# DIPLOMARBEIT

Titel der Diplomarbeit

## "Learning with Lady GaGa & Co. –
## Incidental EFL vocabulary acquisition from pop songs"

Verfasserin

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# List of abbreviations

| | |
|---|---|
| BNC | British National Corpus |
| CALL | Computer Assisted Language Learning |
| EEG | Electroencephalography |
| EFL | English as a Foreign Language |
| ELT | English Language Teaching |
| ERP | Event-Related Potentials |
| ESL | English as a Second Language |
| fMRI | functional Magnetic Resonance Imaging |
| L1 | First Language |
| L2 | Second Language |
| PET | Positron Emission Tomography |
| SLA | Second Language Acquisition |
| TTR | Type-Token Ratio |
| VKS | Vocabulary Knowledge Scales |
| VLS | Vocabulary Learning Strategies |

## In statistical testing

| | |
|---|---|
| p | p value, level of statistical significance |
| t | t-value (in a t-test) |
| N | sample size |
| SD | standard deviation |
| df | degrees of freedom |
| M | mean |
| d | Cohen's d (effect size for t-tests) |
| Z | Z statistic (in a Wilcoxon test) |
| r | relationship index, correlation coefficient (effect size for Wilcoxon and Mann-Whitney tests) |
| U | Mann-Whitney U (in a Mann-Whitney test) |
| F | f-ratio value (in an ANOVA) |
| $\chi^2$ | chi- square (in a Kruskal-Wallis test) |
| $\rho$ | Spearman's rho, correlation coefficient for a Spearman rank order correlation |
| $R^2$ | r squared (percentage variance effect size, effect size for Spearman rank order correlations) |

# 1. Introduction

> *Most vocabulary is learnt incidentally, much of it from oral input.*
> (Ellis 1999: 58)

Vocabulary learning is a crucial element of foreign language acquisition. However, learning the thousands of words that students need presents a seemingly insuperable challenge. It appears inconceivable that vocabulary can be acquired only through explicit studying and teaching and indeed there is a widely-held belief among teachers and researchers that most L2 vocabulary is acquired incidentally (cf., e.g., Milton 2009: 218–219, Hulstijn 2001: 273).

Incidental vocabulary acquisition in not an uncontroversial topic, but it appears that foreign language vocabulary acquisition can benefit from activities in which learners take up words incidentally, similar to the acquisition of their first language (cf., e.g., Wode 1999: 245). Research on incidental vocabulary learning has focused predominantly on reading (cf., e.g., Read 2000: 47; Hulstijn 2003: 362–363), although some experts propose that much vocabulary is acquired from oral input, for instance Rod Ellis in the quotation above. Given the popularity of the notion of incidental learning among language teachers and experts, it is astonishing that research on incidental vocabulary acquisition from oral input is scarce. Over the last thirty years few studies have investigated aspects of incidental vocabulary learning from oral input, and those that have differ considerably in their aims and methods because of the vagueness of the concept of incidental learning. This study adds to the body of research on incidental vocabulary acquisition by investigating a previously overlooked source of vocabulary learning in EFL contexts: English pop songs.

## 1.1. Rationale for the study

The purpose of this research project is to investigate incidental vocabulary acquisition from pop songs outside school in the field of English as a foreign language. Several reasons have led to the proposal of this topic and shall be commented on briefly.

Firstly, teenagers often spend large amounts of time listening to music, and in particular to pop songs (cf. Murphey 1990a: 14), most of which are in English today. Furthermore, many of them also engage with the lyrics of the songs, discussing their favourite texts with friends or looking up translations on the internet. As a result,

many music-loving teenagers may acquire vocabulary quite naturally while listening to or engaging with pop songs.

Secondly, many language teachers believe that new lexical items can be acquired through music (cf., e.g., Medina 1990; Abbott 2002: 10) and numerous anecdotes seem to suggest that incidental vocabulary learning from songs does indeed take place, at least for some learners. As a teacher of English in Austria I have experienced similar situations myself at English summer camps: students asked for an English word they could not remember, but when they were given a musical cue, for instance by humming the melody of a song in which the lexical item occurred, they were able to produce the correct word themselves. Situations like these and a longstanding interest in language and music constitute my personal motivation for this research project.

Thirdly, there is a lack of research on incidental vocabulary learning from oral input, as will be explained in greater detail in the literature review following this chapter. Moreover, to the best of my knowledge, to date no empirical studies have been conducted specifically on the incidental acquisition of vocabulary from English pop songs in out-of-school contexts, although, given the ubiquity of English language media nowadays, this presents a most intriguing phenomenon.

In summary, there seems to be a general belief that much vocabulary is learned from oral input, but at the same time there appears to be a research gap because only anecdotal evidence is available and few experimental studies have actually investigated the validity of such claims. Research from an applied linguistics perspective is needed to analyse and evaluate the notion of incidental vocabulary acquisition from oral input for the benefit of foreign language learners. As many adolescent learners like listening to music and spend a lot of time doing so, English pop songs constitute an ideal source for vocabulary learning because they combine foreign language input with students' personal interests and enjoyment. Hence, the results of this study might not only be able to shed light on the fact whether lexical items can be acquired incidentally from songs, but could potentially also have wider implications for vocabulary teaching in Austria and other EFL contexts.

## 1.2.  Research questions and hypotheses

In order to investigate the phenomenon of incidental vocabulary acquisition from pop songs, three research questions will be addressed in this study:

1. Do Austrian EFL learners of intermediate proficiency acquire passive vocabulary knowledge incidentally by listening to and engaging with English pop songs outside school?

2. Which factors influence the incidental acquisition of vocabulary from pop songs?

3. Which conclusions for English language learning and teaching can be drawn from the findings?

The first research question asks whether the hypothesized phenomenon of incidental vocabulary acquisition from pop songs actually occurs, while the second addresses the issue of why it takes place or which factors potentially influence it. Finally, the third question concerns possible consequences for teaching and learning practices if such a learning effect from pop songs can indeed be demonstrated. It is important to stress that while the first research question attempts to test a hypothesis, questions two and three are more exploratory in nature and are thus meant to yield only tentative results.

From these three research questions several research hypotheses have been derived:

- $H_1$: Intermediate Austrian EFL learners listen to English pop songs outside school.

- $H_2$: Intermediate Austrian EFL learners who listen to and engage with English pop songs and their lyrics outside school will be able to translate English lexical items which they have not been taught but which occur in English pop songs into German or provide a synonym for them.

- $H_3$: There is a difference between intermediate Austrian EFL learners who listen to English pop songs and those who do not with regard to their vocabulary knowledge.

- $H_4$: There is a difference between intermediate Austrian EFL learners who engage with the lyrics of English pop songs and those who do not with regard to their vocabulary knowledge.

- $H_5$: There are several other independent variables which influence the incidental acquisition of passive vocabulary knowledge from pop songs by intermediate Austrian EFL learners (e.g. sex, level of language proficiency, time spent listening

to music, frequency of occurrence and salience of lexical items in the lyrics of the pop songs).

Hypothesis 2 can be considered the main hypothesis of this study since hypothesis 1 states a necessary prerequisite for hypothesis 2 to be accepted and hypotheses 3 and 4 make more detailed predictions and should thus be viewed as sub-points of the main hypothesis. With regard to hypothesis 5, it is again essential to emphasize its exploratory nature because due to the lack of previous research on this exact topic all factors mentioned are the results of conjecture on the basis of research on vocabulary acquisition (Ellis and Beaton 1993; Ellis 1999) and song perception (Poulin-Charronnat et al. 2005; Kolinsky et al. 2009).

