annotation in the entry on *INPDAP*:

> *Il DL 201/2011 ha disposto la soppressione dell'INPDAP con decorrenza 1° gennaio 2012 trasferendo le relative funzioni all'INPS.*

In concept relation maps, we indicate the concepts' obsolescence status using red lines for the shapes representing the concepts, as for *INPDAP* in Fig. 3. The figure shows a detail of a concept relation map about *enti pubblici* (public entities) in the Italian legal system. In our graphs, nodes representing individual concepts, like *INPDAP*, have rounded edges in order to distinguish them from general concepts[16]. In the annotation represented by the yellow symbol (⬛) in Fig. 3, we indicate again that this (type of) social security institute has been abolished with effect from 1st January 2012. In Fig. 3, the information sources have been omitted in order to guarantee better readability.
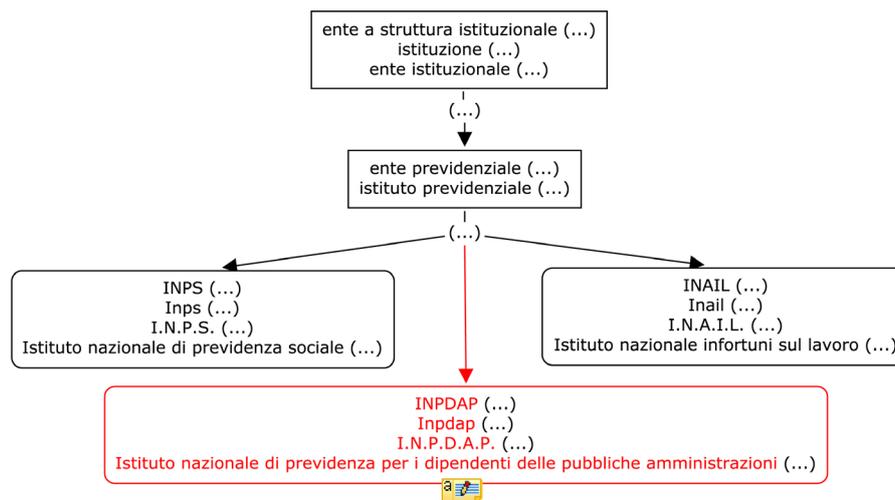
Figure 3: Obsolete concept *INPDAP*

3.3. Obsolete designations

Also designations can become obsolete; this is not only the case when the relevant concept is out-dated, but designations can be replaced with others (explicitly or implicitly), and hence become obsolete, while the relevant concept persists. For instance, in the Italian Data Protection Code of 2003 (D.Lgs. 196/2003) the designation *abbonato* (subscriber) has been explicitly substituted by *contraente* (contracting party) with effect from 1st June 2012 (coming into effect of D.Lgs. 69/2012), while the definition has remained exactly the same. The new term still designates a natural person, legal person, entity or association under contract with a telecommunication service provider (D.Lgs. 196/2003, art. 4, clause 2, lit. f).

As well as entries representing obsolete concepts, obsolete designations should not be deleted from the database, since the user may still need to search for them. However, it is crucial to indicate that they do not represent the concept anymore, and which designation does in their stead and since when. Indications regarding designations will end up in an annotation on the term level; thus, in the case of the term *abbonato* (subscriber), we will indicate that it has been replaced by the term *contraente* (contracting party) with effect from 1st June 2012, and in the same entry the information on the term *contraente* will include the indication that it has replaced *abbonato* with effect from 1st June 2012:

(2)   Annotation for *abbonato*:

> *Sostituito da "contraente" con decorrenza dal 01.06.2012.*
> Annotation for *contraente*:
> *Ha sostituito "abbonato" con decorrenza dal 01.06.2012.*

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In concept relation maps, we use the colour red for obsolete designations as in the example of *abbonato* in the field of data protection, which was replaced by *contraente* in 2012; the relevant information is again indicated in a corresponding annotation (🔖) as shown in Fig. 4. In the figure, the information sources have been omitted in order to guarantee better readability.
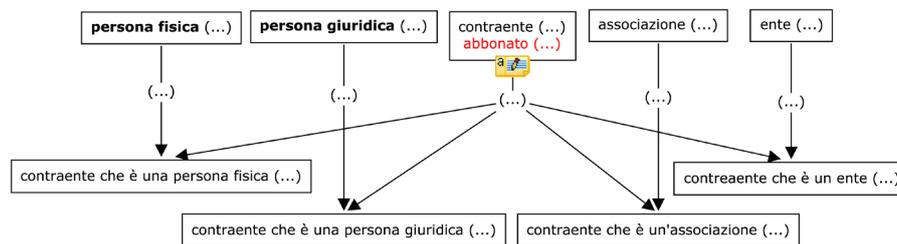
Figure 4: Obsolete designation *abbonato*

Fig. 4, which depicts a detail of a concept relation map about *soggetti di diritto* (legal entities) in the Italian legal system, also shows that the contracting party (*contraente*) can be a natural person (*persona fisica*), a legal person (*persona giuridica*), an association (*associazione*) or an entity (*ente*).

3.4. Changing definitions

We also encounter the situation where the term stays the same, but the definition changes. For instance, in data protection in Italy before 6th December 2011, the data subject, called *interessato*, could be a natural person, a legal person, an entity or an association, whereas, since then, the data subject is always a natural person (D.Lgs. 196/2003, art. 4, clause 1, lit. i). This means that the term *interessato* has been designating two different concepts (at different times) having different intensions and extensions.

When giving information on changed definitions in the database as in the example of *interessato* (data subject), we indicate the old definition (natural person, legal person, entity or association to whom or which the personal data relate) as well as the new definition (natural person to whom the personal data relate), and when the change became effective (06.12.2011):

(3)   Annotation on *interessato*:

Il D.Lgs. 196/2003 (Codice in materia di protezione dei dati personali) definiva "interessato" come "la persona fisica, la persona giuridica, l'ente o l'associazione cui si riferiscono i dati personali". Con decorrenza dal 06.12.2011 "interessato" assume un significato più ristretto, ovvero "la persona fisica cui si riferiscono i dati personali".

If terms are redefined, as in the example of *interessato*, we modify the corresponding concept relation map showing the current status, and link it to another cmap (as the single documents in CMapTools are called) which shows the previous version. In the concept relation map (or detail of such) shown in Fig. 5, the current situation is depicted with *interessato* being subordinate to *persona fisica* (natural person), since according to the current version of the Italian Data Protection Code (D.Lgs. 196/2003), all data subjects are natural persons. In an appropriate annotation (🔖), we indicate that the situation has been different before the 6th December 2012.

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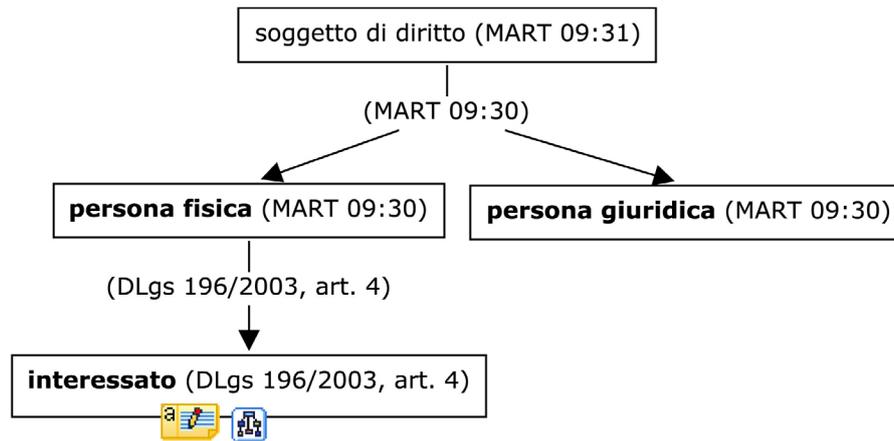
Figure 5: *Interessato* – current version

By clicking on the symbol for linked cmaps (⊞) below the node of *interessato*, the cmap showing the previous version is opened (see Fig. 6).

In Fig. 6 the "old" concept designated by the term *interessato* is depicted with its four subordinate concepts: *interessato che è una persona fisica* (data subject which is a natural person), *interessato che è una persona giuridica* (data subject which is a legal person), *interessato che è un'associazione* (data subject which is an association) and *interessato che è un ente* (data subject which is an entity). Again in red, we indicate which elements are no more in force, marking in black the only one of the former subordinate concepts that is still existing: the data subject which is a natural person (for which the designation *interessato* is used presently). Again, appropriate annotations (⊞) indicate that the situation has changed with 6th December 2012, and the blue symbol below the node of *interessato* (⊞) indicates the link to the concept relation map showing the current version depicted in Fig. 5.
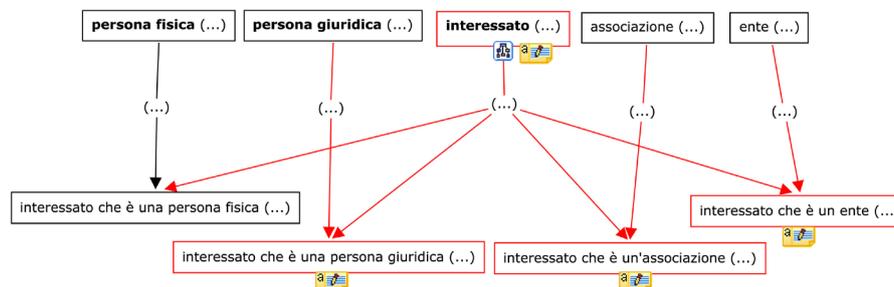
Figure 6: *Interessato* – previous version

Such changes also affect the similarity relationship to concepts belonging to other legal systems. In the case of *interessato*, the new concept (new, because it has different intension and extension than the previous concept designated by *interessato*) is now more similar to the concept of data subject in Germany, called *Betroffener*, which is also a natural person (BDSG § 3, clause 1), but it is more different than the "old" *interessato* to the data subjects *Betroffener* and *betroffene Person* in Austria and Switzerland, which can be natural or legal persons, and in Austria also associations (DSG[17] art. 3, lit. b and DSG 2000 § 4, clause 3). Evidently, the corresponding entries in the database have to be adjusted to the new situation as far as the similarity relationship between the concepts is concerned.

3.5. Future changes

Laws may also give indications about future changes, for instance the Italian decree-law no. 179 of 18th October 2012 states that the new National Population Register *ANPR* is going to gradually substitute the National Index of Population Registers *INA (Indice nazionale delle anagrafi)*, the

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register of Italian citizens living abroad *AIRE (Anagrafe della popolazione italiana residente all'estero)* as well as the respective municipal registers of the Italian citizens living abroad, and the municipal population registers *APR (anagrafe della popolazione residente)* by 31st December 2014 (D.L. 179/2012[18], art. 2).

We find a similar example in the Austrian legal system: with 1st January 2014 (coming into effect of the *DSG-Novelle 2014* published in the Federal Law Gazette *BGBl. I Nr. 83/2013*) the Data Protection Commission (*Datenschutzkommission*), constituting an important concept in data protection in Austria (in the Austrian Data Protection Act), will be substituted by the Data Protection Authority (*Datenschutzbehörde*). The Authority takes over most of the functions of the Commission, but is, among other differences, composed differently.

However, *INA*, *AIRE*, *APR* and *Datenschutzkommission* are not yet "obsolete" concepts, hence we can't indicate them as out-dated in the database just yet, but we can give information that the relevant concepts are going to be obsolete or substituted by others. In the example of the municipal population registers *APR*, in the respective database entry, we indicate that they will be substituted gradually by the end of 2014 by the National Population Register *ANPR*, according to the decree-law no. 179 of 2012:

(4)   Annotation in the entry on *APR*:

Le APR saranno gradualmente sostituite dall'ANPR entro il 31 dicembre 2014 (D.L. 179/2012).

As shows Fig. 7, we indicate future changes in concept relation maps using the colour pink for concepts that are going to be obsolete. Fig. 7 depicts a detail of a concept relation map about public registers in the Italian legal system and shows that *AIRE* (the registers of Italian citizens living abroad), the national register maintained at the Ministry of Interior as well as the municipal ones, and the municipal population registers *APR* are soon out-dated. In appropriate annotations (📇), we indicate that these registers are being replaced until the end of 2014 by the newly introduced National Population Register.
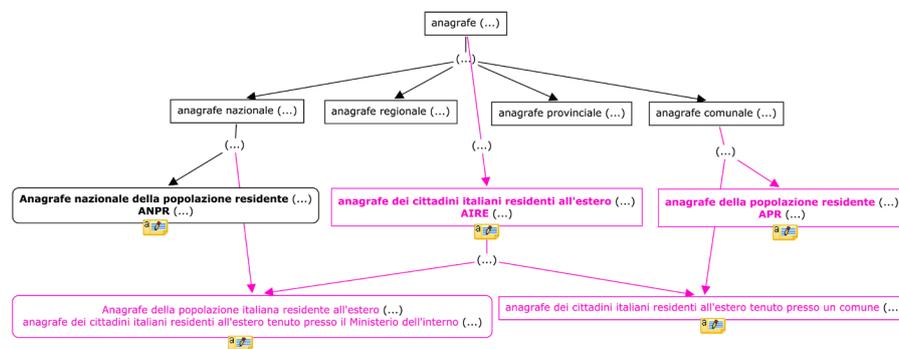
Figure 7: Future changes

4. Conclusions

As we have seen throughout this paper, changes in the subject field of law have notable impact on terminology work. Not only new concepts and designations have to be incorporated in the concept system and added to the terminological database, but we also have to deal with obsolete concepts, which we should try to keep in the database, obsolete contexts, which have to be changed, as well as changing designations and definitions, which require a revision of the relevant database entries and appropriate annotations with information on the changes for the user, for colleagues, but also for the terminologist him/herself.

Concluding, it can be said that, since the subject field is not static, the terminological data collection and concept system shouldn't be static either, and should reflect (to the best possible extent) the dynamics the subject field undergoes. Two strategies which were presented in

this paper by means of examples taken from practical terminology work in the field of legal terminology are annotations on the term and entry levels in the terminological database, and the use of concept relation maps, which proved valuable in our work at EURAC. We are confident that both strategies will be further enhanced in the process of our on-going terminology work, and that they are likely to prove their usefulness also beyond the subject field of law.

5. Notes

[1] On modelling normative modifications (using temporal defeasible logics) see Governatori et al. (2007) and Governatori & Rotolo (2010).

[2] "Totality of objects to which a concept corresponds" (ISO 1087-1:2000, 3.2.8).

[3] "Set of characteristics which makes up the concept" (ISO 1087-1:2000, 3.2.9).

[4] *Directive 95/46/EC of the European Parliament and of the council on the protection of individuals with regard to the processing of personal data and on the free movement of such data.* See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31995L0046:EN:HTML, retrieved on 10.09.2013.

[5] *Legge 31 dicembre 1996, n. 675* (Statute from 31st December 1996, no. 675).

[6] *Decreto Legislativo 30 giugno 2003, n. 196* (Legislative decree from 30th June 2003, no. 196).

[7] *Decreto Legge 6 dicembre 2011, n. 201* (Decree-law from 6th December 2011, no. 201), converted into statute *Legge 22 dicembre 2011, n. 214*.

[8] *Decreto Legislativo 28 maggio 2012, n. 69* (Legislative decree from 28th May 2012, no. 96).

[9] See http://ec.europa.eu/justice/newsroom/data-protection/news/120125_en.htm, retrieved on 09.09.2013 and http://ec.europa.eu/justice/data-protection/document/review2012/com_2012_11_en.pdf, retrieved on 09.09.2013.

[10] *Bundesdatenschutzgesetz* (German Federal Data Protection Act).

[11] *Datenschutzgesetz 2000* (Austrian Federal Data Protection Act).

[12] For information on the software *CMapTools*, see http://cmap.ihmc.us, retrieved on: 11.09.2013.

[13] Hierarchical relation between two concepts where the intension of the subordinate (= specific) concept includes the intension of the superordinate (= generic) concept and at least one additional delimiting characteristic (ISO 704:2009, 5.5.2.2.1).

[14] On the importance of annotations in legal terminology, see Chiocchetti et al. (2009) (text in Italian).

[15] Concept depicting or corresponding to a single object or an object comprising a unique composition of entities being considered a single entity (ISO 704:2009, 5.3).

[16] Concept depicting or corresponding to a set of two or more objects which form a group by reason of common properties (ISO 704:2009, 5.2).

[17] *Datenschutzgesetz* (Swiss Federal Act on Data Protection).

[18] *Decreto Legge 18 ottobre 2012, n. 179* (Decree-law from 18th October 2012, no. 179), converted into statute *Legge 17 dicembre 2012, no. 221*.

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Concept understanding in cognitive linguistics and cognitive terminology science

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Abstract. The referential approach of a language sign has dominated in linguistics throughout the 20th century. Interpretations of concept and meaning were introduced in accordance with the classical way of categorization, independently of human mind and linguistic usage. The well-known principles of terminological description both in the Russian and Western Terminology Schools became one term – one meaning correspondence, term strictness, shortness and the existence of definition.

The shift to cognitive and functional perspective of linguistic knowledge in the 70s of the 20th century shaped the linguistic science closer to human thinking and goals of communication. Linguistics became anthropocentrically oriented, psychologically grounded and aimed at discursive mechanisms interwoven with interlocutors' understanding of the world. Concept in cognitive linguistics is defined as "an operative unit of consciousness" corresponding to a particular sign, it refers to categorization and conceptualization in the on-going process of interaction.

Concept in Cognitive-communicative Terminology is presented as an unstable knowledge entity potentially reified in the new communicative situation. General and specialized knowledge evolving in professional discourse are biased with cognitive mechanisms and embodied cognition of an individual. The variability of concepts in specialized discourse is underlined by human intentions, type of discourse and contextual grounding.

Keywords. Concept, terminology science, Languages for Special purposes, cognitive linguistics, specialized discourse, cognitive models, categorization, conceptualization, conceptual integration, cognitive map.

1. Introduction

A linguistic meaning and a concept are regarded to be the central issues in the language science. The efforts to treat them in every detail are associated with the desire to reveal their peculiar nature and to construe the existing body of content according to the intellectual movement in the history of linguistic thought.

A word meaning is an object of quite a number of interpretations exploring it in diverse ways. Because of a considerable array of interrelated senses it is presented as "the "holy grail" not only of linguistics, but also of philosophy, psychology, and neuroscience […] Understanding how we mean and how we think is a vital issue for our intuitive sense of ourselves as human beings" (Jackendoff 2002: 267). With the development of linguistic science the word meaning is bringing us closer to the understanding of the second very important entity called a concept, with which the word meaning and many other linguistic notions become inseparable.

The concept is fundamental, controversial and problematic of the relatively short history of linguistics as a discipline. It implies the focus shifting to the wide complex of knowledge-oriented sciences.

The objective of my paper is to present a contemporary treatment of the concept in Cognitive linguistics and Cognitive Terminology science, starting with the sources of this ontological entity in structural trend of linguistics and Terminology. Even today we address various approaches

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in the study of this phenomenon, because "[…] we do not know everything about the nature of language and thinking, language and society, language and life" (Alexandrova 2011: 7).

In order to address one of the most important issues playing a significant role in philosophical and scientific inquiry my objective is realized in certain steps, according to which the article is structured as follows.

Firstly, two distinct scientific approaches in linguistic and cognitive literature, according to which the notion of a concept is explicated, are shown. It should be emphasized as far as these tendencies are concerned that both of them and their findings are crucial in explanation of linguistic activity of an individual.

Secondly, discussing each of these perspectives of linguistic knowledge I would like to show the interaction of ideas in linguistic theory and Terminology science development. The last responds to socially and professionally determined interaction, technological and academic challenges.

Thirdly, the target of the thorough investigation of concept nature and its structure meets the requirements of terminological units being part and parcel of English professional communication and language for special purposes. To better illustrate the peculiarities of distinct concepts I have to face perceptual and conceptual sources of naming while working with cognitive models linked with imaging systems being at the disposal in cognitive linguistics.

2. Concept description in traditional linguistics

As is well known, the traditional viewpoint on the relations between some referent, designation and its concept was formulated by the German philosopher Gotlieb Frege and later developed in linguistics as a referential approach to a language sign. Such a description takes into account the conventional relationship between an object in reality, a symbol and its form in accordance with the semantic triangle schema relations.

This framework presupposes an objective world, on the one hand, and human thinking, on the other, that is described as a system of logical relations between various notions ("ponyatiye") in the Russian logico-philosophical tradition and concepts in the Western tradition (Leitchik, Shelov 2003: 86; Wright 2003). The concept is the basic phenomenon represented symbolically inside the mind of a human being and contrasted to a language unit in fig. 1 (based on Evans, Green, 2006; Evans, 2012). The abstract character of the meaning and concept is defined as a set of features according to a classical principle of categorization.

Feature list symbol
stored in the word independently
of the context
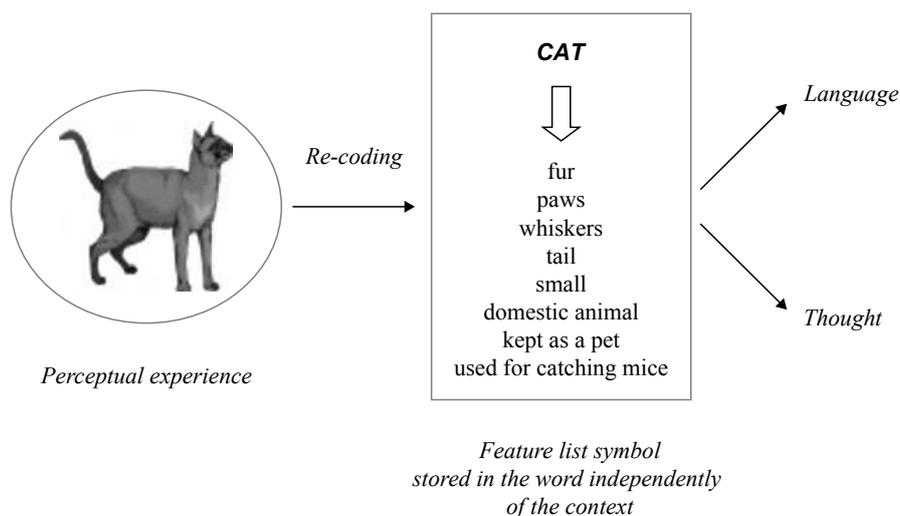
Figure 1. Feature representation of the word meaning "cat" (Evans, Green, 2006; Evans, 2012)

For example, the meaning of the word "cat" is intended by denotation and refers to "any cat" or "the class of cats" outside the particular context. This guiding principle can be illustrated

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by a set of features associated with the separate image. These features include the relatively fixed and stable descriptions of fur, paws, whiskers and tail as elements of our knowledge of the particular referent. The definition of the word in the dictionary as "a small domestic animal with soft fur kept as a pet and used for catching mice" also penetrates into the object function and anchors the word within the class of particular objects. Figure 1 depicts a bundle of semantic features also called semantic markers that are able to penetrate into our understanding of a cat as a unique entity belonging to a class of cats. It occurs that it is difficult or even impossible to adequately characterize some particular sense of a linguistic expression on the basis of such features in a particular contextual environment. Moreover, this approach presupposes singleness in concept – word and word – thing correlations. And some scholars try to avoid the Saussurian belief that "an objective world" is "[…] independent of and regardless of human observation and experience" (Temmermann 2000: 3).

Nevertheless, this approach influenced greatly the development of well-known principles of terminological description both in the Russian and European Terminology Schools.

3. Concept understanding in Terminology science

The findings of the Russian traditional terminological school concern the understanding of a term and concept. They include several points:

  ○ The term is defined as "a special word" (Lotte 1961) or "a word in the specific function" (Vinokur 1939). Later on it was accepted by terminologists that a term may be expressed not only by a separate word, but also by a word-combination;

  ○ Term properties include the following features: one term – one meaning correspondence, paying attention to the strictness of the term, its shortness and the existence of definition (Lotte 1961);

  ○ Terms serve as designations of specific concepts of science and technology, they appear "as a result of knowledge accumulation and appearance of special notions and concepts" (Leitchik, Shelov 2003: 90).

In Western tradition of Wüster and then Felber a concept is regarded as a unit of thought, which "[…] exists independently of the term, the meaning of which it is. A term is assigned deliberately to a concept after due consideration whether this term corresponds to the concept in question" (Felber 1984: 103).

It is necessary to mention that from the study of terms and concepts the Russian Terminology science ("terminovedeniye") turned to the notions of "terminology" and "terminological system". These investigations brought them to the fore of linguistic and terminological studies contrasted to each other. It was stated that terminology corresponds to the result of the naming process, because its language units "are very far from being strictly systematic" (Leitchik, Shelov 2003: 92), while a terminological system occurs "at a rather advanced stage of knowledge development" constructed on the basis of "logical form of world understanding" (Lotte 1961). It explains regularities of objects, processes and other phenomena as "a system of corresponding concepts composed within a subject field", knowledge or activity. It is completely isomorphic to the system of concepts (Leitchik, Shelov 2003: 92).

The Western traditional Terminology Science elaborates that a subject field or a subsection of a field is mentally accessible only if the concept field is structured. This structured concept field is referred to as a system of concepts (Wüster 1991: 9-15), while terminology description should be based on logical and ontological relations.

The main achievements in the seventies of the 20th century succeeded in identifying and describing concepts and terms. They address the idea that "the concept is therefore an element of thinking" (Galinski, Picht 1997) and the better input to the description and definition of the nature of the concept is brought by language (Jackendoff 1993: 16). The simplest concept is

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represented by a word, the more complex ones are revealed on the basis of phrases and sentences. For the better demonstration of the relations between terms and concepts the term "language for special purposes" was elaborated as "a composite set of linguistic phenomena occurring within a definite sphere of communication and limited by specific subjects, intentions and conditions" (Hoffman 1979: 16).