In addition, it should be noted that a research hypothesis is not the same as a null hypothesis for statistical testing, nor is it identical to the alternative hypothesis, which is accepted in case of rejection of the null hypothesis (cf. Larson-Hall 2010: 98). The hypotheses presented above are of the first kind; therefore, corresponding null hypotheses have to be formulated prior to the application of statistical tests at later stages of this research project.

## 1.3. Overview

The main focus of this thesis is the presentation of the empirical study on incidental vocabulary acquisition from pop songs. Following this introduction a review of the literature will provide the necessary theoretical grounding for such a research project. Chapter 2 is concerned with incidental vocabulary acquisition; it will first consider the notion of incidental learning and try to find a definition for this vague concept, then relevant aspects of second and foreign language vocabulary acquisition will be introduced and, finally, the two aspects will be combined with a focus on oral input.

Chapter 3 outlines the relationship between music and language, which constitutes a vast field of interdisciplinary research. Parallels and differences of music and language will be considered from a variety of perspectives and then an overview of the effects of music on language learning, the connection of music and memory and the role of music in language teaching will be given.

Chapter 4 is devoted to the topic of English in out-of-school contexts with a special focus on Austria as this is were the empirical study takes place. Data on English language input outside school and research findings on the influence of English

media on language acquisition will be presented. Subsequently, the role of pop music will be analysed and possibilities of vocabulary learning from pop songs and their lyrics will be assessed.

Chapter 5 marks the beginning of the second part of this thesis, which is mainly concerned with the presentation of the empirical study. In this chapter the methodology, which was devised especially for this research project, will be introduced and detailed explanations about the research design, the participants, the design process of the materials and data collection and scoring will be given.

Following the methodology section, chapter 6 describes the different methods of data analysis and presents the results of the study. These will then be discussed and interpreted with reference to insights gained from the review of the literature in chapter 7, and additionally possible implications for the learning and teaching of English will be considered.

Finally, chapter 8 summarizes the main findings of the study together with some concluding remarks. It outlines limitations of the project and gives suggestions for future research. In the appendices the test booklet, the information sheet and additional material from a subsidiary analysis of the Austrian charts are provided.

# 2. Incidental Vocabulary Acquisition

The concept of incidental learning has been particularly important in the context of research on vocabulary acquisition and therefore both notions will be discussed jointly in this chapter. First, background information on the notion of incidental learning is provided with regard to its historical development, different definitions and its current use within SLA research. Subsequently, theories and findings from research on vocabulary acquisition which are relevant to the present study will be introduced and finally previous studies on incidental vocabulary acquisition from oral input will be presented.

## 2.1. Incidental learning

Studies on incidental learning constitute an important focus in research on vocabulary acquisition[1] (cf. Rieder 2003: 24), but the term is not unproblematic because it is used with a wide variety of definitions. This section attempts to give an overview of the notion of incidental learning by describing its various meanings, by relating it to similar concepts and by discussing the current stance on incidental learning within vocabulary acquisition research.

### 2.1.1. Historical overview and definitions

Hulstijn (2003: 357) notes that incidental learning "has often been rather loosely interpreted in common terms not firmly rooted in a particular theory" and Milton (2008: 228) even goes so far as to say that "there is some confusion over exactly what incidental learning is". The term clearly has different meanings for different researchers, which is partly due to its origin as a methodological criterion in psychological experiments (Hulstijn 2003: 350–356). Originally, incidental learning emerged as a concept within stimulus-response psychology and referred to a methodological aspect in learning experiments, namely to "the presence or absence of an explicit instruction to learn" (Hulstijn 2003: 354). Hence, in studies on intentional learning participants were told beforehand that they would be tested after the experiment, while in studies on incidental learning participants were not forewarned. With the advent of cognitive psychology, researchers lost interest in intentional and incidental learning as theoretical constructs, but incidental learning research designs

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[1] In contrast to the distinction proposed by Krashen (1982) the terms 'learning' and 'acquisition' will be used synonymously within this thesis.

were retained as a useful method to investigate information processing. In particular, Craik and Lockhart's (1972) levels-of-processing theory called forth many empirical studies which used such designs and thus helped the notion of incidental learning to survive and to enter SLA research (cf. Hulstijn 2003: 355).

As can be seen from this brief outline, incidental learning mainly referred to a methodological aspect of research design and was regarded as a practical tool rather than a valuable theoretical concept when it was first used in SLA. It appears that because of this historical lack of a precise definition, the notion of incidental learning has been adapted to fit different theoretical stances and has been used with a variety of meanings in more recent SLA research. A pioneering effort to disentangle the relations between various aspects of consciousness in applied linguistics was made by Schmidt in 1994. Among other aspects, Schmidt considered "consciousness as intentionality" and in his article he defined incidental learning as "learning without the intent to learn or the learning of one thing (e.g. grammar) when the learner's primary objective is to do something else (e.g. communicate)" (Schmidt 1994: 137). From this highly influential statement Hulstijn (2003: 357–358) derives three more precise definitions, which distinguish between incidental learning as "learning without the intent to learn" as the most general meaning of the term, "learning of one stimulus aspect while paying attention to another stimulus aspect" as a second possibility and "learning of formal features through a focus of attention on semantic features" as the most specific definition. All three of these definitions have been used by other researchers and in empirical studies and shall be examined more closely below.

The first definition is very broad and simply puts incidental learning in contrast to intentional learning, thus leaving a lot of space for interpretation. This meaning is often given in theoretical discussions and meta-analyses of the notion of incidental learning, for instance Rieder (2003: 28) equates incidental with "un-intentional" and Hulstijn (2012: 1) states that

> [t]he term incidental learning is used, in applied linguistics, to refer to the acquisition of a word or expression without the conscious intention to commit the element to memory, such as "picking up" an unknown word from listening to someone or from reading a text.

However, this last definition already refers to the second meaning of the term as well because 'picking up' a previously unknown word or grammatical feature while concentrating on another activity is exactly what Hulstijn (2003: 357) means by "learning of one stimulus aspect while paying attention to another stimulus aspect".

This second definition is frequently expressed as the learning of formal language aspects as a 'by-product' of other, often communicative, activities or as naturally 'picking up' formal features in the course of such activities (cf. Huckin and Coady 1999: 182; Wesche and Paribakht 1999: 176; Schmitt 2000: 120). It therefore associates incidental learning with first language acquisition and implicitly gives an impression of effortless natural language acquisition. For instance, Wode (1999: 245) describes incidental learning as

> language learning as a by-product of language use […], without the linguistic structure itself being the focus of attention or the target of teaching maneuvers. The notion of incidental language learning, if construed in this way, is synonymous with the term *naturalistic (L2) acquisition* as originally defined during the early 1970s […] (author's italics).

As we shall see later, such an association of incidental learning with natural acquisition has been criticized severely by other researchers and has led to yet another use of the term incidental learning. However, before going into detail, it is worth looking at the third and last of Hulstijn's definitions, which refers to the incidental learning of formal features while focusing on semantic features. Evidently, this meaning of the term is the most specific and most obviously relates to L2 grammar acquisition, which does not constitute the main focus of this thesis. However, regarding vocabulary acquisition 'formal features' could also refer to the learning of word forms, of collocational constraints of lexical items or even to the learning of whole words, if they are considered a formal feature of a text.