4. The role of perceptual and language information in cognitive and functional linguistics

The shift to cognitive and functional perspective of linguistic knowledge (Manerko 2006) happened at the end of the 70s of the 20th century. It shaped the language science in a new way: it brought its notions closer to human thinking and goals of communication. This perspective is provided by the attention to two main functions. The first is the cognitive function which is presented as "language links with cognitive processes, with all ways of getting, working up, keeping information about the world in its correlation to linguistic forms" (Koubriakova 2004: 37). The second one is the communicative function, it explicates how and in which context a linguistic unit is performed.

In this cognitive-oriented methodological imperative language is described as an essential part of the human conceptual system, which resides in the minds of the speakers of that language (Dirven, Vespoor, 1998: 14). The word is not thought as some kind of objective reality existing "in and for itself", it is shaped by our cognitive function including human perception, ability for categorization and conceptualization, interwoven with interpersonal experiences of human interaction.

Linguistics takes into account all the sides of human factor in the language: its subjective, anthropomorphic and anthropocentric character. Because of this modern linguistic science has become anthropocentrically oriented, psychologically grounded, and aimed at discursive mechanisms intertwined with interlocutors' understanding of the world.

For example, in cognitive linguistics scholars try to show the most relevant features accumulated in the word meaning linked with many other entities in the development of the whole piece of human interaction. The sensory image, which is the basis of the common perceptual grounding of cognition, can be accessed through lexical concepts in certain contextual environment in fiction and professional discourse.

In fiction the sensory imaging is able to outline the subjective experience biased with emotions and feeling of literary heroes. It is constructed on the comparison between the object of observation and the thought of some fictional character presented by the author. For example, in the well-known story "Cat in the rain" by E. Hemingway the image of a small kitten under one of the dripping green tables during the rain is compared with the feelings of the main heroine, who is also uncomfortable in the world. E.g.:

> The American wife stood at the window looking out. Outside right under their window a cat was crouched under one of the dripping green tables. The cat was trying to make herself so compact that she would not be dripped on. (Ernest Hemingway. "Cat in the rain")

This implicit comparison is employed by the aesthetic impact influencing the reader and combined with cognitive and communicative functions.

In terminological discourse the perceptual and other body-based states come to be captured by procedures elaborated in cognitive-communicative Terminology Science. It is necessary to note that the essence of a terminological unit - a word or phrase - and its specific nature is reconsidered on the basis of the wide knowledge accumulation in a scientific text and this is a bit different perspective of analysis employed in cognitive-communicative Terminology, where all traditional issues are viewed differently (Manerko 2007; Novodranova 2007; Manerko, Novodranova 2011).

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5. Methodological procedures in search for concept understanding in Cognitive Terminology science

In general, cognitivists are guided by a large body of knowledge, which language units provide access to through a number of given instances of use. To show how the concepts are different in their nature and how their representation in the mind is associated with a number of cognitive and other mechanisms revealed in professional discourse, I'm going to focus on the features beneath the actual usage of a terminological unit. For this aim all the possible cases of cognitive modeling from simple to complex ones will be the subject of further terminological and of course conceptual description. These examples and illustrations may clarify the concept understanding in cognitive Terminology science of today.

5.1. Cognitive-onomasiological models

Let's take a terminological compound-word "a cat-fish" from a zoological sphere. We get acquainted with its definition corresponding to "a large fish without scales, with feeders round the mouth". Both the definition and the word integrate linguistic (which language appears to rely upon) with non-linguistic (conceptual) knowledge. In this case both elements of the unit in our minds represent "the highly detailed, extensive and structured knowledge" we access to in order to categorize these two entities we encounter in our daily lives.

In the term *cat-fish* our attention is focused on the category entity of fish. It is schematized in figure 2 as an onomasiological basis for naming and sensory-motor area of the brain activity. The common cultural knowledge provides the individual memory processing in the communicative act, for which the most appropriate semantic features are indicated. To distinguish a kind of fish among the class of the same entities the outer appearance in the sign is selectively chosen. It represents the colour of cat's fur and shape of receptors resembling whiskers to narrow the word meaning of the compound. Metaphor unites a source and a target domain in our mental image and it is depicted in the onomasiological sign of the formula.
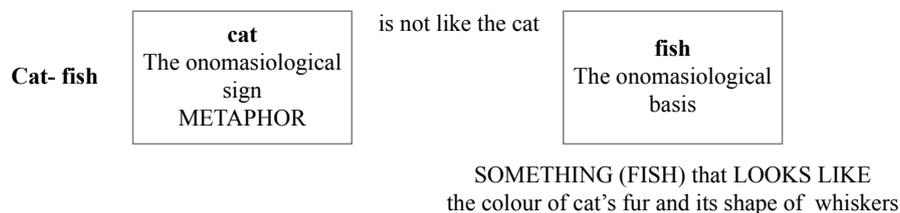
Figure 2. The onomasiological model of "a cat-fish"

But we should remember that the semantic information is as an unstable knowledge entity, it is reified every time in the new communicative situation in particular contexts. Further on different semantic features of this kind of fish are selected, they help to represent various senses, for example:

- the choice among other species of the object class in the texts: *My fish stock includes a mixture of tetras, barbs, rasboras and recently two Pictus catfish* [BNC CGH 842]; *Lots more carp in general lake with tench, crucians, bream and large catfish* [BNC K3X 67];

- the colour of the cat's fur and that of the fish is compared: *From the same family as the Giraffe Cat, there is the African spotted catfish (Parauchenoglanis sp.)* [BNC CGH 392];

- the shape of the taste receptors: *But as catfish are described as 'swimming tongues' with taste receptors all over their bodies, this may mean that other fish are less stimulated* [BNC C95 883]; *Use scavenger fish to clear up any leftover food, large catfish offer the best solution* [BNC FBN 211];

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○ and the place of its habitat: *This catfish is widespread in South America, being found in many of the Amazonian waterways* [BNC C97 926]; *Synodontis schall is a widespread Catfish found in the rivers and lakes of West, Central and East Africa* [BNC FBN 771].

In the other example with the *beavertail* (see figure 3) the sensory image filters out the shape of the body part of the animal (beaver), which is projected through the similar pieces of knowledge. But it refers to the generic situation of the other area of usage, in which we need to compare motor boating features of an engine and especially its form. In the cognitive-onomasiolgical model the referent, that is "something (engine) characterized by its part" presupposes metonymic relations.

	Beaver	tail	SOMETHING (ENGINE)
Beavertail	The onomasiological sign	The onomasiological basis	is like the shape of the body part of the animal
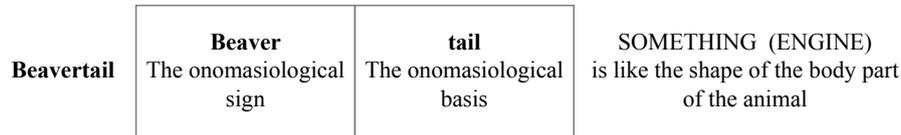
METONYMY + METAPHOR of the whole compex unit

Figure 3. The onomasiological model of the word "a beavertail"

The whole complex is metaphorized in a communicative act, because the interpretation of the model is never truly context-free. We can only actually interpret complex linguistic forms by constructing the uses of such forms to convey the meaning.

It is evident that both terminological units of *cat-fish* and *beavertail* involve a certain number of semantic components pertaining to a relatively stable, social and cultural knowledge, on the one hand, and personal experience of a human being, on the other. Such knowledge is able to reflect mental and psychological resources of our mind. This more or less fixed knowledge is also "dynamic in nature" (Koubriakova 1996: 90), because perceptual states are activated in service of the conceptual system. This kind of "knowledge we draw upon in order to perform a range of other higher cognitive operations including conceptualization, inference, reason and choice" (Evans, 2012: 17). These cognitive operations are aimed at an off-line processing reflected by language means (Barsalou 2012). In the course of communication all these cognitive functions "correspond to a particular sign, which refers to the membership inside some class of things in reality viewed through conceptualization and categorization" (Koubriakova 1996: 90). The dynamic and at the same moment relatively stable process of conceptualization permits Elena Koubriakova to define the concept as "an operative unit of consciousness" (Koubriakova 1996: 90).

5.2. Conceptual integration

To illustrate the nature of the concept in terminological description the method of conceptual integration introduced by Gilles Fauconnier is used. This linguist combined mapping between three kinds of mental spaces: one generic, 2 input spaces, and one blended space (Fauconnier 1999). For the purposes of my analysis this method will be simplified, because it represents two input spaces and one blended space. But conceptual integration is combined with the theory of conceptual metaphor by G. Lakoff, which includes the knowledge about the target and source domains of knowledge about objects intertwined with the ability of a man to associative implications. They are linked with the borrowing of an entity and transformation of the previously known information.

The analysis of the compound terminological unit *ugly duckling stage* from the LSP of dentistry (Dudetskaya 2007: 9) corresponds to "a development stage in the mixed dentition when the central and lateral incisors may be flared, with the crowns distally and with diastema present before the maxillary canine teeth erupt" (Dorland medical dictionary 2003: 1748). The method of conceptual integration includes three stages (Manerko, Novodranova 2012):

1. The extraction of distinctive features of the object in reality is represented in input space 1 of figure 4. The semantic components of the meaning of a well-known tale

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hero "ugly duckling" are presented in the definitions of the language units, e.g.: *ugly* is unpleasant to look at and hideous, *duckling* – a young duck, and *ugly duckling* – plain or stupid child who grows up to be attractive or brilliant;
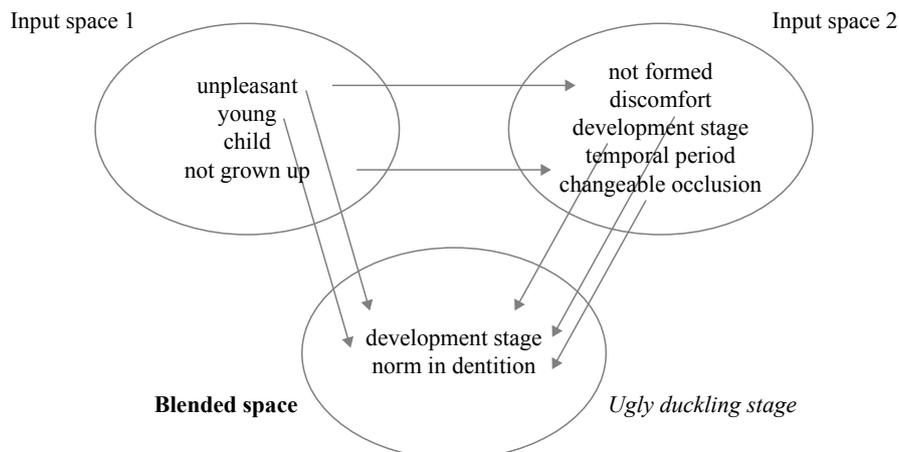

Figure 4. The representation of conceptual integration in *ugly duckling stage*

2. The further development of the conceptual content on the basis of semantic features of both concepts is presented in input space 2. Here we find the features biased with the tale character and physiological development of the child's teeth. This stage of analysis is associated with the description of conceptualization, which is "[…] one of the most important cognitive processes of a human being, it consists in thinking of the appearing information and leading to the formation of concepts, conceptual structures and the whole conceptual system in the mind of a human being" (Koubriakova 1996: 93). The process of conceptualization is closely linked with categorization and leading to stage 3:

3. This stage includes the choice of the language means, when a nominative unit is chosen according to its lexico-grammatical and syntactico-grammatical characteristics tied to the motivation and purpose of naming in some special context.

It is quite obvious that all the previous examples involve the sensory image representation and complexity of compositional meaning in terminological units. Contrasted to perceptual systems of concept representation we should remember that the greater stock of symbolic units in professional discourse encodes the more abstract character of semantics.

5.3. Conceptual domains

Words with the more abstract character of meaning are rather frequent in terminology. They constitute dynamic representations in our conceptual system incorporating semantic properties of terms with the nature of knowledge they provide access to. The concept of such units is represented schematically in our mind.

By way of illustration, consider the well-known example of a *bisect* from mathematics "a divide into two, usually equal parts". Our understanding of this object is relativized with respect to a larger body of knowledge, for example a triangle, without which it could not be properly understood: *The new road will bisect the town* (Cambridge International dictionary 1995: 129). In *diameter* "the (length of) straight line which goes from one side of a round object to another, through the centre of the object" the schematic knowledge is referred to the entire circle with respect to which its meaning is derived, e.g.: *The diameter measures twice the radius, The pond is six feet in diameter* (Cambridge International dictionary 1995: 359-360).

Crucial to the understanding of conceptualization in terminological units is the system of forming images. According to Leonard Talmy these imaging systems accommodate "definite organizing

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principles". One of them is the dependence of conceptualization on a category domain (Талми 2000. Vol. 1:76) or conceptual domain (Langacker 1991: 17). This dependence highlights our human ability to correlate representations of some concepts in our mind in connection to other mental entities for its characteristics. R. Langacker specifies this idea by the following words, "Any facet of our knowledge of an entity is capable in principle of playing a role in determining the linguistic behavior of an expression that designates it (e.g. in semantic extension, or in its combination with other expressions" (Langacker 1991: 4).

To show how it works one more example from geometry – a *hypotenuse* – is readily incorporating a *right triangle*, incoherent without it, but selecting it as a base for the distinctive prominence characteristic of a profile. The expression's semantic value does not reside in either the base or a profile individually, but rather in the relationship between the two provided by the INCLUSION link of the profile into the base (Langacker 1991: 6).
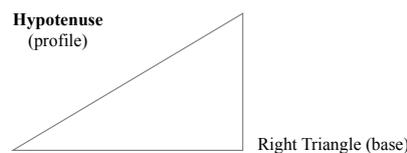
Fig. 5. The image schema of *hypotenuse*

We can easily find that that this dependence upon the conceptual domain is presupposed in any contextual usage: *The sine is the opposite over the hypotenuse* [BNC FMJ 153]; *He spoke of a mathematics of colour, Wittgenstein, a Farbmathematik: one knew saturated red or yellow, once experienced, as one knew the nature of a circle or the square on the hypotenuse* [BNC FET 2174].

Very briefly and generally, this means that the analysis of terminological units from LSP of geometry such as *bisect, diameter, hypotenuse* reveal that word meanings are related to more complex knowledge structures. Their analysis employs the relationship between schematically distinguished image of the object and its conceptual domain based on proposition. The whole process of concept understanding is associated with higher conceptual structuring including abstraction and reasoning. These processes are reflected in the schematized character of imaging represented in the concept and of course specified by the word meaning.

5.4. Perspectivization in image and discourse

Returning to the seminal work of Talmy it is necessary to point out two other elements in the imaging systems. These are "perspectivization" and "distribution of attention" (Талми 1999. № 6). Our Russian scholar Shemyakin introduced two terms similar in content to Talmy's terms in 1935. They are "route maps (карта-путь)" and "abstract map-observations (карта обозрение)" (Manerko, Berdnikova 2011).

Route maps are dynamic and able to represent links between objects. They keep topological space features. Such maps are created and subject to changes in the active interrelation of the person with the surrounding reality. Route mapping is based on perspectivization. According to L. Talmy it "[…] is easier to characterize in terms of visual perception: here we place our "mental" view to observe some designated structure" (Talmy 1999. № 6: 88). The navigation between objects represented by the chain of thematically connected words along the certain path of thought movement becomes transparent to the reader (or listener) in discourse, because each item presupposes category domains as parts of our experience.

The perspectivization of visual images is clearly revealed in the extract from the book by American scientist Richard Feynman "Surely you're joking, Mr. Feynmann". Here is the passage shortened a bit to provide a clearer imagery of the thematic set of units:

> Within a week I was in the cafeteria and some guy, fooling around, throws a *plate* in

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the air. As the plate went up in the air I saw it wobble, and I noticed the red medallion of Cornell on the plate going around. It was pretty obvious to me that the *medallion* went around faster than the *wobbling*.

I had nothing to do, so I start to figure out the motion of the *rotating* plate. I discover that when the angle is very slight, the *medallion* rotates twice as fast as the wobble rate -- two to one. It came out of a *complicated equation*! Then I thought, "Is there some way I can see in a more fundamental way, by looking at the forces or the dynamics, why it's two to one?

Then I thought about how *electron orbits* start to move in *relativity*. Then there's the Dirac Equation in *electrodynamics*. And then *quantum electrodynamics*. …

The diagrams and the whole business that I got the Nobel Prize for came from that piddling around with the *wobbling plate* (Feynman 1995).

In the superphrasal unity of the text the existing perspective of the "mental" view of the specialist in physics is provided. The whole description is the objective situation, in which the sight of the physicist slides from the plate to the medallion of Cornwell University. Words like *plate* and *medallion* easily project two main categories of dishes and symbols Richard Feynman is talking about, with hierarchical and at the same time prototypical relations in each of them. These relations are depicted in figure 6, where each of the mentioned words is specified in relation to the category domain.

Further on in the analysis each of the categories will be represented in connection to the facts, which are described. The whole picture points at the links between the concepts and domains pertaining to them.
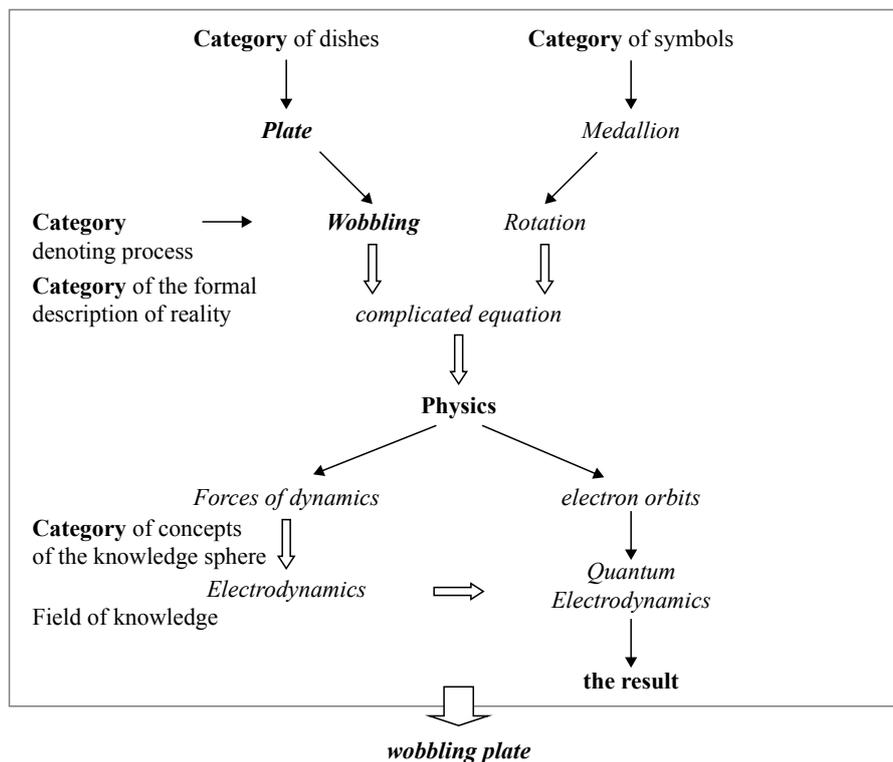
Fig. 6. The set of links and categories explicating the relationships between concepts in the analyzed piece of discourse

The scientist thinks about wobbling and rotating of these objects as physical phenomena. The observation of these processes easily incorporates abstraction and reasoning as the basis of alternative images in the construal of the perceived scene. After that the formal language of equation representations of these movements appears to be more salient than other properties of objects. Each time the brain of the scholar turns to new things trying to distinguish the most necessary categorical representatives at more and more abstract levels of identification, finding

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figure and ground alignments that serve his individual experience organization.

Terminological expressions in the given abstract are linked with each other by inner images and implications. Images are operated by conceptual knowledge associations appearing in the scientist's "mental" vision and point at the complexity of individual thought in the particular situation. The author proceeds to new fields of discoveries in the theory of relativity and then quantum electrodynamics. The most striking in the examined passage is the word-combination *a wobbling plate* in the last sentence, which becomes a term-creating element of discourse.

The terminological wording of this extract provides the evidence that the concept creation that should be understood through the prism of cognitive operations with dynamic elements of human consciousness. The newly created terminological unit serves a window to human thinking within the most prominent categorical entity chosen by the speaker interrelated with other ones.

5.5. Cognitive map as the result of knowledge management in LSP studies

The other type of the imaging system more complicated than the previous ones is the "distribution of attention" (L. Talmy) and "map-observation" (Shemyakin's term). Both designations fix a rich combinatorial system of object descriptions based on their metrical features, simultaneous representation of relations and, location of objects that direct our attention. For the purposes of terminological research it's better to use the term "a cognitive map" involving a more complicated schematic representation of some particular sphere of knowledge. This term is borrowed from cognitive psychology, but in papers of L. Manerko and V. Novodranova and investigations written under their supervision it helps to access knowledge and term understanding for the aims of LSP studies.

Being based on propositions between conceptual elements this framework structure takes into account all the possible relations between pieces of human experience reflected in various sources including dictionaries, encyclopedias, textual and corpora materials. The cognitive map gives the outlook of the domain management and relations based on taxonomy with essential and distinctive characteristics, cause-consequence, propositional and other peculiarities. Here it is necessary to say that the *cognitive map* represents some particular language for special purposes furnished by the corresponding special sphere of knowledge, the characteristics of which are biased with knowledge area at some stage of its development and the importance for the professionally and culturally determined groups of a particular society. In the schematic image we can find "the organization of the system of science, constructed on the most important elements of conceptual system and principles of organization" (Novoranova 2007 (1): 139).

We can find various image representations of LSP in terminology science of today. For example, in the paper of Inga Massalina (Massalina 2009) the conceptual and language picture of the world of the concrete knowledge domain of the navy activity is introduced. The material corresponds to professional norms and adequate usage of language means designated to keep human knowledge and experience according to the purposes of special knowledge organization, its development and communication. The LSP of the Navy is divided into five strata or sublanguages. Every stratum includes specialized language of a concrete group of users or a particular context. These are sublanguages showing aspects of fundamental (theoretical) or experimental naval science, its applied techniques, material production, reconstruction, and of naval information system. They are represented in the framework *horizontally*. Each item of the stratum is also subdivided *vertically* according to the taxonomy of lexical units existing on each level of categorization in the field of professional activity.

The other example of the cognitive map construal was introduced by Tatiana Orel, who examined the terminological system of telecommunications in English (Orel 2005). In her paper it is shown that the cognitive map exists in the consciousness of communicators as a basic knowledge providing the representation and perception of information. The unity of general and scientific world image is based on "[…] all the existing types of relationships between different

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concepts" belonging to 11 categories. Each category accommodates several layers associated with the hierarchical description and cognitive-onomasiological modeling based propositional formulas. This framework is three-dimensional, multi-component, rather complicated in structure. It is characterized by the fuzziness of its borders, flexible organization because of its dynamic character (Orel 2007). This analysis offers a principled explanation for a striking organizational feature of the English system of telecommunications, namely its transformation into 3 subsystems reflecting pragmatic aims of its usage. Each of these subsystems is represented by the frame structures requiring the demands of the creator of telecommunications technologies, its user or the mediator who offers services in this sphere of activity.

To put both examples of the cognitive map construction in a nutshell, it is important to distinguish several successive steps for its representation:

- the marking-out of the key concepts, which shape the subject matter of special knowledge;

- the pointing out of the main conceptual features altogether with the analyzed language signs;

- the uniting of the same concepts into certain categories. This step helps to represent the sphere of knowledge and its links with other conceptual domains;

- the representation of concrete fragments and the whole structure of some science in the form of schemas or frames.

All these steps in the study of conceptual spheres of human consciousness give the opportunity to see the image of the most complicated relations in various parts and whole terminological systems. The concept is presented relative to conceptual category domains, many of which refer to the pragmatic, functional and other factors influencing the discursive activity of a human being. And this is the most obvious contribution of cognitive-communicative Terminology pertaining to the language and cognitive description of knowledge.

6. Conclusions

All the steps of our understanding of concepts and terminological units engaged in professional discourse and LSP studies involve certain essential points. They are necessary to be mentioned as a final observation.

1. Cognitive linguistics introduced a new approach to the understanding of different notions. It brought inter-disciplinarity, widening of the methodological outlook and knowledge ways of description in the on-going process of interaction. It influenced Terminology Science, which made it possible to acquire the status of a scientific discipline and include the vocabulary of LSP as a specific subject matter. The LSP theory is now able to definitely pace its way on the basis of cognitive Terminology Science. It has become possible to illuminate the founding features of LSP allowing to show its nature from the cognitive and communicative point of view.

2. Cognitive Terminology science widens our outlook on the construction of human specialized knowledge. It is important that it takes into account the following: 1) human multi-aspectual understanding of the reality based on the interrelation of general and specialized knowledge evolving in professional discourse and activity field; 2) cognitive mechanisms and operations exploited in discourse, 3) evaluation of the term through the theory in which it works, its reflection in naming and terminological system construction, 4) representation of the embodied cognition of an individual.

3. A concept is a very complicated phenomenon of human consciousness. It is a knowledge entity represented by a number of semantic features potentially existing in human mind, but in Cognitive Terminology science it is described as dynamic in

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nature, because of the changing level of life, science and technology, it is flexible to the range of author's associations necessarily appearing in the process of professional communication. Besides that a concept is an unstable entity enriched by various extra-linguistic, pragmatic and individual factors appearing in discourse. So, in the new communicative situation it is reified according to the needs of the speaker (author) and listener (reader).

4. The variability of concepts in specialized discourse is underlined by human intentions, type of discourse and contextual grounding. The concept may reflect sensory and schematized images, perspectivization in human understanding of reality, the focus of personal attention and its shift to other conceptual domains through metonymy, metaphor and other kinds of associations, framework and network structure and other on-line and off-line cognitive mechanisms influencing its organization. But in all these cases the concept is based on categorization and conceptualization in the mind of human being involved in professionally oriented communication.

5. Terms are regarded to be the main linguistic representatives of LSP. Their cognitive understanding has become the core achievement in cognitive Terminology, where a term is defined as a verbalized result of professional cognition, a relevant linguo-cognitive means of orientation in the professional sphere of communication. The result of cognition in this or that special sphere of knowledge or activity is realized in a term and structures of special knowledge defining its cognitive nature.

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The development of Russian terminology science at the beginning of the 21st century

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Abstract. Cognitive Terminology appeared as an independent science with its own categorical apparatus, methods and procedures of research, discussed issues and tendencies of its development at the end of the 90s of the 20th century in the framework of Cognitive Linguistics.

In the presentation the author will focus on the achievements of Cognitive Terminology during the first 12 years of the 21st century paying attention to the contributions of articles and journals in Cognitive Linguistics and Terminology written by Russian authors. Dissertations also provide a comprehensive and updated discussion on the representation of categories and concepts, formation of various conceptual domains, models, cognitive maps of professional spheres, cases of conceptual integration, the interrelation between everyday and scientific knowledge, and discourse as an object of Cognitive Terminology.

Cognitive Terminology is represented as one of the tendencies of modern terminological science, in which notions of categorization and conceptualization, conceptual modeling and its embodiment on the language level, a conceptual metaphor as a way of term-formation are discussed.

The elaboration of cognitive and informational structure of term, notions of scientific discourse and professional communication, as well as the theory of LSP – these became new spheres, by which Cognitive Terminology enriched Cognitive Linguistics.

Keywords. Cognitive terminology, Russian terminological school, categorization, conceptualization, representation, picture of world, discursive analysis, term, Languages for Special Purposes (LSP).

1. Introduction

The article is necessary to begin with the words of Thomas Kuhn, who articulated them in his famous book "Structure of scientific revolutions, "Each new paradigm of knowledge introduces its own model of formulating a set of problems and particular ways of solving it" (Кун 1997: 11) A cognitive paradigm of linguistic knowledge has become a new epistemic framework, that is connected with human existence, perception and cognition of the surrounding world, human consciousness as well as cognizing activity and of course the role of language in all these phenomena.

During its 30-years of existence cognitive linguistics in Russia has proved to open up a novel vision of linguistic facts, this approach provides us with a new understanding of linguistic picture of the world, mechanisms of categorization and conceptualization, issues of knowledge representation. It also brought about a clear understanding that a cognitive approach should be complemented with the help of discourse analysis and observation of the existing forms, functioning in the language and the new ones, being created 'on-line' (Кубрякова 2004: 23).

Within the framework of cognitive linguistics in the late 90-s of the past century a new trend of cognitive Terminology science emerged (Новодранова 1997; 2000; Манерко 2003; Шеллов 2002). Nowadays it is a distinct scientific trend with its categorical, object of research, methods of analysis, problems and tendencies of development.

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2. The appearance and the development of "Cognitive Terminology"

The term of "cognitive terminology" was introduced for the first time in Russian linguistic school by Larissa Alexeeva in her article "A term as a category of cognitive terminology" (Алексеева 1998). A detailed description of theoretical and methodological issues of cognitive terminology was provided by Larissa Alexeeva and Svetlana Mishlanova in their monograph "Medical discourse: theoretical foundations and principles of analysis" (Алексеева, Мишланова 2002), where the origins of cognitive terminology, main tendencies of its development, principles of analysis applied to linguistic means, as representing the special knowledge are dwelled on. The monograph provides the general outline of cognitive terminology and the analysis of major categories. The authors suggest the scientific discourse should be a subject of cognitive terminology research.

In 2008 a textbook of Elena Golovanova "Cognitive terminology" (Golovanova 2008) was issued. She discusses the key issues of the new trend as distinct and reflecting the state of the art of scientific knowledge. She also points out the difficulties in investigating the dichotomy "language and knowledge", defines the notion of Language for Specific Purposes, and reveals the cognitive essence of the term in correspondence to professional linguistic personality. Processes of conceptualization and categorization, metaphor usage, professional set expressions are also touched upon in the aforementioned textbook.

In the last 12 years of the 21st century cognitive Terminology develops within the framework of cognitive linguistics. All the leading collections of scientific papers include a number of articles on cognitive terminology. First of all a credit line should be given to a collection of papers edited by Larissa Manerko (issues from III to VI that appeared from 2000 to 2009). They focus on the cognitive essence of the term and displaying the cognitive discursive bases of form and organization of terminological systems, functioning in LSP. It was here, where the article of Vladimir Leitchik "Cognitive terminology- the fifth stage of terminology development as a leading discipline on the border of the XX - XXI centuries" (Лейчик 2007) appeared.

A major achievement of the development of cognitive linguistics in Russia is launching series of works "Cognitive investigations of language" edited by Nikolai N. Boldyrev and issued by the Institute of linguistics of the Russian academy of sciences and Tambov state university named after G. R. Derzhavin. Now we have 15 issues that were published from 2009 to 2013. It is devoted to the conceptual analysis of language and the description of conceptualization and categorization processes in various spheres of language, including terminology. The articles among other questions pay attention to types and formats of knowledge, principles and mechanisms of their structuring and methods of cognitive analysis.

Terminology presents an abundant material for testing methods and techniques of cognitive-discursive approach in modern linguistics. And it is fully justified that a special part in a collection of works devoted to Elena S. Kubriakova is occupied by terminological works, where such prominent specialists in terminology as Vladimir M. Leitchik, Larissa Manerko, Valentina Novodranova and many others have presented their works. A journal "Issues of Cognitive Linguistics" (2004-2013) also contributes to elucidating of cognitive terminology aspects, for in each issue there is at least one article devoted to cognitive terminology and scientific discourse.

The appearance of "Encyclopedic dictionary on general terminology" edited by Viktor A. Tatarinov (Татаринов 2006) became a significant event for it included a special article of Valentina Novodranova "Cognitive terminology" (Новодранова 2006). There cognitive terminology science is presented as one of the trends of modern terminology originating from notions being elaborated within the framework of cognitive linguistics: categorization and conceptualization, conceptual model and its representation on the linguistic level, cognitive metaphor, as a means of term-formation, that gives opportunity to interpret the phenomenon under consideration on cognitive and communicative levels in a new way. The fact of including the article into the encyclopedic dictionary gives evidence of accepting the new trend as a separate one by the terminological circles.

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The International Congresses on cognitive linguistics held each 2 years at Tambov State University also play a vital role in developing cognitive Terminology. The last congress in 2013 saw the new cognitive methods and approaches to scientific text and discourse presented. The following questions were touched upon and outlined: interrelation of everyday and scientific knowledge in professional communication, conceptual modeling of scientific texts, intertextuality in scientific texts, scientific picture of the world, scientific discourse. Materials of International congress were issued as a separate collection of papers before 2009 and starting with 2009 they were included into the collection of papers of "Cognitive investigations of language".

Cognitive terminology enriched the cognitive linguistics with elaborated cognitive structure of the term, defined such notions as scientific discourse and professional communication as well as theory of LSP.

The Formation of cognitive terminology is strongly biased with the theory of LSP for the linguistic component of both is terminology, as well as the whole lexis of the particular field of knowledge. That means the language of science, embodying its conceptual content.

 Moreover, it was within the cognitive terminology where a scientific definition of LSP was given and it was defined on a scientific basis. LSP is such a system of linguistic means of general language, that represents the knowledge structures, being formed at a certain period of scientific development and demonstrating the highest possible level of scientific research within some particular period and in particular sphere of knowledge, because of the level of it and its relevance for the particular community (Зяблова 2005). The main function of LSP is to present the conceptual and linguistic picture of the given sphere of knowledge as well as to serve as a professional norm adequately representing the structures of human knowledge and experience, to facilitate the description of the special sphere of knowledge, communication and its development.

Terms are the main linguistic units of LSP. Their cognitive interpretation was provided by cognitive Terminology, where a term is defined as a verbalized result of professional cognition, a meaningful linguo-cognitive means of orientation in professional sphere and a very important element of professional communication. It conceptualises the result of cognition of a special field of knowledge or activity, representing the existing structures of special knowledge that determine cognitive essence of the term. Knowledge structures that are revealed in a term represent an integration of several types of knowledge: the knowledge about a special fragment of the world (encyclopedic, general scientific and special knowledge); knowledge about mental forms of reflecting it in the mind, linguistic representations and knowledge about operating and linguistic units in order to process, keep and transmit knowledge.

A term is a means of accessing the cognitive knowledge bases of specialists, but together with that they fulfill the cognitive function to transmit this knowledge to others. To fulfill the communicative function effectively a term should be convenient in professional speech, it should obey the rules of economy, have a compact form and be adequate to the represented knowledge. This feature becomes evident and transparent in discourse, when as a result of cognitive operations of people involved into communication   this concise linguistic form may transmit rather a considerable bulk of knowledge. Thus, cognitive approach allowed to characterize the morphology and organization of terminological systems not only as a set of terms collected together, but as a complicated net of knowledge, that may be represented with the help of cognitive maps, scenarios, frames, etc. that may give an idea of the whole structure of the science, pinpoint the major stages of its development and appearance of key notions in it, showing various criteria of singing out this or that element within the system, their interrelation, the most important principles of system-organization.

European symposiums organized by International informational centre on terminology and held each two years in different countries are devoted to various aspects of languages for specific purposes. And within the last 12 years the Russian terminologists take part in them. In 2001

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in Vassa (Finland) Larissa Alexeeva and Valentina Novodranova were chairing a colloquium "Cognitive linguistics and terminology". Starting with 2003, the XIV European symposium on LSP in the University of Surrey, with the help of Heribert Picht (Germany) Russian and Western colleagues discuss the terminological problems together within the organized symposiums and round table discussions. In Bergamo (in Italy, in 2005) a joint colloquium "Communication, culture and knowledge" was held. In Hamburg 2007 Larissa Manerko initiated and organized a colloquium "Cognitive aspect of terminological description as a means of understanding specialized discourse". XVII European symposium in Aarhus (Denmark, in 2009) was devoted to cognitive terminology "Methods and Aims: (Re-) conceptualizing LSP research". 12 Russian terminologists came to present at this colloquium, 4 from them came with their Ph.D. students, who underwent the approbation of their candidate dissertations on cognitive terminology.

It is necessary to note that several terminological schools in Russia, such as Kaliningrad, Samara, Chelyabinsk work well within the framework of cognitive terminology. The school in Samara, founded by Valentina Novodranova, is now successfully developing, investigating medical cognitive terminology. The head of this school Elena V. Bekisheva launched the Russian interuniversity collection of papers "Language of medicine" (issue 1 appeared in 2004, the second one in 2008, and the third number was published in 2012). It centres on linguistic and methodological problems of medical terminology and professional communication. The issues of cognitive Terminolgy and broader – the functioning of LSP are intensively discussed on the pages of the journal.

It is important to mention the activity of Chelyabinsk terminological school, uniting the Chelyabinsk branch of Russian association of cognitologists and a department of theory of language of the Chelyabinsk State University. During the last 12 years they were housing the scientific conferences "Languages for Specific Purposes", among the main aims of which are: coordinating the work of terminologists in studying the problems of professional communication, pointing out the role of cognitive-discursive approach to investigating processes there.

The beginning of the XXI century saw a number of cognitive aspects of terminology and professional communication. The most significant are the three international symposiums of "Terminology and Knowledge", organized by a terminological centre of Russian Institute of the Russian language named after Viktor V. Vinogradov. The head of these symposiums is Sergei D. Shelov (2008, 2010, 2012).

The very name of the symposium "Terminology and knowledge" reveals the cognitive aspect of terminology, which makes various types of knowledge objective. The types of knowledge in their turn are connected with different stages of cognition process and formation of the theoretical thought. In the material of this symposium we can find a special part "Cognitive terminology and LSP", that reveals the up-to-date stage of cognitive terminology development.

In 2012 a scientific journal "The issues of terminology" edited by Sergei V. Grinev was established, where again cognitive terminology and LSP got separate parts, dealing with the theory of these two paves of research and practice. In the same year the first issue of the journal collected the prominent terminologists of Russia. In the introductory article "Terminology – past, present and future" by the chief-editor Sergei V. Grinev cognitive terminology is named as the leading trend in studying terms, connected with psycholinguistics, ethnolinguistics, sociolinguistics, linguoculturology, anthropolinguistics, theory of intercultural communications and other borderline disciplines. He also stressed the importance of diachronic studies of terminology, which "keeping up with the targets of cognitive terminology gave a fair possibility not only to increase the reliability of recommendations on organizing terminology and forming new terminological systems but also to find out the ways and peculiarities of scientific thought as developed in diverse countries, acquiring, in this way a huge cultural, social and scientific meaning" (Гринев 2012: 11).

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3. Conclusion

Cognitive terminology is by no means elaborated in dissertations, where the following questions of cognitive terminology are stated:

- Representation of categories and concepts,

- Drawing the conceptual sphere, its conceptual model, cognitive map of science,

- Metaphorization as a means of term-formation,

- Conceptual integration,

- Interaction of everyday general and special knowledge,

- Scientific and naïve picture of the world,

- Discourse as an object of cognitive terminology.

The outline of problems, categorical approach, methods of investigation, as gained from monographs, articles and theses proves the active development of cognitive terminology in Russia at the beginning of the XXI century.

Still not all the questions of cognitive Terminology got their answers:

- the afore-terms (prototerms), featuring the early stages of scientific thought, are not well described;

- the difference between terms and professionalisms need to be thought out theoretically, yet we can point out some attempts to do so in the textbook "Terminology and professional lexis: composition and function" published by Leitchik and Shelov in 2012,

- the principles of forming such special units and nomens are not well defined,

- the terminology in its diachronic perspective still deserves more attention,

- as well as linguocultural investigations, revealing the national components of terminology and peculiarities of national professional thinking also need to be elaborated.

The questions of professional integration, tendencies of distributing the information within the text (figure and ground theory), the role of a linguistic person in case of forming terminology and scientific picture of the world, everyday and special knowledge are also waiting for their solutions.

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Knowledge patterns as indicators of cause-and-effect relations in the domain of maritime safety

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Abstract. In recent years, a number of researchers in fields such as terminology and computer science have worked on developing methods for the automatic or semi-automatic extraction of terminological information from texts. Terminological information is information on terms and concept relations or characteristics. One method used to extract of terminological information is based on the utilization of terminological markers, also called knowledge patterns.

This paper discusses some theoretical and practical issues that arise in the process of extracting terminological information from texts in the domain of maritime safety. In my earlier study I argued that terms and other terminological information must be extracted together, and consequently, a combined model was proposed. In the domain of maritime safety, knowledge patterns proved to be especially productive when searching for associative concept relations, particularly for causal relations.

In this paper, I will show how knowledge patterns can be used for the semi-automatic extraction of terminological information from texts. The textual archive used for the experiment is a collection of maritime accident investigation reports available on the Marine Accident Investigation Branch (MAIB) website.[1] A technique combining the use of seed terms, knowledge patterns, and a corpus tool will be presented.

Keywords. Cause-and-effect relations, knowledge patterns, languages for special purposes, maritime English, maritime safety, terminological information, terminology.

1. Introduction

The methods applied in descriptive terminology work have developed rapidly, and new methods for semi-automatically extracting terminological information from texts have been introduced. Researchers of the semi-automatic extraction of terminological information have had different goals. For terminology work or terminography, the goal may be to assist with domain knowledge acquisition or to construct ontologies (Marshman 2008: 127). To achieve these goals, the extraction focuses on knowledge-rich contexts expressing terminological information, i.e. information on terms and concept relations or characteristics (see e.g. Meyer 2001).

In the field of terminology and computer science, for example, researchers have tried to automatize the extraction of knowledge-rich contexts and terminological information from texts by using terminological markers, also called knowledge probes (Ahmad & Fulford 1992) or nowadays more often knowledge patterns (e.g. Meyer 2001). The studies on knowledge patterns originate from the observation that authors use certain words or phrases to emphasize terminological information. These are linguistic phrases, punctuation marks, or typographic means which indicate terminological information in texts. This paper discusses the identification of a certain kind of terminological information, namely causal concept relations, from texts by utilizing knowledge patterns.

Terms and other terminological information have been recommended to be extracted together, and one combined model for this purpose was proposed in Pasanen (2009). This study aims, firstly, to experiment with this model using a technique which combines the use of seed terms, knowledge patterns, and a corpus tool for the semi-automatic extraction of terminological information from texts. Secondly, a basis will be formed for a further improvement of the methods currently

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used for the extraction of terminologically relevant information, and furthermore, a concept system will be drafted that includes some central maritime safety concepts (cf. Aussenac-Gilles & Jacques 2008: 49).

The improvement of maritime safety is at concern of the entire maritime community worldwide. One way to prevent future accidents and incidents is to report and investigate those which have already happened. However, according to Vepsäläinen and Lappalainen (2010: 31, 40), no guidelines are mutually accepted for investigating and reporting, and the information produced by the parties involved is scattered in different databases. In the future, improvement is expected because the European Marine Casualty Information Platform (EMCIP) has started to collect information from EU Member States. Still, before the platform can fully function, the essential challenge is the question of shared taxonomy and terminology. Vepsäläinen and Lappalainen express the problem in the following way:

> Maritime safety has obviously the essential problem of broad terminology, which has not yet been standardized. This inconsistency can have a negative impact on reporting, because if one does not know, for example, what is meant by a near-miss, it is hard to report such an occasion. […] Furthermore, the inconsistent and situation-specific usage of terms causes a fundamental problem when trying to compare different researches and statistics made on safety management. (Vepsäläinen & Lappalainen 2010: 16)

Causal relations are typical of the field of maritime safety and have been the focus of research for decades. The research is mainly based on mathematical models of risk assessment, such as Reason's "Swiss cheese" model and the Bayesian Network (BN) model (see e.g. Ren, Jenkinson, Wang, Xu & Yang 2008). Bayesian networks are graphical representations of factors and the links between these factors. The relationships between network nodes and their parent nodes are quantified with probabilities. It can be asked, though, how reliable the models and probabilities are if the conceptual base is not concise. Clearly, the field of maritime safety has a strong need for a thorough concept analysis. This paper is an attempt to provide tools for this essential task.

2. Knowledge patterns in the extraction of terminological information

Knowledge patterns have been studied by a number of researchers, mostly in English (e.g. Ahmad & Fulford 1992; Christensen 2000; Feliu 2004; Meyer 2001; Pearson 1998). According to Meyer (2001: 290), knowledge patterns can be of three types: lexical, grammatical, or paralinguistic. The most common type is the lexical knowledge pattern, which involves specific lexical items. A typical grammatical knowledge pattern consists of a noun and a verb. The use of grammatical knowledge patterns requires that the corpus is part-of-speech tagged. This fact restricts the choice of corpus or may mean extra work. Paralinguistic knowledge patterns are punctuation marks or typographic means, for example.

In its basic form, a pattern-based knowledge-rich context includes a term X, a term Y, and a linguistic unit expressing a semantic relation between the terms X and Y (Auger & Barriére 2008: 6). Prototypically, these patterns take the form X + marker + Y, as in the phrase *smoking causes cancer* (Marshman 2008: 125). Commonly, the marker is a verb. Besides verbs, some adverbs, adverb clauses, prepositional phrases, or conjunctions indicate causal relations. Tiranagari et al. (2010: 2) mention, for example, the adverbs *consequently, therefore, thus, so, as, since*; the adverb clauses *as a result, as a consequence*; the prepositional phrases *for this reason, for the reason that, because of, due to*; and the conjunction *because*. However, verbs are reckoned to be the most reliable form of knowledge patterns (Barrière 2001). Therefore, I decided to focus on verbs in this paper.

According to Auger and Barrière (2008: 3), pattern-based semantic relation extraction involves four steps: defining the semantic relation of interest, discovering the patterns which express the relation in the text, searching for instances, and structuring or modifying an ontology or a

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terminological database. This model requires that at least one term or pattern must be known before the search. In my earlier study on Finnish and Russian knowledge patterns, I concluded that in the semi-automatic extraction of concept relations, patterns provide the best results when a term identified earlier is included in the search string, since knowledge probes usually occur in the vicinity of terms (Pasanen 2010: 12). One method is to start with a small number of seed terms and known patterns. The system WWW2Rel (Halskov & Barrière 2008), for example, discovers new relation instances using relation patterns with one argument instantiated and the other blank.

The principle of knowledge patterns is language independent even though the actual linguistic phrases depend on languages. The biggest challenge related to the use of knowledge patterns is the difficulty of formulating the search string due to the ambiguity of linguistic units. Quite often the patterns generate invalid instances, and not every knowledge-rich context contains a pattern. In addition, some of the patterns may indicate different kinds of relations in different contexts. Furthermore, patterns vary from one domain to another and from one author to another. (See e.g. Marsham, L'Homme & Surtees 2005: 168; Pasanen 2010: 6.) Halskov and Barrière (2008: 41) argue that some knowledge patterns tend to be domain specific. Meyer (2001: 296) has noted as well that every domain seems to have a number of domain specific patterns. In spite of the challenges, researchers in the field of terminology and computer science agree that the method of using knowledge patterns for the extraction of terminological information from texts is promising and that the results will improve with the development of information technology. In many specific fields, especially in the field of maritime safety, researchers have focused on the extraction of causal relations due to their importance in the field.

3. Knowledge patterns as indicators of causal relations

According to the ISO standard 704 (ISO 704:2009(E): 26), the concept relation between cause and effect is a kind of associative relation, but no exact definition is given. The standard ISO 1087-1 (ISO 1087-1: 2000 (E/F): 5) says that a causal relation is an associative relation involving cause and its effect. These definitions are not accurate enough for practical concept analysis. In contrast, classifications presented in research reports are compiled for research purposes and are, therefore, finely graded. For practical purposes, such as terminology work or concept analysis, a more general classification is often enough. For the purposes of this study a ''middle-weighted'' definition of a causal relation is used, based on my earlier study (Pasanen 2009). According to that definition, a causal relation between the concepts exists when there is an activity having a purpose and a result or an event having a cause and an effect (cf. Nuopponen 2008; Pilke 2000).

In reality, causal relations seldom are as simple as this; instead, more than one cause and effect often exist in the relation. Causes and effects may also be mutually exclusive. The complexity of the issue can be illustrated by a study by Ren et al. (2008: 8), who propose a framework for modelling causal relationships in offshore safety assessment focusing on human and organizational factors. The framework proposed uses a five-level structure to address latent failures within the causal sequence of events.

Knowledge patterns have been introduced for the automatic detection and extraction of causal relations in computational linguistics (see e.g. Girju 2003) and in terminology (see e.g. Bowker & Pearson 2002: 219; Grinsted 2000: 45–47). As a result of these studies, the English verbs and verbal phrases *to cause, is caused by, result from, result(s) in, lead to, produce*, and *produce by* have proved to be strong knowledge patterns indicating causal relations. Causal relations relate to activities and the phenomena involved in these activities. It is therefore natural that the knowledge patterns indicating this type of concept relations are verbs. Equally naturally, the influencing factor is connected to activities by verbs (*to affect, to improve, to reduce*). In this study, the focus is on the above-mentioned strong knowledge patterns, although it is commonly agreed that knowledge patterns tend to be domain specific (see Meyer 2001:296). The verbs and verbal knowledge patterns applied in this study are listed in Appendix 1.

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4. Material and method

The textual archive used for the experiment reported in this paper is a collection of marine accident investigation reports available on the Marine Accident Investigation Branch (MAIB) website.[1] The MAIB examines and investigates all types of marine accidents that happened to or on board United Kingdom ships worldwide and other ships in UK territorial waters. All the reports cited in this study are available on the website.

On the website, the investigation reports are listed alphabetically. Moreover, the reports have been divided into three different categories: year, vessel category, and incident. The oldest reports on the web resource are from the year 1991. For the purposes of my experiment, I randomly chose the accident type of grounding and the 10-year period starting from the year 2003 and ending in the year 2012. Furthermore, I decided to concentrate on merchant vessels. This category contained 33 reports of grounding accidents. The length of the reports varies greatly. The shortest reports have only 16 pages, and the longest has 85 pages. The reports are written in natural language and have a common structure of a narrative, an analysis of the circumstances, and recommendations. The pdf files were saved as text files, and the 33 text files give a total word count of 348,292 words.

The method utilized follows the four steps of the pattern-based semantic relation extraction model proposed by Auger and Barrière (2008: 3; see section 2 of this article). In this study, the first step, the semantic relation of interest, is the cause-and-effect relation, and the second step, the patterns which express this relation, are those extracted in former studies. Since the scope of this study does not allow presenting the process in full and the aim of this study is to demonstrate the semi-automatic extraction of causal relations, I will focus on just one core concept, the effect concept, *grounding*, designating the incident type under investigation. The effect concept is also the core node in our concept system, which we adopted from Nuopponen's (2008) model. In the searches, the upper level concept *accident* is also applied since the authors of the investigation reports often use this designation to refer to the grounding accident under investigation.

The third step, searching for instances, was conducted using a corpus tool. In this study, the corpus tool used to produce concordance lists was WordSmith 4.0.[2] The software has an advanced search function with which the search can be focused by including additional search strings that are expected to occur in the near context of the main search string. The results of the searches are reported in Appendix 1. The wildcard * represents an omitted word or words.

In this study, the fourth step, structuring a concept system, was conducted utilizing Nuopponen's (2008) model for analysing causal concept systems. The model is based on her former studies on causality and the classification of concept relations. In her study, the focus is on terminological hand-crafting, but she adds that the results may be utilized when working with corpora. The model she suggests builds on a mind map similar to the satellite system model, in which one concept is taken as a core node and point of departure, and other concepts are satellites around the core node. Nuopponen (2008: 18) divides causes into causal agents, producing causes, and explanatory causes. A causal agent is a person or a phenomenon considered to have caused something. Causal concept systems also involve patients, which are concrete or abstract objects affected by the cause and in which the effects appear. Besides these, causal concept systems contain symptoms and consequences. Symptoms belong to the resulting event, product, or state itself as its characteristics or constituent parts. Consequences may follow from the sequence of the causal chain. One interesting part in Nuopponen's concept system is the concept of counteracting causes. These are factors that counteract the causation process. Next, I will report the results of the experiment on knowledge patterns in the field of maritime safety, using the effect concept *grounding* as a point of departure.