Regardless of which of the three definitions they commonly use, many experts stress that incidental learning is not unconscious or without attention (cf. Read 2000: 44; Rieder 2003: 26; Hulstijn 2003: 361). Schmidt (1994: 137) already noted that

> it is important not to assume without independent evidence that either the process or the product of such [incidental] learning is unconscious in any other sense, e.g., that such learning is unaccompanied by attention or awareness or that knowledge gained cannot be expressed.

In addition, Gass (1999: 320) and Rieder (2003: 26) argue that a definition of incidental learning as side-effect or by-product of other activities disregards the active role of learners. Students can potentially locate their attention wherever they wish and thus one can never be completely sure that a certain word has indeed been learned incidentally (cf. Gass 1999: 320). Huckin and Coady (1999: 190) seem to agree about the active role of learners when stating that "[i]ncidental learning is not entirely "incidental," as the learner must pay at least some attention to individual

words." However, it seems astonishing that they view the allocation of attention to specific lexical items as rendering incidental learning less incidental, while other researchers emphasize that incidental learning is in fact not the same as learning without attention.[2] Hence, what becomes obvious here is firstly that there is indeed no agreed upon definition of incidental learning; secondly, that there is considerable confusion even among experts about how incidental learning relates to other concepts such as attention or consciousness; and thirdly, that incidental learning in the sense of unintentional learning might not even be a feasible theoretical concept because in principle learners are free to intentionally focus their attention on whichever input feature they wish.

One reaction to this last problem is the conception of incidental learning as "unplanned learning". For instance, Kerka (2000: 3) describes incidental learning as "unintentional or unplanned learning", a definition which is taken up by Milton (2008: 228–229) although he argues that the two terms actually denote very different concepts:

> Unplanned learning may involve the deliberate intention to learn even if the activity involved is not part of a formal syllabus or curriculum; listening to a song and trying to memorise the words, for example.[3] Unintentional learning implies that something can be learned without really trying and without effort. […] I would expect learning that is unintentional or incidental to be less successful than learning that is intentional but unplanned.

Milton thus argues that unplanned learning is different from incidental learning in the sense of natural, effortless learning, but it could also be regarded as yet another definition for the term incidental learning as implied by Kerka. Unplanned learning can certainly involve different levels of attention and intention, but in an unplanned learning situation learners are by definition not forced to focus on a specific aspect and hence their main purpose may well be some other than learning. As a consequence, I would argue that unintentional and unplanned learning are different

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[2] According to Schmidt (1990: 149) learning without attention in the sense of subliminal learning does not exist because input features need to be noticed in order to be acquired (see also the next section).
[3] One may comment that the fact that a learning activity is not part of a formal syllabus or curriculum does not automatically mean that it has not been planned by the learner. In fact, self-directed learning can sometimes by highly organized and planned, even if it is the learner who does the planning and not a teacher or an educational institution. Moreover, the studies reported in Milton (2008) actually seem to involve quite a lot of planned learning because they include regular tests and strict regulations about the exposure to foreign language input.

notions which, however, may overlap to a great extent in many situations and thus both can be viewed as descriptions of incidental learning.

In summary, the term incidental learning can denote three different notions of learning according to my perception: unintentional learning, although one can never be entirely certain what learners' intents are; learning as a by-product of another activity including the special case of learning formal features while focusing on meaning; or unplanned learning, at least in learning situations where the learners' primary purpose is not learning itself. In the case of the empirical study presented in this thesis all of these definitions are in some way suitable, but perhaps the last one is the most appropriate. Learning English vocabulary from pop songs is certainly unplanned in Milton's sense, but it can also be the by-product of another activity such as listening to a song, trying to understand its content or singing along with it. Lastly, for many learners it is most probably unintentional because their primary purpose will hardly be learning vocabulary but rather enjoying the music. In conclusion, situations in which students learn from pop songs are unplanned in the sense of not having been planned systematically and unintentional because they usually do not involve an explicit learning goal. The cognitive processes that are involved in such learning processes are a different issue and it is assumed that the fact that the learning situation is incidental does not preclude conscious efforts to understand the meaning of a word if an interest arises.

## 2.1.2. Incidental learning and related concepts

As became apparent in the discussion of different definitions above, it is quite hard to separate the notion of incidental learning from other related concepts such as attention or consciousness. Schmidt's (1994) effort to distinguish between the different meanings of the word consciousness in SLA research has been mentioned several times already with regard to incidental learning, but now it is worth looking at his whole proposal. Schmidt suggests differentiating between four different senses of the word consciousness: consciousness as attention, as awareness, as intention and as control. The notion of consciousness as intention refers to the incidental-intentional learning debate, which has been discussed extensively in the previous section, and the concept of consciousness as control is of little relevance for this thesis and thus the reader is referred to the original text for further information.

Attention, however, has emerged as problematic concept before and thus warrants further consideration. The concept of attention received a lot of interest following the proposal of the noticing hypothesis in 1990 because Schmidt (1990: 144, 149) suggests that focusing one's attention on a particular input feature most probably helps noticing it and thus makes it available for further processing and learning. Yet, Tomlin and Villa (1994) argue that discussions of consciousness in SLA research are 'too coarse-grained' and propose a conception of attention as a limited capacity system with three principal components: alertness, which represents an overall readiness to deal with incoming input; orientation, which aligns attention to a specific stimulus, and detection, which selects a particular piece of information and makes it available for further processing. The importance of these three processes for language learning lies in the fact that acquisition requires detection[4] and orientation and alertness facilitate detection. However, none of these sub-processes of attention require awareness (Tomlin and Villa 1994: 202) and therefore they also cannot require intention. In the same vein, Schmidt (2001) argues that there can be no learning without attention, but there can be learning without intention.

> Because we know that attention can involuntarily be attracted to stimuli, it cannot be claimed that learners must intentionally focus their attention on each particular aspect of L2 input in order to learn. Even if it is true that in order to learn anything one must attend to it, that does not entail that it is necessary to have either the intention to attend or the intention to learn (Schmidt 2001: 23).

As a result, incidental learning is regarded as possible even if noticing or detection are accepted as prerequisites for acquisition. Following Schmidt and Tomlin and Villa it can be argued that neither awareness nor intention are necessary for the focusing of attention and thus for noticing or detection. In summary, "both incidental and intentional learning require some attention and noticing", but in the case of incidental learning "the involvement of attention is not geared toward an articulated learning goal" (Hulstijn 2003: 361).

Consciousness as awareness is the only of Schmidt's (1994) distinctions which has not been mentioned yet, although it has an important relation to incidental learning. The awareness debate focuses on implicit and explicit learning, which are often confused with incidental and intentional learning. Hulstijn (2003: 360) states that "for

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[4] Detection can be regarded as similar to Schmidt's (1990) 'noticing'.

many authors, incidental and intentional learning overlap with, or even become indistinguishable from, implicit and explicit learning respectively." Implicit learning is generally defined as "learning without awareness of what is being learned" (Schmidt 1994: 139; DeKeyser 2003: 314) and according to Hulstijn (2003: 360) "incidental learning […] is always implicated in implicit learning; implicit learning thus entails more than what is meant by incidental learning". However, other researchers have suggested that it is exactly the other way round and that incidental learning involves both implicit and explicit learning. For instance, Rieder (2003: 28) regards

> incidental vocabulary acquisition as being composed of implicit learning processes (which happen without the learner's awareness) and/or of explicit learning processes (which take place without learning intention but nevertheless involve online awareness and hypothesis formation).