5. Results

I started the experiment by producing concordance lists of contexts containing the knowledge

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pattern under investigation without any seed term. This analysis produced a set of 1517 instances. These data are summarized in Appendix 1. The wildcard * represents an omitted letter or letters. Not all of the knowledge patterns were productive. The most productive were the verbs *to prevent, to reduce, to increase, to indicate, to result in*, and *to avoid*. Based on the results of this study, they clearly form the basis of the knowledge patterns which are typical for the domain of maritime safety. The next step was to produce concordance lists containing the most prominent knowledge patterns and the concept *grounding* designated by the term *grounding* or *accident* as its head. Each of these occurrences was then manually analysed to identify the validity of the information. In this paper I pay special attention to the relation between cause and effect as well as the relation between counteracting cause and effect. This categorization of causal relations is adopted from Nuopponen (2008: 22), in which the subcategories of the cause concept are producing causes, explanatory causes, and causal agents (see Appendix 2).

5.1. Producing causes, explanatory causes, and causal agents

In Nuopponen's conceptual model, a causal agent is a person or a phenomenon considered to have caused something (Nuopponen 2008: 18). The first obvious verb to be analysed is the verb *to cause*, even though the knowledge patterns including it were not the most productive. With the aim of searching for causal agents involved in grounding accidents, I applied the search strings *caus* the* and *caused by*, thus excluding the great number of instances containing the noun *a cause*, which was not under investigation in this study. The verb *to cause* was not as productive as expected. The search produced 58, instances and the following two information patterns were retrieved (the emphases in the examples are mine):

$$NP_1 + caused\ by + NP_2$$

(1) He fell asleep as a result of very high levels of *fatigue* **caused by** *the cumulative effect of this irregular working pattern*. (Jambo 2003: 1)

$$NP_1 + caused\ /\ causes + NP_2 + V(inf)$$

(2) *The contact with the seabed* lasted 16 seconds and **caused** *the vessel* to vibrate loudly (CSL Thames 2012: 3)

In 17 out of the 28 instances following the latter information pattern, the verb is in the past tense form *caused* or in another tense referring to the past. This is logical since the investigation reports examine grounding events which happened before the investigation. In 10 instances, the patient concept is the vessel, which is affected by an action or an event, as illustrated by example 2. The instances more often include explanatory causes than direct causes, as illustrated by example 1. Next, the search string including the core term *caused + grounding** was applied, firstly, to test the usefulness of including a term in the search and, secondly, to study whether the direct cause of the grounding accident could be retrieved from the text. The search produced eight instances, and the direct cause is indicated in only two instances. Example 3 is the only case in which the action of the master of the vessel is indicated to be the cause of the accident.

(3) **The grounding was caused by** the master electing to deviate from his planned route […] (Balmoral 2005: 17)

The knowledge patterns *caus* the* and *caused by* appeared to be productive when searching for producing or explanatory causes, in other words, actions or events as well as states, conditions, or properties which have contributed to grounding accidents. However, the patterns mentioned were not productive when searching for the causal agent, i.e. the person or phenomenon having caused the accident (cf. Nuopponen 2008: 18). The instances induced in the concordance search indicate that besides the core concept *grounding*, the upper level concept *accident* and the concept *damage* might also give fruitful results if they were included in the search string together with the verb forms.

The other verbs generally regarded to be good indicators of a causal relation are *to produce, to*

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result (in), and *to lead (to)*. First, I conducted searches with the search strings *produce*, produced by*, and *producing*. The first two knowledge patterns were productive, but the instances did not give information related to the causal relation under investigation. The search employing the knowledge pattern *produc** and the core term *grounding* did not produce any hits. The collocates *chart, documentation, annual schedule, instructions*, and *signs* refer to navigational aids instead of causes, albeit navigational aids play an important role in maritime safety. The same holds for the knowledge patterns *result* in* and *result* from*. The first search was productive but did not give the kind of information which was expected. In one third of the instances the verb collocated with the noun *recommendations*, indicating that something has resulted in a recommendation. This indicates that many instances are related to the structure of the corpus instead of the expected causal relations. The search strings *leading up to* and *leading to* were not very productive, producing 26 and 36 instances respectively, but the information retrieved was closely connected with the core concept *grounding*.

The knowledge pattern *leading up to* produced 26 instances. In eight instances the pattern is the one illustrated in example 4:

(4)　　Events **leading up to** the grounding (Berit 2006: 4)

This similar pattern can be explained by the structure of investigation reports, in which the phrase is part of a title. It must be noted that the title implies that more than one event caused the grounding. Although in conceptual analyses an event is a concept without human involvement, in investigation reports the role of the human element is included in chapters with this title. For the purposes of the concept analyses these instances are only partly valid since the cause is hard to find in the context.

The knowledge pattern *increas** was productive with 191 instances, including a number of instances which include the state, condition, or property necessary for the final event, thus giving explanatory causes to the effect concept of grounding. The search can be narrowed by including the noun *risk* in the search, since it is often connected with the verb:

(5)　　That the turning basin was not made available to Dieppe, has avoidably **increased the risk** to the vessel when departing Newhaven. (Sardinia Vera 2005: 36)

The nouns *speed, wind, fatigue*, and *distance* also collocate with the verb *to increase*. The verbal knowledge patterns investigated were productive when searching for explanatory causes but not for direct causes. This can be explained by the fact that in most cases not just one but a number of states, conditions, events, or actions can be named to have caused the accident. Besides producing causes, explanatory causes, and causing agents, counteracting causes are also important for the concept analysis of maritime safety concepts.

5.2.　Counteracting causes

Counteracting causes may be actors, actions, events, or circumstances, in other words, almost any kind of concept which counteracts the process (Nuopponen 2008: 21). The verb form *avoided* proved to be a strong knowledge pattern indicating the relation between a counteracting cause and the effect concept *grounding*. The search string *avoided* produced 31 instances, which are all valid. Seventeen of them have one of the following information patterns:

　　　　NP + would/could have been avoided + if ACTION or

　　　　if ACTION + NP + would/could have been avoided

Example 6 illustrates the latter pattern. The NP refers to the core concept *grounding*, which is sometimes indicated by the words *accident* or *situation*.

(6)　　Had the original plan been followed, *this accident* **would have been avoided**. (Balmoral 2005: 14)

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It should be noted that this pattern is misleading since the counteracting cause did not actually occur. The effect concept would not have happened had the counteracting cause been realized. Still, for the future and for better maritime safety, it is important to know how similar incidents can be avoided. In the rest of the instances the verb takes the form *is to be avoided, to be avoided*, or *should be avoided.* These instances look forward, suggesting actions to be avoided to prevent similar incidents from happening.

Besides the verb *to avoid*, the verb *to prevent* is a natural candidate for the knowledge pattern for the causal relation between the counteracting cause and the effect. I first produced a concordance list with the search string *to prevent*. The knowledge pattern candidate was productive, producing 90 instances. However, due to the nature of the corpus used, in 30 instances this search matched a typical sentence employed in the analysis section of investigation reports, as illustrated by example 7:

> (7) The purpose of the analysis is to determine the contributory causes and circumstances of the accident as a basis for making recommendations **to prevent** similar accidents occurring in the future. (e.g. Berit 2006: 19)

Surprisingly, the knowledge pattern *to prevent* produced information about actions directed towards preventing explanatory and productive causes from happening (see example 8). This information is valuable, since presumably it is easier to affect the causes than the grounding event.

> (8) Riverdance's anchors could have been used to attempt **to prevent** the vessel being carried closer to shore on the still rising tide, [...] (Riverdance 2009: 51)

The verb *to increase* is a knowledge pattern for the cause concept. Likewise, the verbs *to decrease* and *to reduce* are knowledge pattern candidates for the counteracting cause concepts. The corpus search with the search strings *reduce*, reduced*, and *reducing* produced 201 instances, the past tense verb form being the most productive.

6. Conclusions

The method suggested here for the semi-automatic retrieval of conceptual information from untagged texts using knowledge patterns, seed terms, and a corpus tool was developed as a method for conceptual analysis. A technique combining the use of knowledge patterns and a concept model was shown to be well applicable when building concept systems or ontologies in the field of maritime safety. However, a technique combining the use of knowledge patterns and seed terms was not as productive as expected. In this aspect, more research is needed. In some respects the results were biased due to the corpus used. Firstly, the size of the corpus was not large enough to produce a sufficient number of valid instances. Normally, precise knowledge patterns which produce solely valid instances are not productive. Therefore, a large corpus is needed for their effective use. In addition, the features of the software could not be fully utilized, for example, cluster lists were not always produced. Secondly, the structure of the investigation reports and the titles follow well-established patterns, which are demonstrated in the concordance lists. In spite of these shortcuts, the method can give a new perspective on maritime safety concepts.

The results of the study give no support to the claim that accidents are often attributed to single causes in investigation reports. Only in rare cases were direct single causes given. Instead, explanatory causes were most often mentioned. This implies that accidents are caused by a series of errors or a combination of them. Regrettably, the method is not able to reveal the chains of actions or responsible parties semi-automatically, which is the interest of researchers in the field.

The experiment also raised the question of the uncertainty connected to information extracted using knowledge patterns. The importance of this phenomenon has been noted in the processing of cause-effect relations in particular (see Marshman 2008). The ultimate usefulness of

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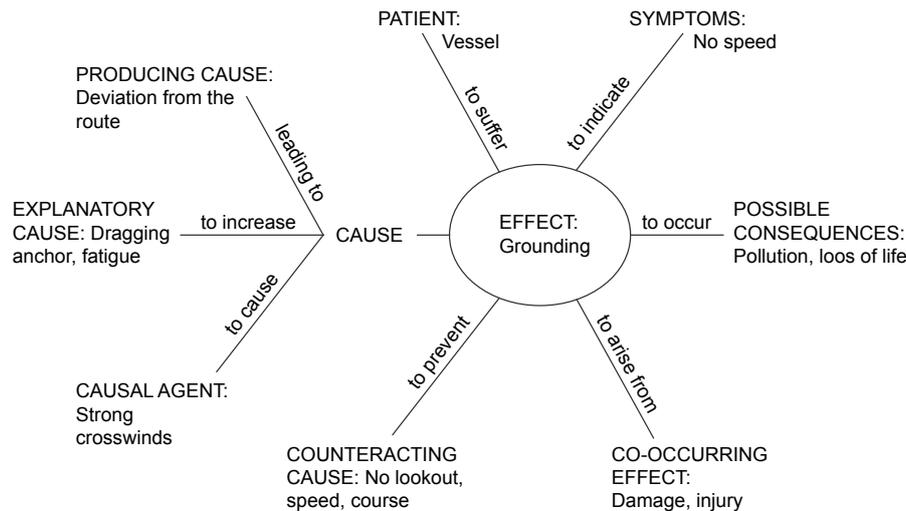
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information may be indicated by textual elements such as the quantification of items linked in a relation, lexical indicators of hedging, modal verbs, or the negation of a potential relation. Some sentences in the corpus had textual elements indicating uncertainty, and undoubtedly, this phenomenon should be further studied.

7. Appendices

Appendix 1: Knowledge patterns investigated.

Search string	Frequency	Collocates	Clusters
affect*	45	safe, ability, navigation	not affected the
to avoid / avoiding / avoided avoid* + grounding*	49 / 10 / 31 16	action, grounding, accident	could / would have been avoided, action to avoid
cause* the / caused by caused + grounding*	28 / 30 8	vessel	caused the vessel
contribut* to the	40	accident, directly, safety, issues, fatigue	safety issues directly contributing to the accident
decreas*	19	depth, manoeuvrability, risk, wind, speed	
improve / improving / improved	30 / 24 / 19	safety	with the aim of improving the safety of
to increase / increases / increased / increasing increase* + risk	21 / 5 / 101 / 25 12	speed, risk, wind, fatigue, distance, vessel, master, knots	an increased risk of
indicate* / indicating	152 / 14	vessel, master, chart, fatigue, evidence, lack, need, data	to indicate / indicated / indicates that the
leading up to / leading to / can lead to /did not lead to leading (up) to + grounding* / accident	26 / 36 / 8 / 1 21 / 8	during the period, throughout the period, the latter stages	leading up to the grounding, leading up to the accident, leading up to the events, leading to the grounding, leading to recommendations
occur / occurs / occurred / occurring	17 / 3 / 98 / 41	accident(s), prevent, grounding, similar, future	to prevent similar accidents occurring in the future
to prevent / prevented / preventing prevent* + grounding*	90 / 38 / 21 19	accidents, similar, regulations, occurring, future, pollution	to prevent similar accidents, could have been prevented
produce* / produced by / producing	76 / 15 / 6	chart, documentation, annual schedule, instructions, signs	locally produced charts
reduce* / reduced / reducing reducing / reduced + risk	46 / 123 / 32 7 / 7	speed, risk, visibility, depth	had reduced to, speed was reduced
result* in / result* from	128 / 15	accident, recommendations, investigation, vessel	not resulted in
suffer* / suffer* from	46 / 8	fatigue, damage, master	suffering from fatigue, suffered damage

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Appendix 2: Concept model of the concept *grounding* (adopted from Nuopponen 2008: 22).

8. Notes

[1] www.maib.gov.uk

[2] http://www.lexically.net/wordsmith/

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Contemporary approach to terminological competence, management and terminology teaching on the basis of courses for translators offered by Polish higher education institutions

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Abstract. The paper presents a brief review of the situation in Polish higher education institutions offering courses for translators. In the first part, a modern approach to terminological competence of translators is presented. Then several curricula of Polish higher education schools offering BA, MA or postgraduate studies in translation are reviewed to examine their approach to teaching translation-oriented terminology management. On this basis, conclusions concerning the current situation and some suggestions to improve efficiency of terminology training are formulated and some suggestions for a terminology management training course for translators in relation to its contents are proposed.

Keywords. Terminology management, terminological competence, translator competences, European Master's in Translation (EMT), European Norm EN-15038, teaching terminological competence, translator training.

1. Introduction

Terminological work constitutes central part of any translation project and may consume up to 60% of translator's time devoted to its completion. Efficient terminology management may considerably facilitate translator's work and significantly contribute to the delivery of a high quality translation product.

Terminological competence has acquired recently more attention and has been recognized as one of the key competences a modern translator should possess to be able to function successfully and efficiently on the contemporary translation market. Terminological competence, apart from linguistic and translation skills, is considered to be a requisite for translators if they want to comply with their future clients' and employers' requirements and expectations.

Thanks to technological developments and research in the field of linguistic engineering the contemporary market offers translators a wide array of translation tools which can be used to facilitate the translation process and terminology work. Yet, despite all these technological conveniences translators still seem reluctant to commence terminological work with the use of dedicated applications. This unenthusiastic approach may result from the tight time constraints within which translators have to work and from the conviction that learning how to operate terminology management tools is too time-consuming. On the basis of a survey into Polish translators attitudes towards translation technologies and usage of CAT tools (Sikora 2013) it is concluded that translators' courses offered by higher education institutions may have a decisive role in teaching translation-related terminology management, building terminological competence of translators and promoting proper usage of terminology management tools. However, if translators are to build and develop their terminological competences during their studies, a revised and updated approach to the issue of translator education in this respect is needed.

This paper is an attempt to investigate the situation in Poland and the way terminology management training is treated at Polish higher education institutions offering courses for translators. To do so, first a contemporary approach to terminological competence will be discussed on the basis

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of the existing standards and then several study programs for translators at BA, MA and post graduate levels in respect of terminology training will be reviewed to check whether and to what extent training in this field is included in the university programs' curricula. Finally, some suggestions for a translation-oriented terminology course will be formulated.

2. Educational and market norms and translator training

Translator and/or translation competence has been discussed and analyzed for over forty years so far and there exists a plethora of translator/translation competence definitions and models. Actually, the abundance of concepts and definitions blurs the vision and makes it difficult to define it precisely. Literature reviews of competence models can be found among others in Kelly (2002) and Pym (2003). In this paper, though, no attempt to redefine translator competence will be made. Rather we are going to look at translator competence from the perspective of the already existing educational and market standards which have been already created and which look at translator competences from the practical market-oriented perspective. The two norms which can be considered significant when defining translator competences and which can already serve as guidance are the EMT (European Master's in Translation) project commenced in 2009 and the European norm EN-15038 first published by the European Committee of Standardization in 2006. These two documents have been operating already for some time and have already gained some recognition and proponents both in the educational sphere and among translation service providers. Moreover, any attempt to define translator competence should be based on professional realism and take into account real market requirements set for the future translation service providers.

2.1. European Master's in Translation

European Master's in Translation is a partnership project between European Commission and European higher education institutions which was commenced in 2009. The main goal of this project is improving the quality of translator training throughout Europe in order to provide the market with highly skilled professional translators who would be able to respond to the needs and requirements of the contemporary information era and knowledge society (European Master's in Translation Strategy 2009). In other words, universities should train translators able to provide translation services in a number of formats and with the application of the state-of-the-art translation technologies to suit the requirements and quality standards of the translation market. The EMT project establishes professional and quality standards in terms of translator education which can be treated as a common framework of reference for university translation programs and can serve as guidance in designing translation courses. These standards are described as professional translator competences which constitute at the same time the training objectives to be achieved and acquired at the end of translator education at the MA level (Gambier 2009). Therefore the EMT project establishes a quality standard at master's level for all institutions training translators and should be treated as point of reference when designing translator training programs. At present there are 54 universities and programs admitted to the EMT network, among which there are two Polish universities entitled to use the EMT label: Jagiellonian University in Kraków, UNESCO Chair for Translation Studies and Intercultural Communication – M.A. studies with major in culturology, specialty in linguistics, specialization in "intercultural translation and communication" and Adam Mickiewicz University in Poznań, Institute of Neophilology – M.A. studies in specialized and professional translation (Universities and programmes in the EMT network).

2.2. European norm EN-15038

European norm EN-15038 is another document worth consideration as it also defines the set of translator professional competences considered essential in the contemporary translation industry. While the EMT project focuses on setting educational standards, the European norm can be

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treated as its counterpart concentrated on establishing translation market standards. As specified in the document the main purpose of EN-15038 is "to establish and define the requirements for the provision of quality services by translation service providers" (EN-15038 2006: 4). The norm defines the subsequent stages in the translation process (preparation, translation, checking, revision, review, proofreading and final verification) and indicates stages obligatory for ensuring a good quality service (translation, checking, revision). Additionally, the standard defines the roles of translation service providers who take part in the translation production process (i.e. translators, revisers, reviewers, proofreaders, terminology managers and project managers) and specifies formal education and experience requirements which they should fulfill to be able to provide high quality services. The document specifies also the range of professional competences future translation service providers should acquire during the course of formal education to meet market requirements. The goal of this standardization of the translation process as well as education and experience norms is raising the profile of the translation industry and enhancing the quality of translation services (EN-15038 2006).

3. Translator competences according to the EMT project and EN-15038

In general both documents admit that educational programs should be adapted to professional reality and contemporary market demands and therefore translators should possess a range of skills and competences which are not longer limited to linguistic and translational knowledge. The standards unanimously indicate that translators need also other competences which will enable them to function and work efficiently in the multimodal and technology-controlled environment. The range of competences defined in each of the norms is presented in Tab. 1.

EMT project	EN-15038
overall translation „supercompetence"	
translation service provision competence (translating competence, including also customer relationship management and business-oriented skills),	translating competence – the ability to translate texts to the required level of specialization and to meet customers' requirements;
language and intercultural competences (proficiency in S and T languages, text summary skills and the ability to understand information containing cultural allusions),	linguistic and textual competence in the SL and the TL – the ability to understand the source language and translate it into the TL by following its textual conventions and rules;
thematic competence (knowledge in specialist fields).	cultural competence – ability to apply knowledge of ST and TT conventions, behavioral standards and values;
technological competence (the ability to use a range of computer tools for various purposes),	technical competence – the abilities and skills required for the professional preparation and production of translations regarding technical aspects;
information mining competence (the ability to search for information, by looking critically at various information sources),	research competence, information acquisition and processing – the ability to efficiently acquire additional linguistic and specialized knowledge necessary to understand the source text and to produce the target text, experience in the use of research tools and the ability to develop suitable strategies for the efficient use of the information sources available.

Table 1 Translator competences according to the EMT project and EN-15038 (Gambier 2009; EN-15308 2006)

As can be seen, competence models delineated by both documents are quite similar and in general agree on the range of the most essential skills and competences. There are slight differences concerning, for example, the scope of the translation competence which in the EMT project is described as translation provision competence and apart from translational skills includes

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also business-oriented and interpersonal skills such as: ability to negotiate and approach clients, ability to manage one's time, stress and work, ability to comply with instructions and knowing the standards applicable to the provision of the translation service, etc. (Gambier 2009). Moreover, the EN-15038 does not mention the thematic competence which is also referred to as domain/subject/or subject-specific competence (Biel 2011) and means specialized knowledge in a particular domain. In case of the EN-15038 the thematic competence is to certain extent included and covered by the research, information acquisition and processing competence of which "the ability to efficiently acquire the additional linguistic and specialized knowledge necessary to understand the source text and to produce the target text" (EN-15038 2006: 7) is one of its core components.

Technological competence according to EMT	Technical competence according to EN-15038
○ Knowing how to use effectively and rapidly and to integrate a range of software to assist in correction, translation, terminology, layout, documentary research (for example text processing, spell and grammar check, the internet, translation memory, terminology database, voice recognition software) ○ Knowing how to create and manage a database and files ○ Knowing how to adapt to and familiarise oneself with new tools, particularly for the translation of multimedia and audiovisual material ○ Knowing how to prepare and produce a translation in different formats and for different technical media ○ Knowing the possibilities and limits of MT	○ […] the abilities and skills required for the professional preparation and production of translations. ○ the ability to operate technical resources […]
Information mining competence according to EMT	**Research competence, information acquisition and processing**
○ Knowing how to identify one's information and documentation requirements ○ Developing strategies for documentary and terminological research (including approaching experts) ○ Knowing how to extract and process relevant information for a given task (documentary, terminological, phraseological information) ○ Developing criteria for evaluation vis-à-vis documents accessible on the internet or any other medium, i.e. knowing how to evaluate the reliability of documentary sources (critical mind) ○ Knowing how to use tools and search engines effectively (e.g. terminology software, electronic corpora, electronic dictionaries) ○ Mastering the archiving of one's own documents	○ […] the ability to efficiently acquire the additional linguistic and specialised knowledge necessary to understand the source text and to produce the target text. ○ […] experience in the use of research tools and the ability to develop suitable strategies for the efficient use of the information sources available.

Table 2 Technical and information mining competence according to the EMT project and EN-15038 (Gambier 2009; EN-15308 2006)

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As can be also seen, both standards include research and information mining competence as well as technical skills in their competence models and consider them to be indispensable for translation service providers. They also specify in detail what specific skills and abilities build up the above-mentioned competences. They are enumerated in Tab. 2.

4. Translator competence, market needs and terminological skills

The above-discussed competence models were created in response to various trends and changes affecting the translation industry (e.g. globalization, enlargement of the EU, growing demand for qualified (multilingual) translators, technological advances, diversification of translation profession and translation types and formats, technical resources available) (Gambier 2009) and in order to respond to translation clients' needs and preferences. Thus, from the above norms it follows that to meet market requirements professional translators should:

○ possess good linguistic skills in both SL and TL,

○ have domain-specific knowledge,

○ be able to use computer tools proficiently for translation, document production, and business management purposes,

○ possess various translation service provision skills (project management, revision, proofreading, correction, terminology management, desktop publishing),

○ possess translation and technological skills in specialized areas (e.g. localization, AVT, conference interpreting),

○ be versatile and adjust quickly to changing market and technological requirements.

4.1. Defining terminology management competence

Taking into account the skills and abilities enumerated in Tab. 2 and translator's practical experience, terminological needs, and also accounting for the market requirements referred to in point 4, it is suggested that terminological competence is a combination of several components:

○ technical competence and

○ research and information mining (acquisition and processing) competence

as translators to obtain terminological information and manage it for translation purposes have to develop and use certain terminology (and information) research skills, but also have to be able to use a variety of technical tools which enable efficient storage and management of terminology. Moreover, these two competences should be backed up with thematic competence in its traditional meaning – knowledge in a particular field. Our observation is also corroborated by the definition of thematic competence provided in the EMT project, where it partially overlaps with the information mining competence as both competences mention the ability to search for relevant information (Gambier 2009) Thus, terminological competence is here understood as a mixture of technical and research skills supported with subject specific knowledge and the ability to develop the thematic competence.

5. Translator's training in the Polish educational system

A survey into Polish translators' workstation on the usage and application of CAT tools including terminology management applications carried out in 2011 (Sikora 2013) revealed that there is some correlation between translator education and their willingness to use (and actual usage of) translation technologies. The results demonstrated that graduates of university courses for translators tend to use translation software in general more frequently than those who received general education in foreign language studies (Fig. 1). Moreover, the results also showed that translation memory systems are used by 65% of the surveyed translators and that the numbers

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are lower for terminology management software which is used by around 40%, whereas one fifth of the respondents never heard of such tools (Fig. 2). These results clearly indicate that translator education has a great role in propagating translation and terminology management technologies.
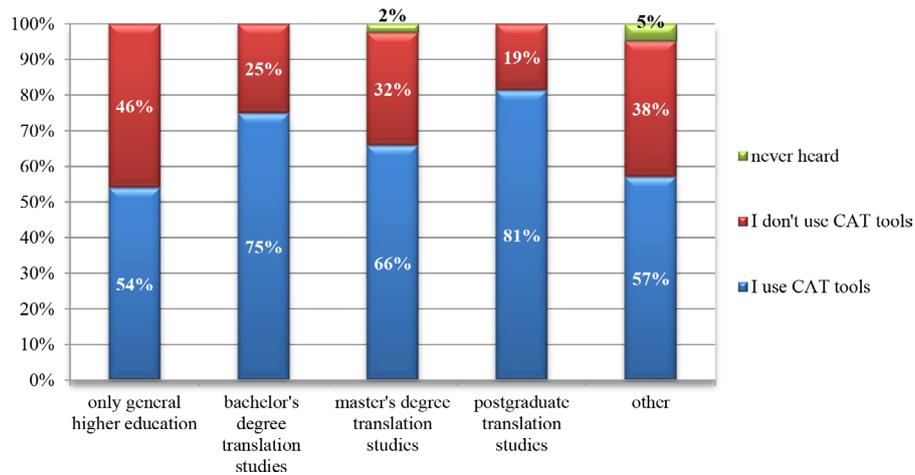
Figure 1: Professional qualifications and CAT tools usage
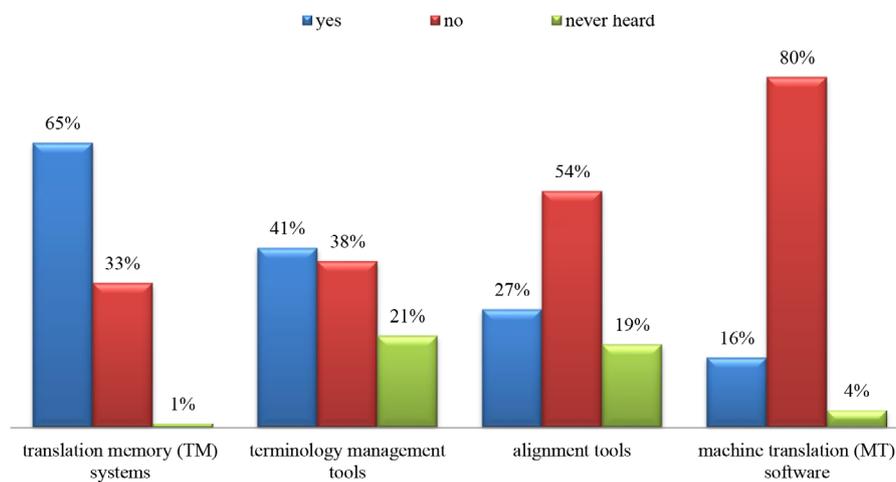
Figure 2: Usage of CAT tools

6. Translator training in the Polish educational system

Translation Studies are in Poland a sub-component of traditional philologies and do not have a status of an independent academic discipline. Therefore, they function usually as specializations chosen under a major in, e.g., English or German studies. Translator training is, thus, offered at the bachelor's and master's levels, where students choose a major in the language they want to study and further they decide on the specialization they want to choose (usually teaching, translation and/or interpreting specializations are offered). Translator education can be further continued at the post-graduate level on one-year specialized courses for translators or interpreters.

6.1. Terminology management training within tertiary studies – review of syllabi

Tab. 3 below presents the results of a short research into the situation at Polish higher education institutions offering translator training, the purpose of which was to check how the issue of terminology management training is approached by translator education institutions and to what extent this subject is covered in their curricula.

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LEVEL OF STUDIES	CAT training	TERMINOLOGY MANAGEMENT training
BA STUDIES – 10 courses reviewed	4	1
MA STUDIES – 11 courses reviewed	7	4
POST-GRADUATE STUDIES – 28 programs reviewed	6	2
TOTAL – 49 COURSES	**17**	**7**

Table 3 Terminology management training within tertiary studies – review of syllabi

As demonstrated in Tab. 3, for 49 programs checked (major in "language studies", specialization in translation) 17 (34%) offered training in CAT tools and only 7 (14%) provided some training in terminology management technologies. As can be easily observed a bigger number of university programs include CAT training courses, which is already a symptom of certain changes taking place and growing awareness that education in this scope is needed. However, fewer programs offer terminology management training in their curricula.

6.1.1. Courses for terminologists and terminographers

The 7 courses indicated in Tab. 3 are courses training future terminologists and terminographers and thus they concentrate more on theoretical issues such as: terminology as a scientific discipline, the notion of term and concept and term types, onomasiology, structure of dictionaries and lexicons, terminological systems and norms, principles of term formation, types of dictionaries and principles of their creation, etc. Thus, basically, these courses cater for the needs of future terminologists and terminographers (who may also be translators) but are not designed to meet the needs of translators (who do not have to be necessarily professional terminographers, but should be able to create a termbase for their own purposes) who have less complicated terminological needs. In general, it is agreed that translators due to time pressure tend to perform ad hoc problem solving and project-oriented terminology work and are less interested in systematic standardization of terminology (Galinski, Budin 1996). What they need is to obtain quickly specialized knowledge and resources in a specific field. Thus, translators are more interested in identifying and recording elements which pose translation problems and more concerned with storing linguistic and pragmatic information and less with semantic and grammatical data. Thus, if they create 'termbases', they tend to structure them by form (semasiological model) and not by concept (onomasiological model advocated by terminology management theories)

(Bowker 2002). It has to be also added that these courses did not offer any practical training in terminology management tools but focused on theoretical issues.

6.1.2. Translation-oriented terminology courses

None of the reviewed programs (whose syllabi were available) included a comprehensive translation-oriented terminology management course which would be designed in line with the guidelines and up to the standards of the norms discussed above and which would accommodate the needs of future translators. In other words – courses which would introduce translators to the realm of terminology management tools and their functionalities and which would develop practical terminology management skills (terminology mining, terminology search techniques, term extraction, retrieval, storage, creating a termbase, information on available terminological resources etc.) in "real" translation projects, where students could get accustomed and learn how to use these tools effectively.

However, it was also observed that if there was no specific terminology-dedicated course included in the translation study program, then in some cases terminology management was in a way incorporated within other courses such as: specialized terminology course (learning specialized terminology in a specific field) or specialized translation course (e.g. legal, business – translating specialized texts containing specialized terminology) or within a CAT training course

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(presentation of terminology management tools and their functionalities). The learning outcomes of these courses specify that students should possess the knowledge of available information and terminology sources for translators, should have well-developed research skills, and should be able to use specialized knowledge and resources critically as well as constantly develop their own lexical resources. The observations show that, in fact, such courses concentrate on:

○ developing lexical resources in a specific field by means of practical vocabulary exercises,

○ developing information and terminology research skills,

○ providing information on available terminological resources,

○ but do not show the students how to use these tools in practice.

It is also possible that some CAT tools courses also included instruction in terminology management tools, however not all information concerning the content of every course was available.

Summing up, terminology management in the Polish tertiary education system is either taught as a specialized more theoretically-oriented course for terminologists and terminographers or within other translation-related courses (courses expanding specialized terminology, specialized translation or CAT tools training courses), but not as translation-oriented terminology management training aimed at developing practical terminology management skills useful in the translation process with the use of available on the market terminology management tools. It can be stated that there are some harbingers of transformation and progress; however there is still a lot to be done to adapt translation programs within the Polish higher education system to the European standards and market requirements.

7. Conclusions - suggestions for a translation-oriented terminology management course

A course in terminology management for translators should combine a few areas to be effective and to correspond to translators' and translation market's needs. Basing on own experience as a translation student and a practicing translator and summing up the above considerations, the author believes that a terminology management course for translators should:

○ teach students to recognize and solve terminological problems,

○ provide information on available Internet and electronic terminology and information resources,

○ develop good research skills and strategies for effective searching of information and terminology resources,

○ teach students how to extract, retrieve, evaluate, manage information and terminology and store it for future use,

○ teach students how to use CAT tools for terminology management purposes,

○ teach students general terminology management and termbases creation principles as they may work as terminology managers in the future.

As far as the contents is concerned, the author believes that the following topics should be covered by the course curriculum:

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1. Basic theoretical introduction to terminology, terminology management, translator's terminological needs, benefits of terminology management
2. Presentation of available terminology resources (dictionaries, glossaries, databases, termbases, linguistic corpora, parallel texts, source and target specialized texts)
3. Practicing various methods of specialized terminology and information search and evaluation
4. Presentation of available TM tools and their functionalities
5. Practicing term extraction, analysis, retrieval, storage and management methods with the use of TM tools
6. Practicing ensuring term consistency with the use of CAT tools
7. Compiling and management of a project-based termbase
8. Management of a translation-oriented terminology project
9. Practical application of TM tools in translation projects all over the course

Table 4 A proposal of a content of a translation-oriented terminology management course

The schedule presented in Tab. 4 should be only treated as a tentative proposal and it would certainly require verification, but it is the author's strong conviction that introducing such translator-dedicated terminology courses would improve significantly the efficiency and quality of translators' work. Moreover, translators who would receive such training in their university education would be less afraid and reluctant to use these tools in the future, as the training received previously would make them feel more comfortable with new technologies and in the new work environment.

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El conocimiento cultural en dominios especializados: Un acercamiento desde la base de conocimiento FunGramKB

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Abstract. FunGramKB is a knowledge base made up of different modules for the comprehensive processing of language. The main component is the conceptual, containing both common-sense knowledge (Ontology), procedural knowledge (Cognicon) as well as knowledge about named entities representing people, places or organisations (Onomasticon). This paper draws on previous studies within FunGramKB dealing with the Onomastical component and reviews this module from the perspective of specialised discourse.

Keywords. FunGramKB, cultural knowledge, ontologies.

1. FunGramKB

FunGramKB, tal y como se ha presentado en estudios anteriores (Periñán-Pascual & Arcas-Túnez, 2004, 2005, 2007a, 2007b), se define como una base de conocimiento para el Procesamiento del Lenguaje Natural (PLN), que, por un lado, es multipropósito, ya que puede utilizarse en el desarrollo de un gran número de distintas aplicaciones relacionadas con la computación del lenguaje, y que, por otro lado, es multilenguaje, en tanto que puede trabajar con distintas lenguas, independientemente de sus características morfológicas o gramaticales (ver www.fungramkb. com). Tratar de señalar todas las ventajas de esta base de conocimiento requeriría detenerse en los detalles de su gestación y fundamentación teórica, por lo que solo nos referiremos aquí a dos características fundamentales que hacen de FunGramKB un instrumento especialmente versátil. De una parte, FunGramKB está construida sobre una arquitectura robusta que se divide en varios módulos interconectados para el procesamiento lingüístico a todos los niveles (morfológico, gramatical, construccional, conceptual, etc.). Esta arquitectura está concebida como un todo estructurado, de tal forma que estos niveles funcionan de forma secuenciada. De otra parte, y quizá lo más relevante para el propósito de este artículo, FunGramKB está diseñada para integrar de forma eficaz el conocimiento del denominado "sentido común", con el conocimiento especializado, es decir, con conceptos que son propios de áreas como la Medicina, el Derecho o la Ingeniería. A continuación, se muestra de manera gráfica la arquitectura de FunGramKB:

Como se observa en la Fig. 1, en esta arquitectura existen tres niveles o "modelos" claramente diferenciados: el conceptual (marcado en verde), el léxico (en azul) y el gramatical (en amarillo). Las flechas de trazo grueso así como las discontinuas hacen referencia a la naturaleza interconectada de cada uno de los modelos y de sus subniveles de descripción, respectivamente. Por razones de espacio, este artículo no abordará una revisión de cada uno de los componentes de FunGramKB, sino que se refiere el lector a Periñán-Pascual (2007).

Este artículo explora aspectos teóricos y prácticos de la construcción del "Onomasticón" (en inglés "Onomasticon"), que forma parte del modelo conceptual. En concreto, plantea varias propuestas para el desarrollo de entidades relacionadas con ámbitos especializados de conocimiento y con el conocimiento enciclopédico. Para ello, el artículo parte del estudio preliminar de Periñán-Pascual & Carrión-Varela (2011), que constituye el primer análisis en profundidad del componente onomástico de FunGramKB. Tal y como se verá, es posible orientar el Onomasticón para su aplicación en tareas de procesamiento y razonamiento artificial.

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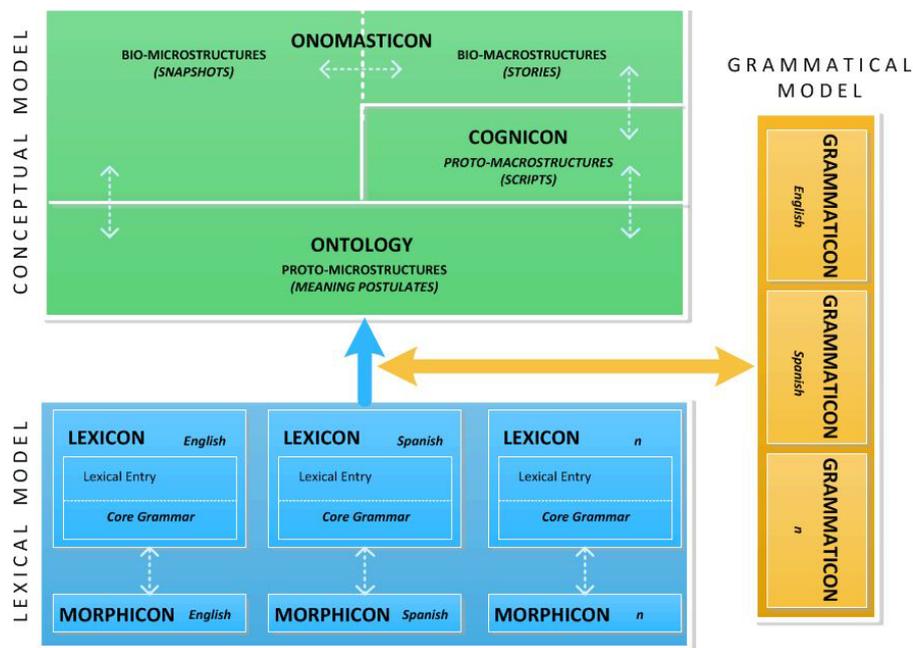
Figure 1: La arquitectura de la base de conocimiento FunGramKB

El resto de este artículo se estructura de la siguiente forma. El segundo apartado ofrece una revisión de los aspectos más relevantes del Onomasticón. El tercer apartado aborda cuestiones metodológicas relacionadas con la conceptualización en el Onomasticón e ilustra el proceso mediante algunos ejemplos pertenecientes a los dominios especializados del terrorismo y el crimen organizado. Finalmente, el cuarto apartado plantea pautas generales para el aprovechamiento y la aplicación del conocimiento onomástico en tareas de razonamiento y descubrimiento de información.

2. El Onomasticón

El Onomasticón se define como un módulo conceptual para el registro de unidades de tipo enciclopédico, es decir, unidades conceptuales que representan entidades y eventos únicos (Periñán-Pascual & Carrión-Varela 2011). Por ejemplo, el Onomasticón contiene información sobre personas como *Carlos V* o *Nelson Mandela*, o lugares como *Viena* o *La Alhambra*. Al igual que la ontología (véase Fig. 1), los conceptos del Onomasticón están definidos mediante lenguaje COREL (COnceptual REpresentation Language) (Periñán-Pascual & Mairal-Usón 2010), que permite expresar información conceptual de una manera flexible. Este lenguaje además posee la ventaja de ser procesable computacionalmente a la vez que fácilmente legible para los humanos. El Onomasticón (véase Fig. 1) contiene dos tipos de unidades conceptuales: las bio-microestructuras y las bio-macroestructuras. Las primeras capturan conocimiento cultural síncrono, mientras que las segundas representan historias de forma diacrónica (Periñán-Pascual 2012). En este apartado se aborda el estudio de dos bio-microestructuras de tipo onomástico.

Aprehender total o parcialmente el conocimiento del mundo así como describir las entidades conocidas son tareas complejas que requieren tiempo. De ahí que la población del Onomasticón se lleve a cabo primordialmente de forma semiautomática mediante la reutilización de conocimiento proveniente de otras fuentes de información digitales abiertas como, por ejemplo, Wikipedia. El Onomasticón de FunGramKB puede importar el conocimiento compilado en estos repositorios digitales para conectarlo con el resto de modelos y aumentar así la capacidad de procesamiento y razonamiento de la base de conocimiento. En el caso de Wikipedia, por ejemplo, este proceso de importación puede realizarse desde los "cuadros de información" (en inglés *infoboxes*) al Onomasticón utilizando para ello la mediación de la taxonomía de DBpedia. DBpedia es el producto de la colaboración entre grupos de usuarios y se ofrece como un repositorio ontológico

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formado a partir de la información estructurada de Wikipedia. El proceso de importación de DBpedia al Onomasticón se divide en tres fases (Periñán-Pascual & Carrión-Varela 2011). En primer lugar, se construyen las plantillas COREL que servirán como receptáculo conceptual de los datos provenientes de la base de datos enciclopédica. Esta fase se lleva a cabo a través de una interfaz específica integrada en la plataforma de edición de FunGramKB. En segundo lugar, se realiza el volcado estructurado de la información desde DBpedia al Onomasticón. Finalmente, en la última fase se realizan tareas de mantenimiento de las plantillas así como de actualización de los datos enciclopédicos, ya que la información importada no es estática, sino que puede sufrir variaciones con el paso del tiempo. Esta metodología resulta de gran utilidad para la adquisición masiva de nueva información. Sin embargo, no incluye por el momento la adquisición de contenidos no estructurados, es decir, datos que no están organizados bajo un patrón recurrente como el que ofrecen los cuadros de información, sino que se encuentran desarrollados sin forma predefinida en el cuerpo principal de la entrada enciclopédica. En la siguiente sección, se proponen algunos ejemplos de conceptualización de unidades onomásticas a partir de la información no estructurada de Wikipedia.

3. Instancias especializadas en el Onomasticón

FunGramKB es una base de conocimiento en evolución que se somete a continuas tareas de mejora, expansión y filtrado de información en todos sus niveles. Uno de los principales avances de la base de conocimiento ha sido la reestructuración de su diseño con el objetivo de albergar las denominadas "Ontologías Satélite", es decir, ontologías de contenido especializado construidas sobre la base de terminología propia de campos científicos o técnicos (para un estudio en profundidad la construcción de ontologías terminológicas, se refiere el lector a Felices & Ureña 2011, Ureña et al. 2011, Carrión-Delgado 2012, Felices & Ureña 2012). Estas ontologías especializadas están conectadas a la Ontología Nuclear y ésta a su vez conecta las Ontologías Satélite entre sí.

Separar entre Onomasticón especializado y no especializado en los mismos términos que se ha hecho entre la Ontología Nuclear y las Ontologías Satélites no es una tarea sencilla, ya que el Onomasticón alberga conocimiento no prototípico o no estereotípico (Periñán-Pascual 2012). De hecho, la arquitectura de FunGramKB no contempla especificación alguna en este sentido (véase Fig. 1). Para nuestro propósito, no obstante, establecemos esta distinción a efectos puramente metodológicos y definimos conceptos culturales especializados como unidades relevantes en tareas de procesamiento o de recuperación de información en un dominio de conocimiento técnico. Esta sección se centra en algunos ejemplos de conceptualización de unidades especializadas del dominio criminal, en concreto en relación con la lucha contra el crimen organizado y el terrorismo, y ofrece una reflexión sobre cómo esta conceptualización puede ser útil en tareas de procesamiento.

Una primera distinción en la conceptualización del dominio del crimen internacional consiste en la división entre agentes criminales, esto es, entidades que realizan actos de delincuencia organizada o terrorista, y entidades de defensa, que ejercen labores de prevención o captura de los agentes criminales. Otras instancias necesarias para el modelado del dominio incluyen los materiales, las técnicas y las armas que ambos tipos de agentes utilizan para la prevención o, por contrario, comisión de los delitos. A continuación se muestra un ejemplo la conceptualización de tipo cultural del organismo EUROPOL, entidad europea para la prevención de los delitos antes mencionados. La información que aparece abajo en cursiva está extraída de Wikipedia (versión en lengua inglesa) y bajo ésta se muestra la correspondiente representación COREL:

(1)   EUROPOL

     o   *Europol's aim is to improve the effectiveness and co-operation between the competent authorities of the member states primarily by sharing and pooling intelligence to prevent and combat serious international organized crime.*

*(e1: +BE_00 (x1: %EUROPOL_00)Theme (x2: +ORGANIZATION_00)Referent)

*(e2: +HELP_00 (x1)Theme (x3: %EUROPEAN_UNION_00)Referent (f1: (e3: n +EXIST_00 (x4: +ORGANIZED_CRIME_00)Theme))Purpose)

- Dismantling of a credit card fraud network.

*((e4: past +FINISH_00 (x1)Theme (x5: +ORGANIZATION_00)Referent) (e5: +DO_00 (x5) Theme (x6: +FRAUD_00)Referent (x7: $CREDIT_CARD_00)Instrument))

- Seizing of a 30 kilograms (70 lb) cocaine load from Colombia

*(e6: past +SEIZE_00 (x1)Theme (x8: $COCAINE_00)Referent (f2: 30 $KILOGRAM_00) Quantity (x9)Origin (x10)Goal (x11: %COLOMBIA_00)Location)

- Disruption of an illegal immigration network in France

*(e7: past +FINISH_00 (x1)Theme (x12: $IMMIGRATION_00)Referent (x13: %FRANCE_00) Location (f3: (e8: n +BE_00 (x12)Theme (x14: $LEGAL_N_00)Attribute))Condition)

La primera de las proposiciones mostradas arriba pertenece al epígrafe "Funciones" (*Functions*) que se encuentra bajo la entrada principal de EUROPOL, mientras el resto de predicaciones pertenecen a la sección dedicada a las "Operaciones" (*Operations*) de este organismo. Tal y como se ha sugerido anteriormente, la información en el cuerpo de los artículos de Wikipedia no es de tipo estructurado en el mismo sentido que los cuadros de información y, por tanto, su compilación en FunGramKB es a día de hoy manual. Para incorporar este conocimiento sin estructura explícita en FunGramKB es necesario realizar dos pasos principalmente. En primer lugar, seleccionar exclusivamente la información necesaria y, en segundo lugar, traducir la información seleccionada a lenguaje COREL. Esta traducción y representación formal en COREL habrá de simplificar las estructuras más complejas del lenguaje natural (véase, por ejemplo, la reducción entre la primera predicación en el ejemplo (1) y su correspondiente traducción en COREL).

Un segundo ejemplo de modelado de un concepto onomástico del crimen organizado atañe a las personas que han ejercido la delincuencia. En el caso del conocido como Al Capone encontramos que existe una gran número de datos relativos a este personaje en Wikipedia. Como ocurre en el caso anterior, la mayoría de la información a esta entidad no se encuentra en una cuadro de contenido, sino desarrollado en el cuerpo del artículo. A continuación se analiza la versión española de la entrada enciclopédica de Al Capone y, como se aprecia, el lenguaje de conceptualización es el mismo que en el caso anterior. Este caso se propone como ejemplo de perfil criminal y podría servir como modelo de conceptualización para otros perfiles criminales actuales:

(2)   ALCAPONE

- Alphonse Gabriel Capone […] más conocido como Al Capone o Al Scarface Capone […], apodo que recibió debido a la cicatriz que tenía en su cara, provocada por un corte de navaja.

*(e1: past +BE_00 (x1: %AL_CAPONE)Theme (x2: %SCARFACE_00)Referent (f1: (e2: +HAVE_00 (x1)Theme (x3: $SCAR_00)Referent (x4: +FACE_00)Location))Reason)

- […] Capone siguió enriqueciéndose gracias al tráfico ilegal de bebidas alcohólicas […], y a través de su vasta red clandestina de salas de juego.

*(e3: past +OBTAIN_00 (x1)Theme (x5: +MONEY_00)Referent (f2: (e4: +SELL_00 (x1) Theme (x6: +BEVERAGE_00)Referent (x7: $LEGAL_N_00)Attribute))Means

*(e5: +CREATE_00 (x1)Theme (x8: i +ROOM_00)Referent (f3: (e6: +PLAY_00 (x9)Theme (x10)Referent (x11: $LEGAL_N_00)Attribute))Purpose)

- Aunque probablemente nunca fue iniciado en la Cosa Nostra, rápidamente se asoció

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con la Mafia y se adueñó del hampa de Chicago

*(e7: past n +HAVE_00 (x1)Theme (x12: %COSA_NOSTRA_00)Referent)

*(e8: past +JOIN_00 (x1)Theme (x13: %MAFIA_00)Referent)

*(e9: past +BE_00 (x1)Theme (x14: +LEADER_00)Referent (x15: $HAMPA_00)Beneficiary)

Uno de los objetivos a medio plazo en el desarrollo de FunGramKB es la asimilación semiautomática de conocimiento no estructurado disponible en la red o soporte informático. No obstante, la base de conocimiento que proponemos ya ha dado un gran paso en esta dirección al plantear una primera implementación de ARTEMIS (Automatically Representing TExt Meaning via an Interlingua-based System), que servirá como interfaz de computación textual de intermediación entre el lenguaje natural y la propia base de conocimiento. Una de las muchas vías de investigación que abre ARTEMIS es precisamente la de mejorar la forma en la que FunGramKB adquiere conocimiento. Por otro lado, este sistema interlingüístico también contribuirá a mejorar las funciones de razonamiento, tanto cualitativa como cuantitativamente.

4. Conocimiento cultural y razonamiento artificial

Las labores de adquisición y modelado conceptual que se está realizando en el marco de FunGramKB están encaminadas a la computación del lenguaje y al razonamiento artificial. Los procesos de razonamiento en esta base de conocimiento están divididos en dos: por un lado, el "Microknowing", o proceso de nivel bajo para la herencia e inferencia conceptuales, y, por otro lado, el "Macroknowing", encargado de establecer conexiones e inferencias entre el conocimiento ontológico, onomástico y procedimental (Periñán-Pascual & Arcas-Túnez 2005; Periñán-Pascual & Mairal-Usón 2009). A nivel más general, la introducción de mecanismos de razonamiento conceptual como el que está desarrollando FunGramKB va a permitir que los organismos y las instituciones que desempeñan su labor en distintas áreas de trabajo puedan utilizar la base de conocimiento para acceder a información relevante de forma más rápida e inteligente.