It can be inferred from these contrasting views that incidental and implicit learning are somehow related, but opinions on the exact nature of this relationship differ widely. One last point that is significant in the present context is the result of a meta-analysis of different vocabulary studies by Nick Ellis (1994a: 52–53), which suggests that features relating to word form are mostly learned implicitly, whereas semantic and conceptual representations require explicit learning. This finding, which has subsequently been challenged for instance by Rieder (2003), could potentially have an influence on the present study since according to Ellis the acquisition of word meaning requires conscious effort on the side of the learner and thus explicit learning. If one further accepts that incidental learning is always entailed in implicit learning as suggested by Hulstijn, then word meaning could not be acquired incidentally. Hence, in accordance with Rieder it is assumed here that incidental learning in the sense of unplanned and largely unintentional learning can involve processes of both implicit and explicit learning and that therefore the acquisition of word meaning through incidental learning is possible. A more detailed discussion concerning this issue and the notions implicit and explicit learning in general would go beyond the scope of this literature review, but interested readers are referred to the texts of Ellis (1994b & 1994c), De Keyser (2003), Rieder (2003) and Hulstijn (2005).

## 2.1.3. Current stance on incidental learning

So far, the attempt has been to define what incidental learning actually is and to relate it to several associated concepts. In the course of this undertaking it has become evident that incidental learning has been used in research on both grammar

and vocabulary, but in fact there are only very few empirical studies on the incidental acquisition of grammatical features (cf. Hulstijn 2003: 347). In contrast, the incidental-intentional distinction has been rather influential in vocabulary studies (cf. Read 2004: 147) and is still used in empirical research nowadays (cf. Horst 2010; Lin 2010; Vidal 2011).

However, we have also seen that incidental learning is not an uncontroversial topic in the field of vocabulary acquisition research, Milton (2009: 218–219), for instance, criticizes the concept sharply. According to him truly incidental vocabulary acquisition is "wishful thinking" and its results are "usually negligible" (Milton 2009: 2). It seems however that this rather severe judgement is a reaction against the claims of advocates of the extreme version of incidental learning, who believe that explicit vocabulary teaching is senseless (cf., e.g., Ellis 1999: 58; Harris and Snow 2004: 55 qtd. in Milton 2009: 2). In the context of the present study incidental and intentional learning are regarded as mutually beneficial processes which both contribute to learners' overall vocabulary knowledge, a position that is also taken by Hulstijn (2001: 275):

> [F]rom an educational (as opposed to a theoretical) point of view, incidental and intentional vocabulary learning should be treated as *complementary* activities which *both* deserve to be practised (author's italics).

However, from the theoretical point of view Hulstijn (2001: 275) considers "the labels incidental and intentional learning no longer to reflect a major theoretical distinction" because what is in fact decisive for the retention of a given word is the "quality and frequency of information processing activities (i.e. elaboration on aspects of a word's form and meaning, plus rehearsal)" rather than the intention of learning it. Consequently, Hulstijn argues for a return to elaborative processing in combination with rehearsal activities in order to achieve the automaticity needed for fluency in a foreign language (cf. Hulstijn 2001: 275–285, 2012).

In addition, Laufer and Hulstijn (2001) propose a new concept to measure the potential of tasks to result in successful incidental vocabulary acquisition: the construct of task-induced involvement. Task-induced involvement consists of three components: the learners' *need* to achieve, their *search* for the meaning of a word and *evaluation* of what they find. This new concept is an attempt to compare different tasks in terms of vocabulary processing and to draw conclusions for lexical learning and teaching. A first empirical study conducted by the same authors (Hulstijn and

Laufer 2001) supported the 'involvement load hypothesis' in that the task with the highest involvement load also resulted in the largest vocabulary gains.

In summary, the current viewpoints on incidental learning within the field of second and foreign language vocabulary research appear to be manifold. Firstly, there are highly negative reactions against the concept of incidental learning (cf., e.g., Milton 2008 & 2009) as a response to the strong view common "[i]n the heyday of communicative language teaching" which suggested that "L2 vocabulary acquisition would largely take care of itself" (Read 2004: 147). Others regard incidental and intentional learning as complementary processes (cf., e.g., Hulstijn 2001: 275–285) and incidental learning is still seen as a useful tool in recent vocabulary research (cf. Horst 2010; Vidal 2011). Thirdly, there is a renewed interest in more traditional methods such as deliberate elaboration and rehearsal (e.g. Hulstijn 2001 & 2012) and fourthly, a new construct relating incidental learning to different levels of processing has been put forth in form of the involvement load hypothesis (Laufer and Hulstijn 2001). Hence despite the critical voices, incidental learning is still used within SLA and it seems that Hulstijn (2003: 373) was right when he concluded nearly ten years ago that incidental and intentional learning would still have a role to play in future.

## 2.2. Vocabulary acquisition

Vocabulary acquisition is only one aspect of second or foreign language learning, but it constitutes a large and important area nonetheless. Although vocabulary research was considered to be a Cinderella subject in the 1980s (Meara 1980), it has seen a boom in empirical studies in the course of the 1990s and 2000s (cf. Read 2004: 146; Broady 2008: 259; Klapper 2008: 173) and has "achieve[d] a position of some salience" (Daller et al. 2007: 1). While this is certainly a very positive development, it also means that is virtually impossible to give an overview of the whole field within the limited space of this thesis. As a consequence, this section will only deal with issues of vocabulary acquisition that are directly relevant to the study of incidental vocabulary learning from pop songs, such as the questions of what it means to know a word, which factors influence vocabulary learning and which strategies can be used. Moreover, within the discussion of these issues there will be a main focus on oral input since that is the subject of this research project. For further information on vocabulary acquisition in general a number of helpful introductions to the field can be

recommended such as Nation (2001), Aitchison (2003), Milton (2009) or Read (2000).[5]

## 2.2.1. Definitions of vocabulary knowledge

The first issue that will be addressed here is definitions of vocabulary knowledge. The purpose of the empirical study presented in this thesis is to ascertain whether students incidentally acquire lexical items from pop songs and such learning outcomes need to be measured in terms of different levels of word knowledge. The problem, however, is that it is extremely difficult to define what exactly it means to know a word and many well-known researchers have endeavoured to find a comprehensive definition of word knowledge.

Traditionally, one convention is to differentiate between breadth and depth of vocabulary knowledge. "Breadth of knowledge refers to the number of words a learner knows and depth of knowledge refers to what the learners knows about these words" (Milton 2009: 13). Another distinction that has been even more influential is the division of word knowledge into active (or productive) and passive (or receptive) knowledge (cf., e.g., Milton 2009: 13). This seems to be a commonly accepted construct, but disagreement among experts can be found even here. It is usually assumed that a word is known receptively first and enters productive use only later (cf. Melka 1997: 90) and that more words are known passively than actively (cf., e.g., Milton 2009: 13). Some researchers argue that the passage from receptive to productive knowledge takes place on a continuum (cf. e.g., Melka 1997: 101, Henriksen 1999: 313), whereas others claim that the terms represent a dichotomy between two different vocabularies with a threshold effect operating between them (cf., e.g. Meara 1996: 5). Although the exact nature of the relation between passive and active vocabulary knowledge has not been clarified yet, Nation (2001: 24–30) uses the categories of reception and production in his definition of word knowledge, which is the not only the latest but also the most comprehensive attempt of a definition according to Daller, Milton and Treffers-Daller (2007: 4).