El papel que juega el conocimiento cultural del mundo representado por las entidades y por las historias contenidas en el Onomasticón resulta fundamental para establecer relaciones entre entidades o eventos aparentemente no relacionados. En el caso de los dominios del crimen organizado y terrorismo, por ejemplo, la descripción de las células y agentes colectivos o individuales que llevan a cabo actos delictivos, puede contribuir en el descubrimiento y predicción de nuevos perfiles de riesgo relacionados con personas o grupos que muestren pautas similares de comportamiento delictivo. De esta forma, eventos como "participación", "pertenencia", "colaboración" o "compra-venta", etc. referidos a una entidad cualquiera pueden poner a ésta en relación con otra entidad más conocida y, lo que es aún más importante, esta relación podrá sugerir acciones o recomendar toma de decisiones. El motor de razonamiento de la base de conocimiento podrá emplearse asimismo para encontrar relaciones entre los lugares de comisión de delitos y personas bajo investigación.

5. Conclusiones

Este artículo ha ofrecido una revisión general de la base de conocimiento FunGramKB y ha tratado de discutir dos aspectos fundamentalmente. En primer lugar, se ha propuesto avanzar en el desarrollo del componente de FunGramKB denominado "Onomasticón" –en lo que se refiere en particular al modelado conceptual de entidades y eventos relativos al terrorismo y el crimen organizado– tomando como punto de partida la importación de datos desde otras fuentes de conocimiento, así como la creación *ad hoc* de información. Tal y como se ha mencionado, gran parte de la información cultural (y no cultural) de la que disponemos en los distintos repositorios de datos en formato digital aparece expresada de forma no estructurada, de ahí que actualmente la población del Onomasticón se lleve a cabo principalmente de forma automática a partir de la

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importación desde bases de datos de contenido estructurado. Sin embargo, este proceso podrá automatizarse parcialmente en fases posteriores de desarrollo para agilizar la incorporación de nuevas unidades conceptuales a partir de datos no estructurados. En segundo lugar, este artículo ha propuesto de forma preliminar algunas vías de aplicación del conocimiento onomástico más especializado en labores de razonamiento y descubrimiento de información. Tantos los presupuestos teóricos como metodológicos para crear unidades conceptuales en el Onomásticón se proponen *a priori* para cualquier campo especializado de conocimiento.

6. Agradecimientos

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Let's do it together: Instances of cooperation in terminology work: Roles, tools, needs and difficulties

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Abstract. High quality multilingual terminology work is essentially a cooperative activity, as different roles (e.g. terminologists, domain experts, IT experts) interact to achieve the intended results. Furthermore, in the last decade the world of terminology has seen various efforts in fostering data sharing, exchange and mergers as well as the publication of previously in-house terminological data collections. The times when terminology was kept for internal purposes only and every organisation strived to meet internal demands by starting separate – albeit often similar – terminology projects are coming to an end: the era of cooperation in terminology has begun. However, several issues hampering cooperation and communication in terminology remain to be faced. Smooth collaboration between different professionals, challenges in work coordination, limited support from dedicated tools and a complex legal framework are some of the relevant aspects addressed in the paper.

Keywords. Cooperation in terminology, communication practices in terminology work, terminology workflow, roles in the terminology workflow, legal framework of databases, needs in terminology work.

1. Background

In the last decade the world of terminology has seen various efforts in fostering data sharing, data exchange and data mergers as well as the successful publication of previously in-house terminological data collections. For example, the Canadian termbank TERMIUM Plus®[1] and the Swiss Termbank TERMDAT[2] are now open to the public. In 2004 the new European Union terminology database IATE[3], the result of a merger of formerly separate institutional databases like EURODICAUTOM (Commission), EUTERPE (Parliament) and TIS (Council), was launched for internal use and later made available to external users in 2007[4]. Also data exchanges are being discussed and implemented more and more often (cf. e.g. the EuroTermBank project[5]). It would therefore seem that the times when terminology was kept for internal purposes only and every organisation strived to meet internal demands by starting separate – albeit often similar – terminology projects are slowly coming to an end. The era of cooperation in terminology has begun.

Notwithstanding these recent developments, several issues hampering cooperation and communication in terminology remain to be faced. Smooth collaboration between different professionals, challenges in work coordination, limited support from dedicated tools and a complex legal framework are some of the issues that we will address in the following sections.

2. Data collection

The information presented in this paper results from the analysis of 17 semi-structured interviews conducted between autumn 2011 and spring 2012 with terminology managers and terminologists working in terminology centres or units located mainly in Europe, but also beyond. It is further confirmed by the outcomes of an explorative online survey launched on the same topics in winter 2010/2011. The public centres/units involved in the research belong to different institutional levels, from the local/regional, to the national and supranational or international level. Also private

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terminology centres participated to both the online survey and interviews. All types of approaches to terminology work have been covered. Most centres/units work with two or more languages, but some also follow monolingual projects (monolingual vs. multilingual terminology work). Both the prescriptive and the descriptive approach are represented. Often the two approaches coexist, but one or the other prevails according to the specific issue or project (prescriptive vs. descriptive terminology work). The majority of terminology centres/units supports translation work, only few have terminology standardisation as their main aim; several centres/units actually state that their terminology work can be considered multipurpose (translation-oriented terminology work vs. standardisation-oriented vs. multipurpose terminology work). The limited number of staff and time available do not allow many terminology centres/units to perform systematic domain-related work. Some work on a text-related basis, but most have to meet specific terminological needs ad-hoc in a very short time (ad-hoc vs. systematic vs. text-based terminology work). Finally, great efforts are put into anticipating future terminological needs rather than collecting terminology a posteriori (proactive vs. a posteriori terminology work) (cf. Chiocchetti & Ralli 2012: 24-26).

The online survey was based on more than 50 multiple-choice answers, the interviews on a predefined protocol concerning various aspects of terminology work, such as general aspects, methodology, terminology management, terminology management systems, terminology planning, etc. The survey was disseminated via relevant terminology networks (e.g. TermNet[6], Infoterm[7], etc.). With only one exception held via conference call, all interviews were conducted face-to-face. The interviewees were free to answer the questions and provide information in their own words. The audio was recorded with the interviewees' consent. The respective transcriptions have been numbered in sequence and anonymised (cf. Chiocchetti & Ralli 2012: 10-12).

3. Cooperation in terminology

Based on the results of the survey and interviews, in the following sections we will discuss various aspects of cooperation and collaboration in terminology, both within a single organisation (see 3.1.) and between different organisations (see 3.2.). We will illustrate the cooperating roles and also address the main difficulties and needs expressed, which concern, for example, the tools supporting collaboration and the legal framework of cooperation projects.

3.1. Intra-institutional cooperation

High quality multilingual terminology work is essentially a cooperative activity. Different roles interact within a set workflow to ensure a smooth progress of work, full adherence to the needs voiced, the topicality and relevance of information released as well as correctness of both language and content. Fig. 1 illustrates the roles involved in terminology work. The most prominent role are the terminologists doing the core work, who may be coordinated by terminology managers. Terminologists consult domain experts during their activity and are often supported by IT specialists. Their paramount goal is to meet the needs of their target users, who voice their demands and give feedback on the results. The rules and the degree of cooperation between the various roles we have just listed can be determined by different factors, e.g. the purpose, scope and target users of terminology, the specific domain under analysis and the number of languages considered. For example, in prescriptive terminology work domain experts may assume a more prominent role, e.g. as members of standardisation committees. In very small terminology teams, the role of the terminology manager might not exist, as one of the terminologists will take over coordination tasks, next to his or her daily tasks in terminology elaboration. Finally, the technical support can be outsourced to external service providers, especially when commercial tools are used for terminology management.

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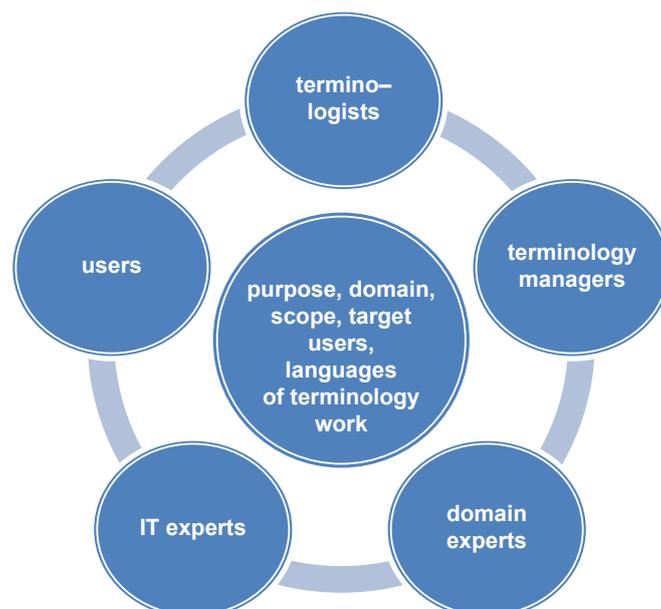
Figure 1: Roles cooperating in terminology work

The needs expressed in the interviews concerning the cooperation between roles in the terminology workflow and the solutions envisaged to meet them – albeit often in form of a compromise considering the availability of staff and resources – mainly concern:

- the limited availability of trained terminologists for all languages (cf. Chiocchetti & Ralli 2012: 23).

Qualified training in terminology is not available in all countries and for all languages of the world. Therefore, for lesser used languages or for languages spoken in countries with a very limited tradition in terminology work there is a clear lack of professional staff. This is one of the reasons why the native speaker principle demanding that terminologists mostly work in their mother language is rarely applied very strictly. The staff's training in terminology may also influence cooperation, as professionals belonging to different schools of terminology do face some challenges while cooperating in a large team.

The approach followed by some terminology centres/units that mainly support work in various translation units is to offer terminology trainings to the translators and/or to organise translator secondments to the terminology unit. These "rotating terminologists" temporarily enlarge the staff available for terminology work and become familiar with the theory and practice of terminology elaboration. Offering traineeships, especially to students of terminology, translation and languages, is another common way of acquiring temporary staff, but is also an opportunity of training and getting to know possible new staff members (cf. Chiocchetti & Ralli 2012: 24).

- the difficulty in coordinating terminology teams and keeping track of discussions and information exchange.

In the era of globalisation and cooperation in terminology, some terminology centres/units must cope with new languages, with teleworking staff, with challenges in coordinating various terminology units within a large organisation or within a cooperation project. One of the biggest issues is keeping track of discussions and common decisions. To meet this need some centres/units possess dedicated terminology forums; others conduct their internal projects, for example their terminology consolidation projects, in physical meetings or by circulating text documents and spreadsheets (cf. Chiocchetti & Ralli 2012: 32).

- the difficulty in involving domain experts and especially in having them formally involved in the workflow (cf. Chiocchetti & Ralli 2012: 28).

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Domain experts play a key role in ensuring that the terminology produced fully adheres to the linguistic usage of the respective community of experts in a given language. They also help directing the search for terminology, explain difficult concepts, revise and correct the content produced by the language experts. Not being familiar with the principles of terminology work, they need the terminologists' guidance to fulfil their tasks. Domain experts are not always available for all languages and subject fields treated or they simply do not have the time to provide input, since terminology is not part of their core work. For this reason, many terminologists express the need for a more formal involvement of domain experts in the workflow.

In order to find expert advice when needed, most terminologists have their private networks, both within their own institutions and beyond. Consequently, domain experts are very often involved with an informal procedure, i.e. via e-mail or telephone, based on goodwill and personal acquaintance. In-house domain experts might be more readily available than external contacts, but for some domains there simply might not exist any internal expert. To counter the constant need for (timely) expert advice by native speaker domain experts, some terminology centres/ units have tried to build a network of external specialists. A notable example is the network of Italian experts *Rete di Eccellenza dell'Italiano istituzionale* (REI)[8]. Its creation was triggered by the Italian Department of the DG Translation of the European Commission. The REI serves, among other purposes, also as a vast network of expert consultants for the Italian speaking translators and terminologists of the EU.

Once the expert is available, however, the problem of communicating the specific tasks that they are required to perform remains. Especially when domain experts are asked to revise terminology entries, it is good practice of some terminology centres/units to provide them with detailed checklists of what exactly they are supposed to examine and, if necessary, correct. This helps ensuring a constant level of quality and coherent revision across all languages and subdomains that are checked by different domain experts.

- the lack of IT assistance or difficulties in communicating specific needs to IT staff (cf. Chiocchetti & Ralli 2012: 32).

Dedicated tools or in-house programs designed to support terminology work can provide precious help, for example, by speeding up some activities, like term extraction, or by ensuring the retrieval, storage and dissemination of data. Still, many terminologists lament the lack of good tools, both commercial and own products, either because the tools need too much training in their opinion or because the tools seem to respond only marginally to their specific needs. The limited flexibility of certain software products is criticised, too. Finally, those who have in-house IT staff admit to having communication problems: they are not always able to express their needs in a way that would be understandable to a non-terminologist, as much as the IT staff have trouble in explaining technical issues and procedures to the terminologists.

Most large terminology centres/units established several decades ago have developed in-house tools for the management and publication of their terminology, especially because commercial tools were not readily available or not yet fully mature at the time. The in-house solution allows for maximum flexibility and independence, the lack of which is a much-lamented fault of commercial tools, next to the initial efforts needed to set, adapt or train any off-the-shelf tool (e.g. term extractors). However, the solution of building in-house tools for terminology calls for a regular cooperation with IT specialists (computer linguists, programmers, database managers, etc.) (cf. Chiocchetti & Ralli 2012: 32), with the ensuing difficulties of communication with non-terminologists. A surprising number of terminologists rely on common software to produce, share and update their terminology (e.g. spreadsheets, text files, etc.). This is obviously a sign that they feel the tools they possess do not meet their requirements. It is also true that terminologists mostly have limited or no competence in computer science and related technical issues and that they would need dedicated training in order to understand the full potential of the tools and how they can be employed to obtain satisfactory results.

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○ the limited input/feedback from users.

Terminology work is useful only if it meets the demands of the final users. However, if the target users – be they translators within the same organisation ,who the terminologists intend to support with their work, or the general public – fail in providing input on their specific needs and feedback on the outputs of terminology, the terminologists are left without clear indication on the quality of their work and on the future expectations of their target groups.

To avoid this detachment from users' needs the terminology centres/units that mainly serve as a support for translation often organise regular meetings with the translation units in order to collect their needs according to the languages, domains and types of texts they are dealing with. Some centres/units also try to anticipate future needs by meeting the writers of the original texts (e.g. the legal drafters) or by collecting information on which issues will be discussed and will need translation (e.g. new measures, upcoming campaigns, legislation that is being revised, etc.). In this way they strive to tune their terminology work to the real upcoming needs as much as possible (cf. Chiocchetti & Ralli 2012: 25, 30).

Information exchange with the end users also travels via other channels, such as terminology portals, feedback forms in terminological databases, terminology helpdesk services, etc. The secondment of rotating terminologists from translation units (where available), the "mandatory quota" of terminology work assigned to translators in some translation units or simply the writing rights given to translators in the terminological database are further strategies designed to keep the terminologists in constant contact with the users of terminological products. Some of these strategies seem to have triggered better results than others: while translator secondment seems to be evaluated quite positively, forcing a mandatory quota of terminology work upon the translators has not proven to be really effective.

3.2. Inter-institutional cooperation

In addition to the aspects considered in sec. 3.1., which apply also in case of inter-institutional cooperation, when separate organisations intend to join forces cooperation can become particularly daunting. In view of common terminology work or data exchange it will be useful to find a coordinator of the terminology projects and set up a team of experts from all participating organisations, with a clear definition of the roles, responsibilities and type of contribution. As in any other project, reasonable deadlines and clear work assignments for all participants help monitoring the work in progress and meeting the intended goal. Regular exchanges in physical meetings or with the help of communication tools (e.g. conference calls, forums) are a good occasion for discussion and information transfer (cf. Chiocchetti et al. 2013: 66 ff.).

Data exchanges and mergers require a lot of preparation work, which can be kept in reasonable limits if the source data has a high granularity, that is, if data categories are clear-cut and very detailed, so that no manual check and revision of "multipurpose fields" (e.g. "jumble" note fields) will be necessary before data export. Data that can be exported in TBX, the standard TermBase eXchange format, will definitely pose minor problems. In case of data mergers, the probability of ending up with many doublettes can be quite high. Manual or (semi-)automatic data cleaning and consolidation should be foreseen to minimise the annoying presence of doublettes.

Especially – but not exclusively – for data exchange, it might be necessary to sign a cooperation agreement taking into consideration copyright issues and data ownership (see 4.). In 1996 TermNet published a Guide to terminology agreements (Galinski & Goebel) that may serve as a reference and starting point in order to draft any specific agreement, which will further need to take into consideration the national legislation of all parties.

4. Legal protection of databases

The legal protection of databases is a complex issue, as:

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○ copyright protection for databases exists in various forms according to the national legislation or case-law (cf. Dir. 97/9/EC);

○ different levels of protection operate both on the data itself and on the structure (Chiocchetti et al. 2013: 64).

The need for legal protection of databases has its roots in the regulation of intellectual property[9] at international level (De Robbio 1999: 2). In this regard, the *Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS Agreement)*, administered by the World Trade Organisation (WTO) and adopted in Marrakech on 15 April 1994, is a fundamental milestone, as it aims, among other objectives, at protecting computer programs (as literary works) and databases (as intellectual creations):

(1) Computer programs, whether in source or object code, shall be protected as literary works under the Berne Convention (1971).

(2) Compilations of data or other material, whether in machine readable or other form, which by reason of the selection or arrangement of their contents constitute intellectual creations shall be protected as such. Such protection, which shall not extend to the data or material itself, shall be without prejudice to any copyright subsisting in the data or material itself. (TRIPS Art. 10)

The *World Intellectual Property Organization Copyright Treaty*, (*WIPO Copyright Treaty* or WCT), adopted in Geneva on 20 December 1996, further states that:

Computer programs are protected as literary works within the meaning of Article 2 of the Berne Convention. Such protection applies to computer programs, whatever may be the mode or form of their expression. (Art. 4)

Compilations of data or other material, in any form, which by reason of the selection or arrangement of their contents constitute intellectual creations, are protected as such. This protection does not extend to the data or the material itself and is without prejudice to any copyright subsisting in the data or material contained in the compilation. (Art. 5)

At European level, the legal protection of databases is treated in a specific EU directive on copyright law, Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996. This legislative act aims at harmonising the national regimes applicable to the legal protection of databases and introduces a new type of right, the *sui generis* right. The Directive protects databases, defined as "a collection of independent works, data or other materials arranged in a systematic or methodical way and individually accessible by electronic or other means" (Art. 1, para. 2). Therefore, a database can be "in any form" (Art. 1, para. 1), e.g. on an electronic medium, on paper, etc. The Directive does not apply to the software used in the making or operation of the database (Art. 1, para. 3) or to its content (Art. 3, para. 2). It concerns only the form, i.e. the structure or architecture of a database (Chiocchetti et al. 2013: 65).

Art. 7 of the Directive introduces the already mentioned *sui generis* right. This right is attributed to the maker of a database[10] in order "to protect the investment in making a database, i.e. collecting, verifying and/or presenting its contents" (Stockholm Network 2005: 7) against extraction or re-utilisation of the whole or of a substantial part of it (Art. 7, para. 2). This means that if there has not been a qualitatively or quantitatively substantial investment, the database will not be protected (Art. 7, para. 1).

In case of databases made available for the public, the maker of a database cannot ban the lawful user "from extracting and/or re-utilizing insubstantial parts of its contents, evaluated qualitatively and/or quantitatively, for any purpose whatsoever" (Art. 8, para. 1). In any case, the lawful user may not perform acts that could damage the interests of the maker of the database or conflict with normal exploitation of the database (Art. 8, para. 2).

The *sui generis* right can be transferred, assigned or granted under contractual licence (Art. 7,

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para. 3) and lasts for fifteen years with effect from the date on which the making of a private database was terminated or a database was made available for the public (Art. 10).

Summing up, the Directive pursues a double objective:

○ through the *sui generis* right it protects investments as such (e.g. human and financial resources, investments of time), unlike copyright law, which protects the creativity of an author and the structure of a database, but not the investment that went into collecting the materials (cf. Stockholm Network 2005: 7);

○ it provides "copyright protection for the intellectual creation involved in the selection and arrangement of materials"[11] (cf. Art. 3, para 1).

Tab. 1 illustrates the main features that distinguish copyright and *sui generis* right at European level:

Copyright (author's rights)	Database right (*sui generis* right)
Rights are owned by the author.	Rights are owned by the maker.
The author owns the exclusive rights to authorise ○ reproduction ○ translation, adaptation distribution to the public ○ communication to the public ○ any use of translations, adaptations and other arrangements of the copyrighted material.	The maker owns the rights to restrict ○ extraction ○ re-utilisation of the database.
Exceptions apply for ○ lawful users performing actions necessary for the access to and normal use of the contents of the databases (without authorisation) The Member States may provide for further exceptions for ○ teaching purposes or scientific research, as long as the source is indicated and to the extent justified by the non-commercial purpose ○ purposes of public security or an administrative or judicial procedure Additional exceptions might be traditionally authorised under national law.	Exceptions apply for ○ extraction and/or re-utilisation of insubstantial parts of the database ○ public lending The Member States may provide for further exceptions for ○ teaching purposes or scientific research (extraction and/or re-utilisation also of substantial parts of the database), as long as the source is indicated and to the extent justified by the non-commercial purpose ○ purposes of public security or an administrative or judicial procedure
Rights expire 70 years after the author's death, irrespective of the moment in time when the work was made accessible to the public.	Rights expire 15 years after creation

Table 1: Copyright vs. *sui generis* right (Chiocchetti et al. 2013: 65-66)

As stated also by Galinski & Gobel (1996: 20), it is very important that each institution owing or elaborating terminological data see their data as an essential contribution to the intellectual property of humankind. Therefore, it should be made available to users according to terms and conditions reflecting the nature of the data. However, it is of paramount importance that data and database owners are aware of the different levels of protection that apply to their content and database structure, in order to take them into consideration when publishing and exchanging data.

5. Communication in terminology

Irrespective of the type of collaboration – whether inter-institutional or intra-institutional – good communication in terminology is important for the following reasons (cf. Chiocchetti et al. 2013: 67):

- Making the stakeholders aware of the importance and usefulness of terminological activity.

- Strengthening the network with the people involved.

- Explaining methods and processes for implementing a terminology project according to the project schedule and the objectives defined. This is particularly important in case of inter-institutional cooperation, as different institutions that intend to cooperate could have diverging approaches concerning their data and their management strategies.

- Consulting, sharing information and data exchange, e.g. through physical meetings, discussion forums, dedicated platforms, etc.

- Making any contribution or data ownership visible in order to enhance motivation and identification with the terminological product.

Some interviewees outlined the difficulties in communicating the importance of terminology work in the translation and drafting process. In fact, communication problems often occur already at internal level. First, a strategy should be envisaged to make internal staff – be they translators, drafters or domain experts – recognise that terminology work is not an additional activity, but rather an essential part of the translation/drafting process and, at the same time, an investment that aims at making their work easier and more coherent. Next to successful internal awareness-raising initiatives, terminology work should be promoted externally, i.e. to the public.

A good communication strategy, needless to say, requires notable efforts and a lot of time. The results are usually visible in the medium and/or long term. The interviews conducted have shown some interesting initiatives in communicating terminology, such as (cf. Chiocchetti et al. 2013: 68):

- the internal promotion of terminology work through, for example, internal meetings

- the creation of dedicated terminology portals collecting glossaries, external links etc. in order to share resources

- the creation of a common electronic platform for regular exchange (e.g. forums, wiki-like applications, etc.) and discussion concerning terminology issues

- the external promotion of terminology work, i.e. to the general public (e.g. at university level) through terminology newsletters, terms-of-the-month initiatives, periodic dissemination of neologisms, etc.

6. Conclusions

The days when institutions worked mostly on their own and did not need to exchange data or disseminate their activities are probably gone. Nowadays, terminology is essentially a cooperative activity. Cooperation means planning together, coordinating activities, sharing resources,

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information and knowledge, exchanging data and experiences. This creates and strengthens group feelings and fosters the development of new ideas and perspectives. Working in and with a team allows focusing on specific aspects of terminology work, according to individual expertise and skills. In daily terminological practice, however, notable time pressure and shortage of staff do not always allow working with well-defined, separate roles and tasks. For example, as we have seen in 3.1., a terminologist might be in charge of coordinating a group of terminologists – thus acting as a terminology manager – and, at the same time, be supposed to perform his or her daily tasks concerning terminology elaboration.

The exchange of data between different institutions is a complex issue, too. From a legal point of view, copyright issues and data ownership cannot be overlooked and must be regulated clearly and explicitly in a specific agreement. From a mere technical point of view, data structures and data categories could differ. Consequently, it might be necessary to create a common database definition. This implies investing the time and efforts of qualified staff (e.g. staff with IT skills) to process and convert data.

Cooperation in terminology goes together with the need for efficient communication, both at internal and external level. Terminology is often seen as a by-product of translation, i.e. as something additional, not as a necessary complementary activity. As mentioned in sec. 5., specific strategies can be applied, first at internal level, to make the staff aware of the importance of terminology work in the translation/drafting process, and then at external level, e.g. by going public and making the database available to everyone, by sending out news on terminology and updates via mailing lists, etc.

Finally, in this paper we have given an overview over the instances of cooperation in terminology work from a theoretical and a practical point of view with the aim of better supporting the practical aspects of collaboration. This has been illustrated by discussing some specific issues, such as the levels of collaboration, the legal protection of databases and the communication strategies. Some aspects presented in this paper are further treated in the "Guidelines for collaborative legal/administrative terminology work" (Chiocchetti et al. 2013) that were produced as an output of the LISE project (see introduction).

7. Acknowledgements

8. Notes

[1] The Government of Canada's terminology and linguistic data bank, available online at http://www.btb.termiumplus.gc.ca.

[2] Terminology database of the Swiss Federal Administration, available online at http://www.termdat.bk.admin.ch.

[3] Inter Active Terminology for Europe database, available online at http://iate.europa.eu.

[4] Cf. http://iate.europa.eu/iatediff/brochure/IATEbrochure_EN.pdf (accessed 14 October 2013).

[5] The EuroTermBank project results in a centralised online terminology database for the languages of recent EU member countries, esp. Estonia, Hungary, Latvia, Lithuania, and Poland, with links to several other terminological databases and resources. It enables exchange of terminological data with existing databases, e.g. by establishing cooperation initiatives and aligning methodologies and standards as well as by designing and implementing exchange mechanisms and procedures (cf. http://www.eurotermbank.com, accessed 14 October 2013).

[6] International Network for Terminology, cf. http://www.termnet.org.

[7] International Information Centre for Terminology, cf. http://www.infoterm.info.

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[8] Cf. http://ec.europa.eu/dgs/translation/rei/index.htm (accessed 14 October 2013).

[9] Intellectual property "refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images, and designs used in commerce" (http://www.wipo.int/about-ip/en/index.html, accessed 22 October 2013).

[10] The maker of a database is "the person who takes the initiative and the risk of investment" (Dir. 96/9/EC, Preamble, p. 35) and does not qualify for copyright.

[11] Cf. http://europa.eu/legislation_summaries/internal_market/businesses/intellectual_property/l26028_en.htm (accessed 22 October 2013).

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Stockholm Network (2005). *What is the database sui generis right?* From the Selected Works of Estelle Derclaye. Issue 9, November 2005. Available online at http://works.bepress.com/cgi/viewcontent.cgi?article=1003&context=estelle_derclaye (accessed 18 October 2013).

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Terminology workflows in theory and practice

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Abstract. This contribution intends to illustrate the processes and roles involved in terminology work in real life scenarios. It is mainly based on 17 interviews with terminologists and terminology managers employed in the most important terminology centres in Europe and beyond, which were carried out between 2011 and 2012 within the LISE (Legal Language Interoperability Services) project. Next to providing tools aimed at improving the quality of terminological resources in legal and administrative domains, the project partners developed a set of Guidelines for legal and administrative terminology work, which give a detailed and wider picture of the issues treated in this article. In this paper particular attention is given to those aspects of practical terminology work that contradict common convictions, differ from terminology work in domains other than law and administration or partly clash against general terminology theory.

Keywords. Guidelines for legal terminology, LISE, roles in terminology work, terminology workflow, legal terminology.

1. Introduction

Besides discussing the fundamental methodology of terminology work, several authors of manuals on terminology describe the professional figures involved and the steps to be performed on a theoretical basis (see e.g. Arntz et al. 2002, KÜDES 2002, Rey 1995, Sager 1990). The practical application of this theoretical framework however sees a less clear-cut definition of roles and working steps, where often one person takes over several roles and the single workflow tasks are not always kept well separated. Neither are they perfectly supported by adequate tools.

The following sections present some of the results of a study carried out within the EU-funded project LISE (Legal Language Interoperability Services). These results may contribute to filling the gap – at least partly – between the theoretical framework and its practical application in terminology by analysing and modelling real life workflow scenarios, with particular attention to the legal and administrative domain. The data was gathered during interviews with terminologists and terminology managers employed in several terminology centres/units in Europe and beyond, which work at different levels (i.e. at local/regional, at national and at international level).

1.1. Method

This paper reports on the insights gathered with the help of 17 semi-structured expert interviews carried out between 2011 and 2012 with expert staff of 16 terminology centres/units[1]. Following a definition by Meuser and Nagel (cf. 1991: 443), we considered experts as part of the sphere of activity that forms the object of research. The 16 terminology centres/units addressed mostly belong to organisations and institutions acting at local/regional, national and international level and are mainly, but not exclusively, located in Europe. The selected sample aims at representing all different types of terminology work and approaches that can be found in literature (cf. Wright and Budin 1997: 1 ff.): monolingual vs. bilingual/multilingual, prescriptive vs. descriptive, translation-oriented vs. multipurpose, ad-hoc vs. systematic vs. text-based, proactive vs. a

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posteriori terminology work. The sample consists of international institutions (e.g. FAO), supranational institutions (e.g. EU institutions), governmental bodies (e.g. ministries of foreign affairs), regional bodies (e.g. Canton Bern) and other organisations (e.g. TNC) (Chiocchetti et al. to be published).

Expert interviews can be conducted with different techniques, i.e. with an open, a semi-structured or standardised approach. The first technique gives both parties the most freedom, the second follows a predefined interview protocol, while the third uses both pre-formulated questions and answer options (cf. Froschauer & Lueger 2003). For this study we chose the second approach, using an interview protocol with questions investigating general aspects, methodology, terminology management, terminology management systems and terminology planning, but still allowing the interviewees to talk freely on the given topics.

Nearly all of the interviews were conducted face-to-face. Only one person was contacted via conference call. The interviews were recorded, provided that the interviewees had granted their consent to do so and later transcribed to facilitate the analysis (cf. Chiocchetti & Ralli 2012: 11; Chiocchetti et al. to be published).

2. The terminology workflow

1. Based on the interviews it can be stated that the terminology elaboration workflow depends on various factors, mainly: the purpose of terminology work (e.g. standardisation-oriented or translation-oriented), the organisational structure (e.g. single terminologist, team), the job profiles involved (e.g. terminologist, translator/ terminologist, lawyer-linguist), the stakeholders of terminology (e.g. in-house, intra-institutional, inter-institutional), the stages in text/translation production when terminology is produced (before, during and after text/translation production), the number of languages (monolingual, multilingual terminology work) (cf. Wright and Budin 1997, 1 ff.; Lušicky and Wissik 2013, Chiocchetti et al. to be published). Disregarding single exceptions and peculiarities, the core steps that are common to every process of terminology elaboration can be summed up as follows (cf. Chiocchetti et al. 2013):

   ○ needs analysis

   ○ documentation

   ○ term extraction

   ○ term selection

   ○ elaboration of terminological entries

   ○ revision and quality assurance

   ○ dissemination

   ○ maintenance

Prescriptive or standardisation-oriented terminology has a further step before dissemination, i.e. standardisation. As standardisation-oriented prescriptive terminology work follows particular rules[2] it will not be discussed in detail here, while we will treat all other steps.

2.1. Needs analysis and defining priorities

An initial needs analysis allows defining which type of terminology work is necessary in order to meet the needs expressed (e.g. descriptive or prescriptive, ad-hoc, proactive or systematic terminology work). Two parameters are especially important in driving such decisions: the time frame and the specific terminological issues that need to be addressed. For example, if during translation work (or any other activity) a specific terminology problem arises on a

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short term basis and the terminological resource in question proves to be incomplete, i.e. does not offer a response to the specific issue, the solution would lie in ad-hoc terminology work. This means that the terminology is compiled *during* translation work or any other activity it serves. In another scenario terminological needs may arise on a medium or long term basis, for example, whenever the subjects of texts to be translated are known in advance, but the terminological resource concerned results incomplete concerning specific subjects or terms. In this case, proactive terminology work would offer the best approach to the given needs. That means that the terminology is compiled *before* translation work or any other activity it serves. The third scenario applies when one or several specific domains and/or languages are missing in a terminological resource: a specific terminology issue must be faced on a long-term basis. The right solution in this last scenario would be systematic terminology work. Also in this last case terminology is elaborated *before* translation work or any other activity it serves (cf. Chiocchetti et al. 2013: 15 ff.).

The interviews have shown that most terminology work takes place on an ad-hoc basis, so to say "just in time". This is underlined by several interviewees: "There is a lot of ad-hoc work that is going on in the units" (INT6)[3]; "[…] das Mail ist um die Mittagszeit reingekommen, also 24 Stunden Zeit, das in fünf Sprachen abzuchecken" (INT10); "die alltägliche Arbeit ist Ad-hoc-Terminologie oder, wie mein Schweizer Kollege das nannte, auf Englisch sehr schön: *just-in-time terminology*" (INT2). Some terminological units strive to do proactive terminology work: "We try to be proactive, that is, to guess what is going to be dealt with, what kind of texts [we are] going to be translating in the units" (INT6); "especially the proactive terminology work, we do [it] for the translators" (INT7). Very few can actually dedicate their time to systematic terminology work: "Wir arbeiten nach Sammlungen, weil wir thematisch arbeiten. Eine Sammlung deckt meistens ein Untersachgebiet ab" (INT12).

It is also possible for one terminology centre to cover all different types of terminology work, as INT9 describes: "[…] präskriptiv oder deskriptiv, genau, *ad hoc* oder systematisch, ganz genau. Also da muss ich sagen, im Prinzip von allem etwas, wenn man so möchte" (INT9).

2.2. Documentation

During the documentation phase, the sources of terminological information are collected: relevant documents, standards, handbooks, specialized dictionaries, etc. Domain experts may serve as a source of information, too. Some terminology centres/units regularly refer to experts of the specific subject field they are dealing with: "If we work with a specific department, we will have subject-field experts from that department […]" (INT17).

According to the purpose, content and target users of terminology work, some types of sources will be considered more or less relevant for information retrieval and more or less authoritative. Not all of the sources are available in digital form, but some terminology centres/units create and use electronic corpora.

2.3. Term extraction and term selection

The extraction of terms from the collected documentation can be performed either manually, semi-automatically or automatically with the help of dedicated tools (cf. Chiocchetti et al. 2013: 21). Some terminology centres/units also use corpus search tools for term extraction or collocation extraction: "Was wir jetzt gerade anfangen, ist [name of a commercial term extraction tool] [zu gebrauchen]" (INT10). However, most of the interviewees state that they prefer manual term extraction, mostly because the extraction tools they tested did not fulfil their expectations: "Die Auswertung der Texte, die machen wir von Hand, weil ich die ganzen Extraktionstools, die es jetzt gibt, die finde ich nicht so wahnsinnig... Also da ist mir das Rauschen noch zu groß und solche Geschichten. Das machen wir von Hand […]" (INT11). Others stress that it takes too much effort to train the tools:

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> Wie gesagt, automatische Extraktion wird bisher auch nicht betrieben. Wir hatten einige Male versucht, Tools zu testen, jetzt bei uns intern, in Zusammenarbeit mit Anbietern von solchen Tools oder Entwicklern, und waren jedes Mal zu der Erkenntnis gekommen, damals zumindest, dass der Input, der erforderlich wäre, um diese Tools zu erziehen, so groß wäre, dass wir also besser dran sind, wenn wir einen [Stift] nehmen und einen Humanterminologen oder -extraktor, der sich dann den Text durchsieht und das, was er für relevant hält, einfach kennzeichnet, damit wir es dann nachher auch manuell extrahieren können. (INT9)

The results of both (semi-)automatic and manual extraction can be compared "And then we start a project and, since our unit is responsible also for exploring tools for automatic term extraction, we try out these tools and we compare [their results] also with [the results of] manual extraction." (INT7). Only few interviewees state that they have not tested any term extraction tool, because they believe these tools do not suit their needs "Nein, also das mache ich nicht mit einem Tool. Ich hatte es mir überlegt, aber ich denke, für unsere Bedürfnisse ist es, ist [automatische Extraktion] nicht geeignet" (INT14). The general tendency is that most terminologists would like to have an extraction tool that works well without needing a lot of specific training, as INT9 puts it: "[E]in Extraktionstool, das tatsächlich […] funktioniert, ohne zu viel Input zu erfordern".

After the extraction phase, no matter whether tools are or are not used, the resulting candidate terms have to be validated in the term selection phase by terminologists or domain experts in order to be further elaborated and included in the terminological database.

2.4. Elaboration of terminological entries

The elaboration of terminological entries is one of the most studied and documented workflow steps in terminology work (cf. e.g. Arntz et al. 2002, KÜDES 2002: 27 ff., Rey 1995:135 ff., Sager 1990:130 ff.) and will therefore not be illustrated in detail here. In brief, during the workflow step in question the terms chosen for further elaboration during term selection become part of terminological entries in a terminological resource. Further information concerning, for example, the conceptual or linguistic level is added, i.e.: domain attributions, definitions, contexts of use, equivalents in other languages, synonyms and variants in the same language, sources of definitions and contexts, linguistic information (e.g. grammatical information), any other additional information (e.g. notes on various aspects) as well as administrative information, etc. (cf. KÜDES 200: 27 ff., Chiocchetti et al. 2013: 23 ff., Chiocchetti et al. to be published). One interviewee briefly reports on this workflow step:

> Ein erster Schritt: Der Verantwortliche erarbeitet die Einträge in allen Sprachen […], systematisch für jeden Eintrag eine Definition, […] da, wo es nötig [ist], eine Zusatzerklärung, entweder zum Gebrauch oder zum Inhalt, und bei allen natürlich auch Quellen. (INT12)

Also INT 8 reports on how a past project was carried out:

> We started to choose concepts, to find all the designations possible for this concept. After we have compared it, done a conceptual tree, step by step. After the conceptual tree, we created an entry in our database, entry with a definition, with terminological reference… And after that we worked with other lawyer-linguists from other units. We had a meeting each 15 days in order to explain the notion in the French system, in the Spanish system, to speak with them, to compare, to know if we take, we don't take [the terms in question]. If the conceptual tree can be accepted by them or not.

2.5. Revision and quality assurance

Revision usually considers three different aspects, either in one single stage or in different stages that may be assigned to a number of people with different roles and profiles, depending on the internal organisation of the terminology centre/unit and on the scope and purpose of terminology work (cf. Chiocchetti et al. 2013: 28 ff., Chiocchetti et al. to be published):

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- ○ linguistic check, to ensure the linguistic correctness of the entry (e.g. typos); INT10 stresses that native speakers are of paramount importance in this phase: "Wichtig ist einfach, dass zum Schluss alle Sprachen von jemandem kontrolliert wurden, der auch muttersprachliche Kompetenzen hat, das ist die Idee".

- ○ formal check, to make sure that all formal rules have been respected (e.g. completeness of the entry, form of the definition, correctness of source quotations, working cross references);

- ○ content check, to verify whether the concepts are defined properly, the equivalents or the synonyms/variants are correct, etc.

Revision is an essential step to guarantee a high standard of any terminological product. Some terminology centres/units have dedicated staff, as INT6 explains: "in the units, you have one head of unit, one quality controller and the rest are translators. Translators, revisers. The quality controller is in charge of monitoring quality in the unit and sometimes it's a person that is very involved in the terminology, not always."

2.6. Dissemination

The last step – and one of the most important ones – in the terminology workflow is dissemination. The elaborated terminology should reach the intended end users, usually translators, interpreters, technical writers, legal drafters and/or the general public. Depending on the purpose of terminology work and on the type of end users, the elaborated terminology may be disseminated via different channels: in public terminological resources, in internal terminological resource, in dictionaries (paper or online dictionaries) or in thematic glossaries and lists of terms (cf. Chiocchetti et al. 2013: 38; Chiocchetti et al to be published). INT17, for example, explains that their terminological database is "our tool that we disseminate everything and in every possible way".

2.7. Maintenance

Maintenance has no fixed position in the workflow, in fact, it can occur at any moment in the workflow cycle. Its frequency depends on the terminology centre/unit: it might take place e.g. on a daily or on a monthly basis or whenever a certain step in the terminology elaboration process has been completed. Maintenance activities can be event-driven (like a spelling reform or legal reforms) or can be motivated by the need to ensure and maintain the quality of the terminological resource (cf. Chiocchetti et al. 2013: 30-31, Chiocchetti et al. to be published). Maintenance also involves the consolidation of a terminological resource, the deletion of double entries, the management of legacy data, the merging of entries etc., as the following two quotes show:

> [W]e send out consolidation projects, that is, lists of entries […] with an indication of those that should be completed by the units. […] [W]e identify entries that should be deleted or merged into what we call the primary [database], and that is one way of getting everybody to work on the same entries instead of having lots of bilingual entries […]. (INT6)

> […] then sometimes it happens that they identify long lists of duplicates within a domain. And then they send us the list: "Could you please delete or merge your data [i]nto ours, so that we could eliminate a couple of duplicates in this area", etc. etc. So this is the cleaning process. (INT8)

The interviewees have underlined that maintenance is extremely important for the quality of a terminological resource, but that it costs a lot in terms of time and financial resources: "Konsolidierung einer Datenbank ist extrem kostenaufwendig, und andererseits auch extrem wichtig natürlich […] (INT5)".

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3. Roles involved in terminology work

Contrary to common belief and to the experience of some professionals ("The worst thing about the job is the solitude of working alone"[4]) terminology work is usually performed in a team. Ideally, people with diverse linguistic, professional and technical competences cooperate and exchange information to meet high qualitative and quantitative requirements.

In this section, we briefly illustrate the main roles involved in the terminology workflow described in section 2, their activities and competences. In daily terminological practice, however, not all roles are kept strictly separate and only a limited number of large terminology centres formally distinguish between all the roles that we present, grouped in clusters, in the following subsections.

3.1. Staff with terminology-related expertise

"Staff with terminology-related expertise are familiar with terminology theory and practical terminology work" (Chiocchetti et al. 2013: 41). They are terminologists, senior terminologists, translator-terminologists, quality controllers and trainees who take over the research and documentation of designations used in one or more specific domains in one or more languages. The results of their activity are collected in terminological resources that contain the designations, together with other relevant concept-related or term-related information. They are the main actors within the terminology workflow.

Staff with terminology-related expertise are involved in all steps of the workflow (cf. KÜDES 2002, RaDT 2004, Chiocchetti et al. 2013: 43). During needs analysis they anticipate future needs, collect expressions of need from users or otherwise receive indications on texts/domains to be processed terminologically. In the documentation phase they retrieve and select the reference material that will be used for terminology work in the source and target language(s). They also consult written sources or domain experts (see 3.3) to gather information on specific domains or terms. Then they extract terms from the selected reference material, either manually or (semi-)automatically with the help of dedicated tools, during the term extraction phase. INT2, for example, uses a commercial tool: "Das Erste, was ich machen werde, ist [name of the commercial tool] [einzusetzen]. Diese Software holt einfach alles raus, [auch] was wir schon haben[; …] das kann man [dann] vergleichen mit der Termdatenbank." From the lists of candidate terms resulting from the previous phase they choose the terms (term selection phase) to be treated during the subsequent phase of elaboration of terminological entries. Staff with terminology-related expertise are mainly responsible for this latter step of the workflow: they compile and update terminological entries in all their parts, create concept systems, propose definitions whenever necessary, find equivalents to be used in translation, spot terminological gaps, suggest translation proposals, propose/create new terms, product names, etc. Often they discuss and consult with other team members and roles in the workflow to complete this phase. For example, INT1 stresses that "wir eigentlich […] mit den Fachleuten immer die Terminologie – die [dann] bei der Fachübersetzung einfach eine große Rolle spielt – überprüfen." During revision and quality check they revise terminological material according to linguistic criteria – preferably in their native language – and to formal requirements, thus acting as quality controllers. They also clean and consolidate terminological collections and databases. If their terminology work is standardisation-oriented, they usually prepare input material for the standardisation process and assist the standardisers. In the words of INT14: "Jetzt bin ich ja der Sekretär des [Standardisierungs-]Ausschusses, mache die Recherchen und bereite alles vor und, also, bin für die Datenbank zu[ständig]". Finally, during dissemination they provide terminological support for all end users, edit or proofread texts from a terminological point of view, implement the terminology policy of their organisation and take care of other dissemination activities, such as terminology newsletters, term-of-the-day blogs etc. INT7 remembers how a former staff member suggested that: "we should edit a newsletter every three months to print it. And we have done it now for some years and it has results".

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3.2. Staff with management-related expertise

Staff with management-related expertise are familiar with terminology work but also possess specific project management skills (cf. Chiocchetti et al. 2013: 44). They coordinate terminology units, language specific sections and specific projects, liaising with top managers and decision-makers within their organisation, as well as with customers and end users. For this reason, they should possess good communication and team working skills.

Staff with management-related expertise usually supervise and direct all relevant tasks and activities of every step in the terminology workflow (cf. Chiocchetti et al. 2013: 45-46). INT6 explains that at their terminology unit "there are two terminology coordinators. I deal mostly with [the] technical part and training and my colleague, she deals more with the projects, with the content." In the needs analysis phase they may acquire terminology projects to meet current or future needs. To support documentation they may have to address possible copyright issues related to documentation or text corpus compilation. Concerning term extraction, they may be called to decide on the acquisition of specific tools. During the phase of elaboration of terminology entries, they usually cooperate in the planning, data modelling and evaluation of terminological databases, coordinate staff members, different groups, departments and institutions or organise and supervise data exchanges. During revision, they assess the quality of terminology work and coordinate the different types of revision activities. In standardisation-oriented terminology work, they may be in charge of developing the terminology policy of an organisation. Finally, in the dissemination phase they liaise with end users and customers and take care of possible copyright issues related to data publication and data exchange. As INT13 puts it: "I have to do a lot of management, administration, database and convincing..."

3.3. Staff with domain-related expertise

Staff with domain-related expertise are deeply familiar with one or more specific subjects that are being processed terminologically. They are domain experts who act as revisers and consultants for terminologists, but rarely work as terminologists proper. They are especially important in standardisation committees, thus taking over the role of standardisers (cf. Chiocchetti et al. 2013: 46). Domain experts are mostly monolingual, as they contribute to terminology work with their knowledge in their native language. As INT7 puts it, "subject-field experts are rather consulted language specifically by the terminologists […]". INT11 confirms this: "Also, wenn möglich, möchten wir eine Expertengruppe haben, mit einem Experten pro Sprache". In legal translation and terminology there is great demand for domain experts who have a good command of more than one language or a double degree in legal and linguistic studies. These professionals are called jurilinguists or lawyer-linguists.

> A jurilinguist provides advice related to the terminology, syntax, phraseology, organisation of ideas and style that are appropriate to legal language and, specifically, to legislative language and to the subjects dealt with, and also, within the context of bilingual co-drafted Bills and regulations, comparison services to ensure equivalenc[e] of the [different language] versions. (Poirer 2009)

Domain experts give important contributions in several steps of the terminology workflow (cf. KÜDES 2002: 46, 66, Chiocchetti et al. 2013: 47-48, RaDT 2013). They may voice formal or informal requests of terminology work as part of needs analysis. During documentation, they usually suggest or select the material to be used as reference for terminology work. They may participate in term selection by choosing which candidate terms should be further processed. Their advice is extremely useful during the following core phase of the workflow, the elaboration of terminology entries. For INT8 "it's really important to have a lawyer here [at the terminology unit], because sometime[s] we have a sensitive question that just a lawyer can explain." INT9 shares this opinion: "[W]enn es sich um Kfz-Technik handelt, beispielsweise, da denke ich, muss man dann tatsächlich einen Fachmann in dem Bereich haben […]". For

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example, domain experts check concept systems, consult on content, create definitions and suggest or approve translation proposals. During revision and quality check, their domain knowledge allows attaining a high standard of quality of terminological entries, as the content is proven to correspond to the actual usage within the community of experts. INT11 gives concrete examples of what the domain experts should check: "Der Experte muss schauen: Stimmt die Definition? Stimmt die Anmerkung?" The contribution of staff with domain-related expertise in the terminology standardisation phase is absolutely necessary. In their role of members of standardisation committees, they suggest standardisation proposals, study, discuss and integrate or modify terminological material, validate standardised terms and equivalents. Finally, they play a role in dissemination, too, especially by applying the results of terminology and/or standardisation work in their daily practice within the community of experts.

In daily practice, domain experts rarely possess terminological background. Therefore, it is important to give them instructions on what a designation is or on how a terminological definition has to be formulated. This is underlined, for example, by INT11: "[W]enn es systematisch[e Terminologiearbeit] ist, habe ich natürlich eine Anleitung für Experten. Ich habe eine Anleitung, wo ich sage: Hört mal, eine Benennung ist das und das und das, und darauf kommt es an. Und eine Definition sollte nach Möglichkeit so und so und so..." Ideally, experts should be involved in the terminology workflow formally and on regular basis. In an ideal situation, they should be in-house domain experts. In rare cases, due for example to the peculiarities of the domain treated, this is indeed the situation, as it is for INT8: "[E]xperts are our *correspondants*. It is not a problem to have an expert. Because if I know that there is an expert in criminal law, I can ask a lawyer-linguist that works in a unit". In most cases, experts are involved informally, i.e. on the basis of personal contacts and goodwill (Chiocchetti & Ralli 2013: 28). This is true for INT4 "[…] Schön ist, wenn man einen Kontakt [mit Fachexperten] hat. Dann geht es am einfachsten. Aber da muss man sich das Organigramm raussuchen und schauen, raten, wer dafür zuständig ist und fragt sich eben durch. Das ist langwierig, aber es ist kein anderer Weg". INT11 shares the same experience:

> Ich kenne ja nicht viele Experten, die wirklich ganz offiziell eingebunden sind als Experten für die Terminologiearbeit. Ich habe jede Menge Experten. Hier drin sind nur Experten sozusagen. Aber die wissen eigentlich... Die wissen das nicht, dass sie Experten sind, also man ruft sie einfach an und sagt: „Ja, hören Sie mal, ich habe erfahren, dass Sie sich mit Lawinen auskennen." „Ja?" „Können Sie uns sagen, was eine Schleiflawine..." [ist?]. (INT 11)

3.4. Staff with expertise in information technology

Staff with expertise in information technology – short: IT staff – administer, maintain and develop tools for terminology work and perform specific tasks. They act, for example, as database administrators, tool developers or IT specialists in general. They can be terminologists with a technological background, but more often they have other profiles, being information scientists, computational linguists, computer programmers, etc. (cf. Chiocchetti et al. 2013: 49).