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[5] Each of these volumes has of course a more specific topic (e.g. assessment), but all of them also provide helpful insights into the overall nature of the field.

| Form | spoken | R | What does the word sound like? |
|---|---|---|---|
| | | P | How is the word pronounced? |
| | written | R | What does the word look like |
| | | P | How is the word written and spelled? |
| | word parts | R | What parts are recognisable in this word? |
| | | P | What parts are needed to express the meaning? |
| Meaning | form and meaning | R | What meaning does this word form signal? |
| | | P | What word form can be used to express this meaning? |
| | concept and referents | R | What is included in the concept? |
| | | P | What items can the concept refer to? |
| | associations | R | What other words does this make us think of? |
| | | P | What other words could we used instead of this one? |
| Use | grammatical functions | R | In what patterns does the word occur? |
| | | P | In what patterns must we use this word? |
| | collocations | R | What words or types of words occur with this one? |
| | | P | What words or types of words must we use with this one? |
| | constraints on use (register, frequency …) | R | Where, when and how often would we expect to meet this word? |
| | | P | Where, when and how often would can we use this word? |

**Table 1: What is involved in knowing a word, from Nation (2001: 27) (R=receptive, P = productive)**

As can be seen from table 1, Nation divides word knowledge into knowing the form, meaning and use of a word and each of these three categories again includes different aspects which can be known receptively or productively. A closer look at the category of form shows that learners need to learn both the spoken and written form of a word. Indeed Milton, Wade and Hopkins (2010: 84–85) argue that two different vocabularies for orthographic and phonological form exist within the mental lexicon. They also view this division as implied in Nation's table because he clearly states that learners must learn the written and spoken form of a word separately. Unfortunately, it is relatively hard to test this assumption but initial findings by Milton, Wade and Hopkins (2010: 93) suggest that different language skills access different mental lexica. Scores on a written vocabulary test predicted results of the writing part of the IELTS test relatively well and scores on an oral vocabulary test correlated strongly with listening and speaking grades. In addition previous research reported in the same article (Milton et al. 2010: 86) shows that the orthographic and phonological vocabularies do not grow at the same rate. It was found that in the earlier stages of language learning the size of the phonological lexicon exceeded the size of the orthographic lexicon, while the reverse was true for intermediate and advanced learners of English as a foreign language.

In brief, as has been shown above knowing a word entails several different kinds of knowledge. The research project presented in this study attempts to investigate acquisition of individual words at a very early/low stage of word knowledge and thus learners cannot be expected to know all the aspects listed by Nation (2001: 27). Form and meaning will be more important than aspects of use in the present context. The notions of vocabulary depth and breadth are also less relevant for this study, while the distinction between receptive and productive vocabulary certainly is because knowledge acquired from pop songs will be predominantly receptive. Finally, the distinction between phonological and orthographic lexica is of great significance as well since the testing method, which will be described in chapter 5, involves the recognition of both the written and spoken form of a particular word.

## 2.2.2. Factors influencing vocabulary learning

Words differ in terms of their 'learning burden', which is the amount of effort required to learn a certain lexical item (Nation 2001: 23). It seems rather obvious that there are words which are easier to learn and words which are rather more difficult, but the interesting question is why that should be so and what influences learnability. Nation states that the learning burden does not only differ between words, but also between learners according to their language background and argues further that "the more a word represents patterns and knowledge that learners are already familiar with, the lighter is the learning burden" (Nation 2001: 23–24). Hence, students' familiarity with features of L2 words is one factor that influences vocabulary acquisition, but other researchers have proposed many more. Ellis and Beaton (1993) analysed psycholinguistic determinants of foreign language learning, which mostly include intrinsic word properties. Rod Ellis (1999) investigated factors influencing the incidental acquisition of L2 vocabulary from oral input and therefore his findings are of great importance to the present study. Ellis draws his conclusions mainly from interactional input (Ellis 1999: 37–38), but most of the aspects mentioned also apply to non-interactional oral input such as songs.

Table 2 summarizes relevant factors suggested by both Ellis and Beaton (1993) and Ellis (1999) because concerning intrinsic word properties their proposals overlap to a large extent.

| Intrinsic word properties | Input factors | Learner factors |
|---|---|---|
| distinctiveness of word form | frequency | existing L2 knowledge |
| phonological features / pronounceability | saliency through 'focus' | background knowledge |
| orthographic features | availability of contextual cues | procedural knowledge |
| familiarity of grapheme to phoneme mappings | input complexity | immediate phonological memory |
| length of word | | the learner's L1 |
| word class | | |
| imageability of concept | | |
| semantic content | | |
| correlation between form and meaning / polysemy | | |
| word frequency | | |

**Table 2: Factors influencing vocabulary acquisition according to Ellis and Beaton (1993) and Ellis (1999)**

Note that many of the aspects mentioned in the table above are also mentioned in Nation's (2001) definition of word knowledge, for instance phonological and orthographic form, which could be differentiated further with regard to phonotactic regularity or sequential letter probabilities. 'Distinctiveness of word form' describes how similar a word is to other L2 words and 'familiarity of grapheme to phoneme mappings' refers to the correspondence between letters and sounds, which may differ between languages. 'Imageability' refers to the concreteness of a word and 'semantic content' relates to the fact that semantic fields are divided in different ways in different languages and thus concepts cannot always be translated literally. In contrast, 'correlation between form and meaning' means that the sound of some words already indicates their meaning (e.g. onomatopoeia), but in my view could potentially include polysemy since one word form may correspond to different meanings.[6] Finally, the terms word length, word class and word frequency should not warrant further explanations.

Concerning input factors Ellis (1999: 46–51) suggests that frequency, salience, contextual cues and the overall complexity of the input may affect vocabulary learning from oral input. However, in the context of this study factors relating to music might also play a role, for instance comprehension of sung words or salience through melodic contour. In addition, word frequency is often assumed to be an especially

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[6] Ellis (1999: 44–45) classifies correlation between form and meaning and polysemy as different categories.

important predictor of vocabulary acquisition. Nick Ellis (2002: 152) argues that "the recognition and production of words is a function of their frequency of occurrence in the language", but others suggest that it is the frequency of occurrence in the input which is decisive. Some experts have argued for a threshold effect that renders a minimum of six or seven encounters necessary to acquire a given word, whereas other researchers claim that a single exposure to a new word can already result in learning and that the process of acquisition is incremental (cf., e.g., Schmitt 2000: 117; Smidt and Hegelheimer 2004: 520; Vidal 2011: 224–225).