Within the terminology workflow, they can offer valid support in every single phase (cf. DTT 2010: M6-3, Chiocchetti et al. 2013: 50). For needs analysis they can develop or provide tools to collect and store (external) input on terminological needs. Much can be done in the documentation phase with IT skills, for example, by developing and fine-tuning tools to automatically harvest domain-related relevant texts on the web or by creating domain-specific monolingual or multilingual (aligned) text corpora. The same holds true for term extraction, where IT staff can develop or fine-tune tools for term extraction and develop or provide tools for automatic retrieval of translation proposals from a variety of language resources (e.g. text corpora, translation memories). In the words of INT17: "We do bitexts[5] and things like that […] with our informatics, also a group within the translation [unit], because our tools are mainly in-house tools." During term selection, providing a way of automatically checking lists of term

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candidates against the terms already present in a terminological database is a valid support offered by IT staff. Other activities serve the core phase of terminology work, such as performing or assisting imports/exports of data and batch changes, maintaining the database management system, converting data into desired formats (e.g. for import/export, publication), etc. INT15 explains: "There is a special program that was devised to enter terminology at [the University the terminology unit cooperates with]. They have a good computer expert […]. He sort of writes programs for them." INT10 similarly feels that the desires of the terminologists can be discussed with their IT experts: "[W]ir möchten diese Funktionalität dann in der Datenbank haben […] da sind wir jetzt mit dem Technikern momentan am Schauen." For revision and quality check they can provide or develop tools for (semi-)automatic consistency checking and quality assurance as well as exports of specific subsets of terminological data, e.g. to be handed over to revisers. Also the standardisation phase can profit from professional IT support, for instance, through tools that assist in the standardisation workflow (e.g. discussion forums). INT17 informs: "We also work with wiki. Whenever there is a committee or we have to share with experts from outside, either we work within a regular committee and we sit around a table and all that, or, more and more, we are working with a wiki tool, a collaboration tool." In the last phase of dissemination, IT technology may assist data publication – both online and on paper, the collection of user input and feedback and the production of user statistics. Improving the user-friendliness of terminology dissemination tools (e.g. the online version of a terminological database) for end users of terminological data is particularly important for the success of the dissemination phase.

4. Needs expressed

The interviewees were asked to list the first things they would wish for to make their work better. The most common desires can be grouped into the following categories (cf. Chiocchetti & Ralli 2012: 33 ff.):

4.1. Staffing

Most of the interviewed institutions would like to "have more people" (INT17), because they "are completely down-sized" (INT13). For this reason, they have "to do multitasking" (INT13) in their daily terminology work. In many cases, this shortage of staff is due to budget limitations and the growing cuts in human resources. Related to staff, some organisations ask for better-qualified staff: not all people working as terminologists have a terminological background. More often, they are "self-made terminologists" (INT9), i.e. they developed their terminology competences through learning by doing and targeted training courses. The limited availability of qualified staff is due to the lack of university courses and specific trainings focused on terminology (Chiocchetti & Ralli 2012: 34).

4.2. Time

"Nobody has much time for terminology" (INT13). Often, terminology work is seen as a by-product of translation:

> Erstens – was man wissen muss, wir sind natürlich zunächst ein Übersetzungsdienst, das heißt, unsere Terminologie steht im Dienste der Übersetzung – ohne die Übersetzung würden wir keine Terminologie machen, und es gibt sehr selten bei uns Projekte, die wirklich reine Terminologieprojekte sind, wo einer unserer Kunden […] zu uns kommt und sagt: „Wir bräuchten ein Glossar, das wir auf unserer Website veröffentlichen wollen. Könnt ihr das für uns übernehmen?" Das passiert ein-, zweimal im Jahr. Normalerweise ist Terminologie entweder Nebenprodukt, aber eigentlich so mehr das … ein Hilfsmittel im Prinzip für die Übersetzung. (INT5)

Lack of time and different priorities often do not allow systematic work and in-depth researches. For this reason, most of the interviewed institutions do day-by-day terminology, ad-hoc terminology or, more rarely, ex-post terminology.

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4.3. Experts

Many terminologists wish to work in close cooperation and within a formal framework with domains experts. In the words of INT14:

> [E]in schönes Team von juristisch vorgebildeten Experten, die mir bei den Recherchen helfen können, die von mir aus Experten in bundesdeutschem, in schweizerischem, in Südtiroler Recht, in österreichischem Recht sind, die da [bewandert] sind und eben wissen, an welcher Stelle sie suchen sollen. (INT14)

This problem is partly due to the fact that many institutions lack resources for terminology work.

4.4. Dissemination

Many institutions "need to have terminology more visible, […] also at the university level" (INT17) and make their work more widely known, convey its importance to everyone (cf. Chiocchetti & Ralli 2012: 35).

5. Outlook

Notable time pressure and shortage of staff often do not always allow following the workflow steps we have described very strictly. Furthermore, the way terminology work is performed always depends on various factors, such as purpose, target users, domain(s), language(s) treated, financial limitations, availability of reference material, etc. Nonetheless, this paper illustrated the (ideal) terminology workflow, i.e. the processes and roles involved in it, and explained – on the basis of the interviews conducted – which aspects distinguish theory from practice in order to better support practical collaborative terminology work. Some aspects illustrated in this paper are further treated in the "Guidelines for collaborative legal/administrative terminology work" (Chiocchetti et al. 2013) that were produced as an output of the LISE project (see introduction).

6. Acknowledgements

7. Notes

[1] The results of the interviews are further confirmed by an online survey, which was disseminated between mid-December 2011 and end of March 2012 through several large terminology networks and associations (e.g. the International Network for Terminology TermNet, the International Information Centre for Terminology InfoTerm, etc.).

[2] As regards standardisation cf. Chiocchetti et al. 2013: 31 ff., Chiocchetti et al. 2006, Ralli & Stanizzi 2008.

[3] The interviews have been anonymized and numbered progressively. Here we referred to them as INT1, INT2, INT3, etc.

[4] http://www.sacareerfocus.co.za/displayJobProfile.php?id=527 (accessed 30 January 2013).

[5] i.e., aligned parallel texts.

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When IATE met LISE: LISE clean-up and consolidation tools take on the IATE challenge

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Abstract. In 1999, the European Union translation services undertook a rather ambitious endeavour, namely, the "Inter-Active Terminology for Europe" (IATE) project was launched with the objective of creating a single terminology database for all the EU institutions and agencies. The plan was to merge all terminology resources into a web-based and fully interactive database to be shared by all the EU language staff.

In 2004, IATE officially replaced the existing legacy termbases. Although the project has achieved most of its objectives, merging several terminology resources also brought problems, or simply made them more visible. For example, users may find duplicate entries or quality problems due to character conversion issues, missing key data (domain, source), misspellings, etc. Despite the efforts to automate the detection of problematic content, the consolidation of legacy terminology in IATE still remains a challenge for all participating services.

In 2011, the IATE project joined the LISE user group. LISE provides IT tools conceived to tackle the kind of issues IATE is faced with, including semi-automatic consolidation of linguistic resources (detection of duplicates) and identification of other possible quality problems, i.e. misspellings, mistranslations, missing domains, wrong language, etc. In 2013, EU terminologists were able to test these tools and evaluate their potential contribution to the IATE consolidation activities. This paper provides more details on all of the above issues.

Keywords. Automation, clean-up data, conversion errors, data consolidation, domain, doublets, duplicates, EU institutions, IATE, legacy data, legacy terminology databases, LISE project, LISE tools, redundant concepts, terminology database maintenance.

1. The IATE project

1.1. Background

The EU database IATE was created almost 14 years ago with the aim to merge the terminological resources of several EU institutions and bodies into a web-based and fully interactive database to be shared by all the EU's language staff. Until then, most of the EU institutions and bodies with a translation service had developed and maintained their own terminology resources; however, the data were not fully shared (e.g. TIS by the Council of the European Union, Euterpe by the European Parliament, Eurodicautom by the European Commission, and Euroterms by the Translation Centre for the Bodies of the EU).

The IATE project was coordinated at the beginning by an interinstitutional working group, and since 2009 by an IATE Management Group with representatives from all the project partners: the European Parliament, the Council of the EU, the European Commission, the Court of Justice, the Court of Auditors, the European Economic and Social Committee, the Committee of the Regions, the European Central Bank, the European Investment Bank, and the Translation Centre for the Bodies of the EU.

After defining the technical specifications of the future IATE and reaching a consensus on the data structure (which needed to cater for different needs), working methods and content from the different partners, the development phase started in 2000 and the first legacy data was imported in 2003.

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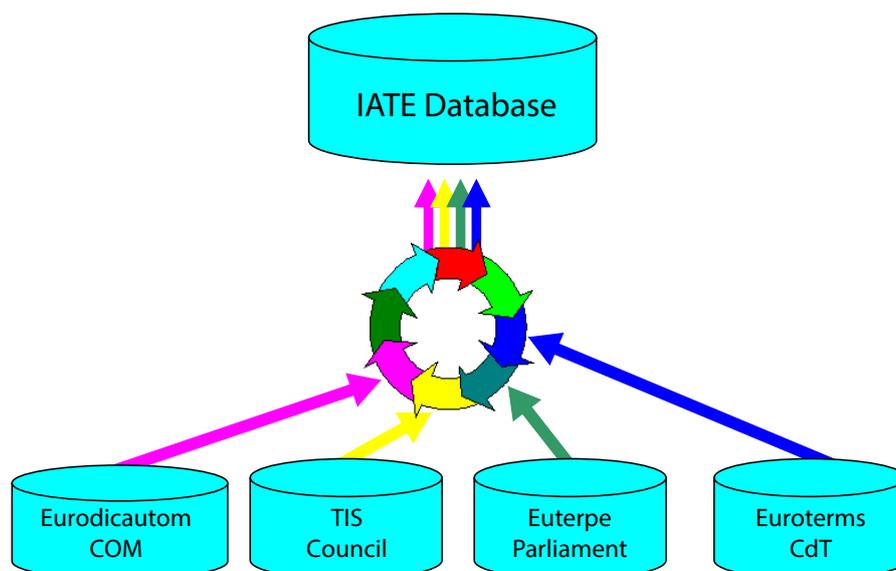
Figure 1: Legacy databases from several EU institutions were merged into IATE

Following a test period with a restricted number of users, in the summer of 2004 IATE officially replaced the existing legacy databases and became the sole and central repository for EU terminological data, thus making relevant terminology available in a shared and interactive way. Cooperation and coordination among the different EU services became essential and reduced the duplication of efforts thus making terminology work more efficient. Several interinstitutional working documents were drafted to agree on a set of best practices and guidelines with a view to a common and harmonised approach to terminology work in IATE.

The closing of the online access to Eurodicautom also increased the demand for an open version of IATE for the general public, which was released in June 2007. The IATE public version contains validated and non-confidential data in the official EU languages which is transferred periodically from the IATE internal database, and comprises only consultation features. The internal version is much more powerful with the features of a fully-fledged terminology management system (i.e. consultation, editing, creation, merging, validation workflow, import, export, user management, feedback management, statistics, etc.).
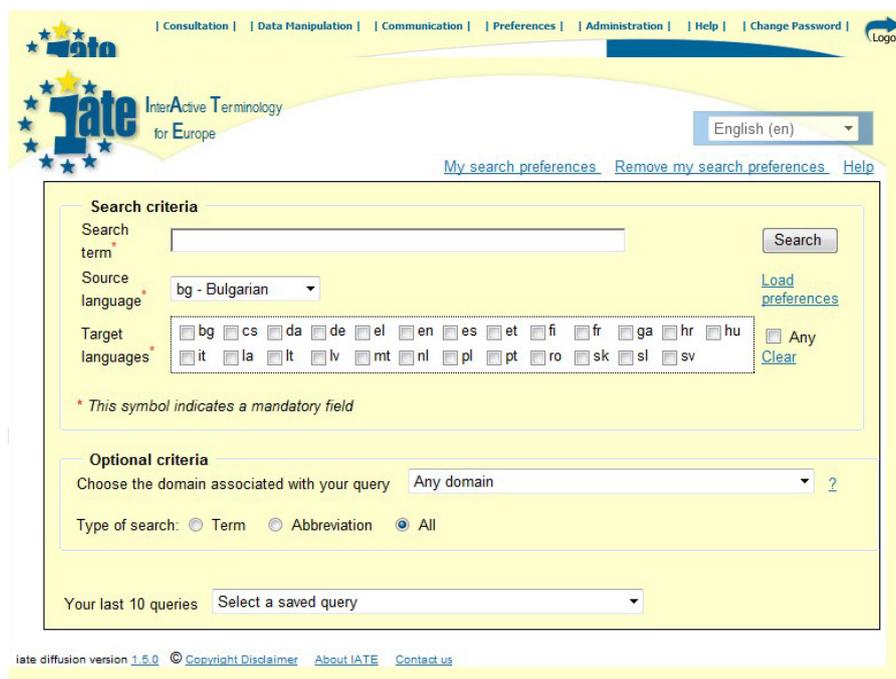
Figure 3: Sample search view in IATE public

1.2. IATE figures

IATE offers at the moment 1.4 million multilingual entries and nearly 9 million terms.

The internal database receives around 40 000 queries per day from EU staff (from mainly translators and terminologists, but also experts and author services), while the public version receives 140,000 queries per day from nearly 200 countries[1].

1.3. Evolution of IATE data

The huge amount of data in IATE calls for ongoing consolidation and updating tasks, which are very challenging given the existing resources. There is a large amount of legacy data that has neither been revised nor updated since it was imported into IATE. There are several reasons for this: domains and needs have evolved and some older collections are no longer relevant (in the domain of IT, for example). The availability of online resources since the advent of the digital era has also changed the approach towards "added value" of data and what should and should not be in IATE. The multilingualism of IATE data –which reflects the multilingual policy of the EU and the different enlargements–, has also expanded significantly, from 11 languages in 2000, when IATE was conceived, to 24 languages in 2013.

Therefore, efforts are not only being put into consolidating duplicates and updating legacy data, but also into covering new domains, dealing with ever-increasing specialised terminology not easily sourced in other authoritative resources, and reducing the imbalance between pre- and post-2004 languages.

1.4. Ownership

Since the conception phase of IATE, data ownership has been a key issue in the management and visualisation of terminology data. The approach to ownership has evolved over the years in line with increased cooperation and common work in the database. IATE was conceived as a common platform but, in the initial phase, data were still grouped by institution (one entry belonging to one specific institution). This meant that any updates, deletions or merging requests were sent by e-mail or via the comments feature in IATE (called 'marks') to the owner of the data who would then implement the request. Over time, the consolidation efforts have led to the deletion of many duplicates and the merging of data in a single "primary" entry. The result is that an increasing number of mixed entries can now be found in IATE (an entry consisting of language equivalents provided by different institutions). A major improvement was made early in 2012 with the introduction of the interinstitutional update, which is a more efficient way to improve the quality and completeness of IATE entries. With this feature, any institution can update another institution's data, and these changes would be submitted for validation by the institution owning the data. This was followed by further features, such as interinstitutional merging whereby any institution can now merge two duplicates independently of the data owner, and more recently by interinstitutional deletion whereby any institution can delete obvious duplicates without any added value from other institutions. This evolution also reflects the greater levels of cooperation and exchange among EU terminologists and translators.

1.5. Roles and rights

Some other relevant factors which may explain the imbalance in the coverage of complementary data in an entry and the lack of uniformity among different entries –particularly for pre-2004 entries– are the different profiles and needs of IATE internal users. Most EU institutions and bodies have three main types of actors in IATE: translators, language terminologists and central terminologists, with different rights in the database, and also different approaches and needs in their day-to-day work. Translators are mostly focused on equivalents, they have limited time for terminology work and their approach is ad-hoc and mainly limited to feeding equivalents into the database as they translate. Language terminologists are responsible for the validation

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of data inserted by translators in their institution in their native language. They also carry out terminology work requested from the central terminology services, update references and contexts and give more importance to added value data (definitions, contexts, notes, etc.). The third group consists of central terminologists, who coordinate terminology work for all EU official languages and have a multilingual overview of the entries. They devote more effort to identifying and consolidating existing duplicates at entry level.

IATE at the moment has over 9,000 internal users, of which 5,300 have editing rights (mostly translators), 2,350 have validation rights (language terminologists), and around 130 have administration or advanced rights[2].

The range of users and their different needs make it very challenging to reach a fully harmonised set of data in the database.

2. Data in IATE

2.1. Main issues of legacy data

The IATE project has achieved most of its objectives, but merging several terminology resources also raised some thorny issues, or simply made them more visible. For example, users may encounter duplicate entries or quality problems due to character conversion issues when legacy data were imported, missing key data (domain, source), misspellings, etc. Despite the efforts to automate the detection of problematic content, the consolidation of legacy terminology in IATE remains a challenge for all participating services.

The main problems which have been detected –particularly in pre-2004 entries– are the following:

- Duplicates (mainly due to legacy data imported into IATE from different databases, but also the result of semi-automatic imports of collections which include concepts already included in IATE)

- Incomplete entries (terms without any complementary information –such as the source, context, or definition–) and entries without any indication of domain or with an incorrect one

- Misspellings (due to manual data input and the absence of spelling-check feature within IATE)

- Broken hyperlinks

- Obsolete data

- Lexical items (LGP) instead of terms (LSP)

- Non canonical forms

- Phrases instead of terms (particular collections, for example international classifications)

- Multiple terms in a term field (wrong data input)

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Figure 4: Duplicate entries for the air transport concept "wet lease"

Figure 5: Multiple terms in a term field (see French)

Figure 6: Descriptions instead of terms (see French)

Figure 7: Corrupted characters

Figure 8: Text segments instead of terms (more appropriate for a translation memory)

3. Data maintenance and clean-up

The maintenance and clean-up of IATE data are the main tasks of the IATE partners, explicitly expressed in the framework policies and/or work programmes of most EU institutions and bodies. The EU central terminology services work in close cooperation to reduce the number of duplicate entries and consolidate and increase the quality of IATE data, although each EU terminology service has its own different priorities in terms of the domains to be covered according to its political agenda, which dictates the translation workload, and often approach consolidation in a different way depending on the amount of staff available.

3.1. On-going maintenance tasks

The maintenance and clean-up tasks carried out by the different EU terminology services are usually launched in line with the following initiatives:

○ The so called "consolidation projects" are launched by the central terminology service of an EU institution or body in relation to domains of interest. This is mostly manual and intellectual work, consisting of searching for already existing entries covering a particular concept, choosing one of them as the "primary" entry, completing it with as much information as possible and asking other partners who own duplicate entries to merge any relevant information and delete the duplicate entries. Consolidation projects cover a set of primary entries and its duplicates for a particular sub-domain or collection.

○ Ad-hoc consolidations: central terminology coordinators are encouraged to consolidate duplicates that are detected while working in IATE, for instance when launching a search. This consists of updating an entry that will be considered the "primary" entry by asking language terminologists to verify and complete their language if needed, and requesting other institutions owning duplicates to delete them after they merge any relevant information into the primary. If time is not sufficient to tackle this ad-hoc consolidation, terminology coordinators will try to signal the issue at least by adding a comment in the obvious duplicate entries. Language terminologists are also encouraged to inform their central terminology service when they come across duplicates so that action can be taken at entry level.

○ Through statistics: central terminology services are provided with a quarterly list of the most searched terms both in IATE internal and IATE Public, which allows them to identify potential areas of interest.

○ Through basic exports: terminologists can also proceed with batch clean-up and updates by exporting sets of data that comply with certain criteria, such as low reliability, no reference, a specific reference or note that needs to be updated, a missing domain, etc.

○ Through advanced exports, carried out by the database administrators.

○ For example: potential duplicate entries by language and domain; entries that overlap in several languages; monolingual and bilingual entries which have neither been updated nor completed since a specific date, etc.

○ Feedback from internal and external users triggers a correction, update or a consolidation effort of some kind.

3.2. IATE features for clean-up and maintenance tasks

Depending on their role, IATE users have at their disposal a range of features to help them to clean and update existing data.

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○ Merging: IATE offers terminologists the possibility to merge two entries, which basically consists in copying the selected content of a secondary entry into an entry considered as more complete or reliable into which the content is merged. When merging two entries, the terminologist has the possibility to insert, ignore or concatenate the different fields into the primary entry for each of the existing languages, with the option to preview the result before completing the action. Once the merging is completed, the secondary entry is not automatically deleted, but it is up to the central terminologist to delete it manually.

○ Batch update: apart from the individual updates, terminologists with specific rights can run a batch update, which consists of exporting the desired data to Excel format (not all fields are available for a batch update), modifying the data in the Excel file and reimporting the modified data back into IATE by overwriting the previous data. This feature enables global replacements to be made, broken links to be corrected in one go, etc.

○ Deletion: currently IATE users can delete data at term, language or entry level manually. Deleted data are sent to a recycle bin and can be restored later if needed. Any batch deletion is done by the IATE database administrators for security reasons.

Apart from these mechanisms and a duplicate detection feature that runs when modifying or inserting a term, IATE does not integrate at the moment any automated mechanism that would allow users to run a more advanced quality verification (spelling issues, potential duplicates per domain, broken links, empty domain or term reference, etc.).

3.3. Adaptations in IATE

Since 2004, IATE has evolved in order to cater for the maintenance and consolidation needs of its users following interinstitutional discussions and suggestions from terminologists. Some major developments include the following:

○ Batch import feature, which allows terminologists to carry out batch updates directly from the IATE interface.

○ Creation of PreIATE, which is a repository within IATE, which contains raw material. PreIATE gives IATE partners more flexibility to import certain collections and encourage terminologists to insert "work in progress" data. Terms marked as PreIATE are not transferred to IATE Public.

Figure 9: Entry with two PreIATE terms

○ Primary entries: consolidated entries, which have been thoroughly revised and updated in all languages, are marked with a star displayed at the entry level. Any duplicate entries should be merged into the primary and deleted. The "primary" mark is also used when sorting the results, giving priority to those entries in the hit list.

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Figure 10: Consolidated entry with a primary entry icon

IATE macro, which allows a query to be launched and enables IATE to be fed from Microsoft Word so as to integrate terminology work into the translator's working environment to ensure that IATE is consulted, remains relevant and is constantly updated.

Figure 11: Pop-up window of the feeding feature of the macro

4. IATE meets LISE

The LISE (Legal Language Interoperability Services) project is aimed at enabling data owners in public administrations and translation departments to manage their terminological data on the basis of best practices in interinstitutional, interdisciplinary and multilingual terminology management workflows and using web services to support this work. The tools developed in

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the framework of this project can be used for the semi-automatic consolidation of linguistic resources and enable the detection of potential quality problems, i.e. misspellings, mistranslations, missing domains, wrong language, etc., which are the kind of problems typically faced by any big and multi-partner terminology database such as IATE. In 2012, the LISE project sent a request to the EU institutions to include IATE in the project's user group and to use IATE terminology to demonstrate the usefulness of the project tools. This request was approved by the Interinstitutional Coordinating Committee for Translations and the project has been followed by the IATE Management Group.

4.1. LISE tests

In February and April 2013, EU terminologists had the chance to test these tools with a set of 67 000 entries covering the domains of social security, social questions, working conditions and insurance. 10 EU terminologists evaluated the three modules as described below for the following languages: DE, EN, ES, FR, PT and SV (not all post-2004 EU languages were supported for the linguistic checks).

The tools to be tested were provided through a desktop application, where testers defined their working languages and a set of IATE entries was pre-loaded (the transfer of data from IATE to LISE was done by the LISE group and not covered in these tests). Below is a more detailed description of the tests carried out with the different modules.

4.2. Clean-up module, addressing the following linguistic and redundancy issues

○   detection of spelling mistakes

○   canonisation

○   language recognition

○   mistranslations

○   data management errors (missing data)

○   additional domains suggested

○   overlapping entries (same concept in singular and plural)

The clean-up module was evaluated as being quite reliable for the languages tested and the IATE user group concluded that most of the features offered are useful for a formal, linguistic clean-up of data. One aspect raised by the users was the importance of visualising more data categories (definition, domain, reference, update date) for decision-taking in redundancy-related issues. Users could only evaluate the tools with data from very specific subdomains, and it was not possible to assess whether the redundancy-related features would also present similar results on other wider domains.

4.3. Omeo module, addressing conceptualisation issues

○   detection of potential duplicates and related entries comparing anchor language, target languages and regrouping them (from monolingual to multilingual grouping), so that they are later processed together in order to optimise the consolidation work

The tests carried out with Omeo proved that thorough manual (merging) and intellectual work (consolidation of duplicates) was still required; however the fact that Omeo detects not only duplicates but also closely related entries was seen as useful in order to speed up consolidation work. Again, users highlighted the importance of visualising key metadata (owner, primary), of added value fields (definition, context, note) and full multilingual entries (not only two languages) for decision-taking when merging entries (deciding which entry should be considered as primary).

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4.4. Fill-up module, helping to enhance and complete terminology entries

○   use of TMs to find equivalents for existing terms into languages that are not covered

The Fill-up module, if adapted to several IATE best practices (retrieving also the term source, extraction of contexts, etc.) and used with highly reliable translation memories which contain final versions, could help populate less-represented languages in IATE. Those automatically extracted equivalents could be marked as PreIATE data for further evaluation and validation.

A collaborative platform with discussion, rating and information exchange features was also presented but not tested.

5. Conclusions

The tests allowed the IATE user group to confirm the obvious issues which affect the reliability and quality of part of the data in IATE and the usefulness of semi-automatic tools to speed up the identification and correction of issues.

During the workshop, the IATE user group could make corrections and modify the pre-loaded data, although there was no connection and transfer of updates between IATE and the LISE tools at this stage. Therefore the modules were used as a standalone reporting tool. The interface was rated as simple and user-friendly.

Following these tests, the IATE user group concluded that a quality assurance module which would enable linguistic and conceptualisation issues to be tackled should be ideally integrated into IATE in order to allow a direct editing of the reported issues and avoid data transfer and conversions. Given the multilingual nature of IATE, the linguistic quality assurance module would need to cover the 24 EU official languages.

The tests were seen as a good exercise for raising awareness on certain quality issues in IATE that could be addressed with better level of automation with respect to clean-up and maintenance tasks.

6. Acknowledgements

I would like to thank the Terminology Team at the Translation Centre, the IATE Management Group (and particularly its chair Mr Dieter Rummel) and the IATE Support and Development Team for all I have learned from them in the past years.

7. Notes

[1] Figures obtained from IATE Central Statistics for the second quarter 2013.

[2] Figures provided by the IATE database administrators in July 2013.

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