With regard to learner variables Ellis (1999: 53–57) limits his considerations to directly relevant factors such as L1 or L2 proficiency, but does not take wider variables such as motivation, learning goals or aspects of personality into account, although these can always be of importance. However, since it is difficult to operationalize and measure such subjective factors they cannot be investigated in this research project either. One last aspect that needs to be clarified concerning learner variables is Ellis' notion of 'procedural knowledge', which he defines as "strategies and procedures employed by learners to process L2 data for acquisition and use" (Ellis 1999: 55). According to this definition 'procedural knowledge' seems to correspond roughly to the concept of vocabulary learning strategies, which will be discussed in the next section.

## 2.2.3. Vocabulary learning strategies

Vocabulary learning strategies (VLS) are the subject of a substantial amount of research in foreign language learning (cf. Klapper 2008: 159) and several categorizations of VLS have been proposed, for instance by Oxford (1990), Gu and Johnson (1996), Schmitt (1997) or Nation (2001). In the context of this study the VLS that Schmitt (1997: 206) called 'discovery strategies' and Nation (2001: 219) entitled 'sources: finding information about words' are of particular importance because they are concerned with finding the meaning of unknown words. Since Schmitt's taxonomy includes all the source strategies mentioned in Nation as well as more specific strategies I will mainly refer to his taxonomy, which builds on previous work by Oxford (1990).

Discovery strategies are defined as "strategies for gaining initial information about a new word" (Schmitt 1997: 206) and fall only into two of the five categories of Schmitt's taxonomy.[7] determination strategies and social strategies. Determination strategies refer to ways of trying to find out the meaning of a word on one's own, while social strategies entail the help of other people. Table 3 lists the VLS that Schmitt includes in these two categories.

| Strategies for the discovery of a new word's meaning | |
|---|---|
| analyse part of speech | |
| analyse affixes and roots | |
| check for L1 cognate | |
| (analyse any available pictures or gestures) | Determination strategies |
| guess from textual context | |
| bilingual dictionary | |
| monolingual dictionary | |
| word lists | |
| flash cards | |
| ask teacher for an L1 translation | |
| ask teacher for a paraphrase or a synonym of new word | |
| ask teacher for sentence including the new word | Social strategies |
| ask classmates for meaning | |
| (discover new meaning through group work activity) | |

**Table 3: Discovery strategies from the taxonomy of vocabulary learning strategies by Schmitt (1997: 207).**

All of these vocabulary learning strategies seem applicable in the context of incidental vocabulary acquisition from pop songs except for 'analysing available pictures or gestures' and 'discovering a new meaning through a group work activity', which is why they were put in brackets. Furthermore, the activity of listening to English pop songs during one's free time can also be classified as a VLS; in fact, it is included in one of the metacognitive strategies proposed by Schmitt (1997: 208), which he calls "use of English-language media (songs, movies, newscasts, etc.)". Metacognitive strategies are used by students to plan, control and evaluate their own learning and increased foreign language input is one possibility to enhance learning opportunities. As Schmitt summarizes succinctly: "To efficiently acquire an L2, it is important to maximize exposure to it" (Schmitt 1997: 216).

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[7] The remaining three categories are memory, cognitive and metacognitive strategies and are included in the overall label of consolidation strategies (cf. Schmitt 1997: 205–206).

Since songs are received as oral input, another set of strategies that is significant for this study are listening strategies. As Vandergrift (2004: 4) points out "[l]istening is probably the least explicit of the four language skills, making it the most difficult skill to learn." Listening usually includes both top-down processes, such as use of context and previous knowledge, and bottom-up processes, like for instance word segmentation. Word segmentation presents a great challenge for less-advanced L2 listeners because it involves online analysis of the speech stream and automatic processing, but little of what beginners hear can be analysed quickly and processed automatically. In addition, word segmentation skills are language-specific and acquired early in life, which means that most listeners involuntarily apply L1 word segmentation even when listening to a foreign language (cf. Vandergrift 2004: 4–5 & 2008: 91).

To help L2 learners develop listening skills, Vandergrift (2008: 86–89) proposes a taxonomy of listening comprehension strategies, but few of them apply to songs in an incidental learning context because they are aimed mainly at spoken oral texts and at situations in which learners actively try to understand as much as they can. In fact, Vandergrift (2008: 84) defines listening strategies as "deliberate procedures used by learners to enhance comprehension, learning and retention of target language" and it could therefore be argued that such a deliberate use excludes incidental learning. However, listening strategies can be used even in incidental learning settings to understand the content of a song, for instance, and once a strategy has been successfully acquired, learners might also be able to apply it more flexibly without conscious attention. In any case, the strategies proposed by Vandergrift (2008: 86–89) that could potentially also be applied to songs are selective attention, for instance by attending to specific words, linguistic inferencing, personal and world elaboration by employing prior knowledge and experience, translation, transfer of language knowledge and repetition.

To summarize, learning strategies are very relevant to this study because listening to foreign language pop songs in out-of-school contexts can be regarded as a metacognitive strategy and learners may usefully employ listening strategies to comprehend songs and vocabulary learning strategies to find out the meanings of new words. Even if VLS are applied, learning from pop songs can still be considered as incidental in most cases because the students' main purpose will hardly ever be the learning of new words and most of the acquisition will take place unplanned.

## 2.3. Research on incidental vocabulary acquisition from oral input

Most studies on incidental vocabulary acquisition have focused on reading whereas "vocabulary learning from listening has received much less attention" (Read 2000: 47). Nonetheless, there are studies on incidental vocabulary acquisition from several types of oral input such as modified input, stories, lectures, teacher talk, audiovisual media and music. Owing to the competing definitions of incidental learning and to the different research contexts, these studies differ considerably with regard to their aims and methodology. However, since participants are usually focusing on meaning and are typically unaware that their vocabulary uptake will be measured, most of the research projects presented in this section can be considered incidental at least in a very wide sense.

### 2.3.1. Studies on modified input

From a historical point of view studies on vocabulary uptake from modified oral input are of interest because they appear to be the earliest studies on oral input in general. Following the proposal of the input (Krashen 1982) and the interaction hypothesis (Long 1981) research on modified input tried to investigate the differences in acquisition between baseline, premodified and interactionally modified input. Participants were typically asked to carry out tasks according to the instructions of English native speakers with either no input simplification and no possibility for interaction (baseline input), with simplified input (premodified input), or with the possibility of asking for clarification (interactionally modified input) and were tested for the acquisition of word meanings afterwards (cf., e.g., Ellis et al. 1994; Loschky 1994; Ellis and Heimbach 1997; Ellis and He 1999).

The relation of these studies to incidental vocabulary acquisition is very vague; none of the articles cited above mentions the concept of incidental learning explicitly. Neither do they state clearly whether participants knew that vocabulary uptake would be measured. Yet, it seems that learners were usually not told to focus on vocabulary intentionally and thus the studies can be regarded as investigating a very weak form of incidental learning. The most fundamental insight that can be gained from these results is that vocabulary can indeed be acquired from oral input. Generally vocabulary gains are highest in the interactionally modified input groups, but also premodified and baseline input result in acquisition, which confirms that words can be learned through listening alone (Ellis et al. 1994; Loschky 1994). In addition, the

findings also shed light on the relation between comprehension and acquisition: two studies that investigated this issue (Loschky 1994; Ellis and Heimbach 1997) found no strong correlation between the understanding and learning of vocabulary. Loschky (1994: 320) thus concludes that "while the role of the comprehension process in acquisition appears to be quite strong, it also seems much more complex than previously suggested by the input hypothesis." This indicates that comprehension of oral input does not necessarily lead to vocabulary acquisition, although it appears to be a necessary prerequisite for successful acquisition.

## 2.3.2. Studies on listening to stories

Vocabulary uptake from listening to stories was another subject of early research on oral input (cf., e.g., Elley 1989; Feitelson et al. 1993), but it has also been investigated in more recent publications (cf., e.g.,. Brown et al. 2008). The study by Elley (1989) has been particularly influential because it illustrates that children at pre-school level can benefit from exposure to oral texts in both their native and second language.[8] In two different experiments children listened to a story being read three times over the period of one week and were than tested for vocabulary retention. Experiment one used a story with pictures and ascertained that incidental vocabulary learning from oral stories did indeed occur, while experiment two was devised to compare two different stories and the effects of different methods of story presentation on vocabulary uptake. Interestingly, in the second experiment, the degree of involvement produced by the stories was found to be a decisive feature for the acquisition of new words: the story in which the children engaged more actively resulted in much higher vocabulary gains than the second less engaging story (Elley 1989: 182, 185).

Feitelson et al. (1993) investigated vocabulary learning from Arabic stories in a diglossic setting in Israel with children at kindergarten level. The participants listened to stories over a period of five months and were then tested on listening comprehension and productive story-telling abilities. Results show that children in the experimental classes did not only outperform the control groups on the listening

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[8] The main experiments of Elley's (1989) study took place with English-speaking children in New Zealand, but extensive pre-studies on Pacific Islands show that learners of English as a second language benefit from exposure to oral texts as well.

comprehension test, but in the productive post-test they were able to use a richer vocabulary in comparison to the vocabulary pre-test and more complicated structures than the other groups (Feitelson et al. 1993: 75). In contrast to Elley (1989: 184), who explicitly mentions that words were acquired incidentally in his study, Feitelsohn et al. (1993) are not primarily concerned with incidental vocabulary acquisition. However, the findings are relevant to the present study nonetheless since word knowledge was measured in a pre-test and as part of the productive post-test and since new words must have been acquired unintentionally during the treatment phase.

In a more recent study with Japanese university students Brown, Waring and Donkaewbua (2008) examined vocabulary learning from stories in three different input modes: reading, reading-while-listening and listening. Vocabulary gains were lowest for the listening-only mode, but the authors concede that "the subjects […] displayed a critical lack of familiarity with spoken English" (Brown et al. 2008: 148). Besides, the notion of incidental learning is used in a rather peculiar way in this study. Brown, Waring and Donkaewbua (Brown et al. 2008: 136) define incidental learning as "the process of learning something without the intention of doing so" and as "learning one thing while intending to learn another", but later state the following concerning the methodology used:

> The subjects were initially told that they would take part in a vocabulary-learning strategies program in which they would read and listen to some stories and that by using background knowledge, context, and co-text, *they were to try to infer the meanings of any unknown words*. (Brown et al. 2008: 141, my italics)

Hence, there appears to be an inherent contradiction in the design of the study because even if participants were not informed about an upcoming post-test, which would correspond to the methodological sense of incidental learning, the instruction to infer meanings most probably focused the students' intention on these and thus contradicts the definition given earlier.

These studies on vocabulary learning from listening to stories illustrate that already young learners can benefit from oral input with regard to vocabulary uptake, listening comprehension and productive story-telling abilities. The gains in vocabulary knowledge are usually relatively small; in Elley's (1989: 178) study reading without explanations resulted in a mean increase of 15.4% for 20 target words, but in Brown, Waring and Donkaewbua's (2008: 148) research project only 2% of the 28 target words were learned.

## 2.3.3. Studies on lectures and teacher talk

Incidental vocabulary learning has also been researched in academic and school contexts. Studies have investigated incidental learning from lectures (cf., e.g., Vidal 2003 & 2011, from web-delivered CALL lectures (cf., e.g., Smidt and Hegelheimer 2004; Lin 2010), teacher talk (cf., e.g., Donzelli 2007; Horst 2010) and in immersion programmes (cf., e.g., Wode 1999). Due to differences in aims and methodology it is difficult to compare these studies, but they all show that incidental learning from spoken oral input is indeed possible (Wode 1999: 252; Vidal 2003: 69; Vidal 2011: 234; Smidt and Hegelheimer 2004: 530; Donzelli 2007: 118; Lin 2010: 8). While the studies on teacher talk mainly compare the possibility of incidental vocabulary acquisition from different sources such as classroom discourse and course books (cf. Wode 1999; Donzelli 2007; Horst 2010) and are therefore less relevant to the present study, the findings of studies on academic listening may provide insights about which factors facilitate incidental vocabulary learning.

Vidal (2003) investigated vocabulary learning from academic lectures. Spanish university students were presented with video-taped lectures, which they were shown only once, and were then tested on listening comprehension and vocabulary gains. A significant difference was found between pre-lecture and post-lecture vocabulary scores, but also between the post-lecture test and a delayed post-test, which means that not all new lexical items were retained in long-term memory (Vidal 2003: 69). Further analyses showed that the level of English proficiency had a significant influence on vocabulary learning and that predictability from word parts, type of word (low frequency, technical, academic), type of word elaboration in the input and frequency of occurrence also had an impact. A later study (Vidal 2011), which used the same materials, compared the effects of academic reading and listening on incidental vocabulary acquisition. As in Brown, Waring and Donkaewbua (2008) listening resulted in lower vocabulary gains than reading (2011: 235) but "the difference in gains between the reading and listening conditions decreased as the students' proficiency increased" (Vidal 2011: 219). Analyses by word indicated that predictability from word form and parts was the best predictor of increased vocabulary knowledge followed by type of word, type of word elaboration in the input and frequency of occurrence. This is exactly the same order of impact factors as in the previous study (Vidal 2003), which points to the fact that phonological form appears to be the most important influence on vocabulary learning through listening.

In a study comparing groups with different reading and listening proficiencies Lin (2010) ascertained that language skills also had an impact on vocabulary learning as students with higher reading and listening skills outperformed students with lower skills. Smidt and Hegelheimer (2004) used web-delivered lectures to research listening comprehension, incidental vocabulary acquisition and the use of learning strategies. Their results indicate that participants with a higher proficiency preferred monitoring and inference strategies and used more strategies overall, while lower proficiency students relied on cognitive strategies (Smidt and Hegelheimer 2004: 535–537). Hence, the results of this study confirm previous findings that overall language proficiency has an impact on incidental vocabulary learning and further suggests that not only previous language knowledge, but also a more sophisticated use of learning strategies influences acquisition.

In summary, these research projects show that vocabulary can be learned incidentally in school and university contexts and that a number of factors such as language proficiency, learning and listening strategies and word-related factors, such as predictability from phonological form, type of word, the context within the input and frequency of occurrence may affect it.

## 2.3.4. Studies on audiovisual media

Another field of research on vocabulary learning is audiovisual media such as movies and television (cf., e.g., d'Ydewalle and van de Poel 1999; Milton 2008; Kuppens 2010) or computer and video games (cf., e.g., deHaan and Reed 2010).[9] The advantage of audiovisual media is that they provide different kinds of information simultaneously. Consequently, aspects like the dual coding of information in both the oral and the visual mode (cf. Milton 2008: 227) or the learners' interactive engagement with verbal features (cf. deHaan and Reed 2010: 75–76) could potentially facilitate incidental vocabulary learning. These aspects are, however, not significant for the study of incidental learning from music and will therefore not be presented in detail. The most significant overlap between previous studies of audiovisual media and the present study of pop songs is that activities like watching

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[9] With the exception of the study by de Haan, Reed and Kuwada (2010) all of theses studies investigated incidental vocabulary learning. De Haan, Reed and Kuwada do not state whether participants were instructed to focus on word meanings or not, but it appears that they were only told to play a video game or watch somebody play it.

TV and playing computer games usually take place in out-of-school contexts as well and that they have been demonstrated to lead to increased lexical knowledge. For instance, d'Ydewalle and van de Poel (1999: 242) conclude that their "study shows real but limited foreign-language acquisition by children watching a subtitled movie, despite the short exposure time (10 min)." In Milton's (2008) single subject study the learner retained 22 new Greek words after watching a subtitled DVD for the first time and acquired a total of 40 lexical items over the period of the following 4 weeks. In a study using a music video game by DeHaan, Reed and Kuwada (2010: 82) players learned 7.23 new words on average in the course of 20 minutes and 5.25 were still remembered after two weeks.

Furthermore, research findings by Kuppens (2010) indicate that audiovisual media, especially the watching of subtitled TV programmes, are a particularly well-suited way to learn new words. Kuppens carried out a study investigating the long-term effects of English media consumption on the foreign language skills of Flemish primary school children. Based on a questionnaire, oral English vocabulary and grammar tests, and translations tests from English to Dutch and vice versa she examined the influence of listening to music, watching TV and playing computer games on the children's English proficiency. By applying general linear modelling to the results of the translation tests Kuppens (2010: 75–76) was able to demonstrate that watching subtitled TV programmes or movies had a significant effect on translations skills in both directions. Playing computer games was also found to promote translation skills from English to Dutch, but no effect for music emerged in either direction.[10] These findings may indicate that media which combine both auditory and visual information such as television or computer games may exert more influence on foreign language proficiency than music, which only provides aural input.

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[10] It is unfortunate that the results of the vocabulary tests are not reported in the article (Kuppens 2010) in detail because they would certainly be of relevance to the present study and it is difficult to draw inferences about vocabulary acquisition from results of the translation tests.

## 2.3.5. Studies on music

The last area of interest is studies on vocabulary learning from music and songs. As has been mentioned in the introduction (see section 1.1.) there appears to be a research gap here because there is practically no empirical research on incidental vocabulary acquisition from music and songs in out-of-school contexts. Several studies have investigated the effects of the use of songs on lexical learning within school projects (cf., e.g., Medina 1990 & 2003; Benko 2002; de Groot 2006; Beasley and Chuang 2008; Legg 2009; Li and Brand 2009; Yilmaz 2011), but only one of them explicitly mentions incidental learning (cf. Medina 1990: 1). Reports on the other research projects do not indicate clearly how lexical items were acquired, but it can be assumed that varying degrees of intentionality and planning were involved in the different projects. To the best of my knowledge, the only empirical study on vocabulary acquisition from pop songs in informal contexts so far is reported in Milton (2008: 231). Milton, who rejects the notion of incidental learning (see section 2.1.1.), carried out a single-subject study with the same learner of Greek as in the study on vocabulary learning from a subtitled DVD (see previous section). The participant listened to a CD once a week for eight weeks and his vocabulary uptake was measured each week and three months after the end of the treatment. Over the course of eight weeks the leaner acquired 77 out of 100 target items and 41 of these were retained in long-term memory as shown by the delayed post-test (Milton 2008: 231). As Milton points out, the learner probably focused very actively on vocabulary learning due to the weekly tests and thus true incidental learning would almost certainly result in lower retention rates. Still, one other interesting finding that emerged in this study is the relation between the number of repetitions of a given word in the songs and its learnability. Not only were target words that occurred more frequently more likely to be learned, but they also appeared to be affected less by attrition. All words that were repeated at least four times had a 100% retention rate after three months, which leads Milton (2008: 232) to the conclusion that "[t]he relationship between long-term retention and repetition in the text is very striking and appears to be an almost straight-line relationship".

The studies set within school contexts are also of relevance to the present research project because they typically compare a group receiving music-based teaching with one or more control groups and therefore demonstrate that music can enhance vocabulary learning. Two articles by Medina (1990 & 2003) report on the same study,

which examined differences in vocabulary acquisition due to the use of songs and illustrations with four groups of second-grade Spanish-speaking students. The students were exposed to treatments involving the use of music and illustrations in four different combinations and were then tested on vocabulary uptake. Results showed no statistical significance according to medium of presentation (music or no music) or extralinguistic support (illustrations or no illustrations). Still, the group presented with both music and illustrations achieved the highest results and thus, Medina (1990: 18) concludes that the use of musical stimuli is at least equally effective to conventional teaching methods. Similarly, Benko (2002) conducted a study with Maltese learners of English and found that active music production through singing and a simple choreography had positive effects on the learning of new words occurring in a song written especially for the experiment. In the vocabulary post-test, which was carried out one week later, the majority of students were able to recall the meaning of the previously unknown words at once or with the help of the melody, which illustrates that music may indeed act as a mnemonic. Legg (2009) investigated the acquisition of French words and phrases using a short poem and a song version of the same text. The outcome of his study shows that there was a statistically significant difference between the results of the music group and the results of the non-music group after two French lessons (Legg 2009: 6–7).

Li and Brand (2009) analysed the influence of the use of songs on vocabulary learning, language usage and meaning with adult Chinese ESL students. 105 participants were taught in three different groups for nine hours of instruction. The first group was taught according to an all-music syllabus, the second used music half of the time and the third group acted as the control group with no music input. Results of the post-test showed that all three groups had improved significantly in comparison to the pre-test, but the all-music group achieved the highest scores, the no-music group the second highest and the half-music group received the lowest scores. Between groups statistically significant differences were found between the two higher achieving groups and the half-music group, but not between the all-music and the no-music group (Li and Brand 2009: 79–80). Astonishingly, this finding seems to suggest that while teaching with songs has positive effects on lexical learning, not using them at all is more effective than using a mixture of song-based and conventional teaching. Finally, Yilmaz (2011) also compared two experimental classes with regard to vocabulary acquisition, but mainly used music without lyrics as

a background or as a prompt to trigger certain moods. The research project lasted for six weeks with a total of 24 hours of instruction and resulted in significantly more gains for the music-group than for the control group (Yilmaz 2011: 92). Similarly, de Groot (2006: 495) also found beneficial effects for background music on vocabulary learning, but not all participants profited from the presence of background music. This indicates that language acquisition with the help of music may not be the best option available for all language learners as they differ with regard to preferences for different learning contexts and learning styles.

Beasley and Chuang (2008) carried out a project with a slightly different approach as they used a web-based music study to investigate the influence of songs on perceptions of learning and the learning environment, and on learning outcomes. Since the 196 Taiwanese participants were instructed to listen to treatment songs "as many times as necessary to fully understand them" (Beasley and Chuang 2008: 4) the study appears to be more concerned with intentional vocabulary learning, nevertheless interesting insights on influencing factors were gained. Beasley and Chuang found no significant correlations between improvement of vocabulary scores and listening repetition or song likeability, but a weak correlation was found for song understandability (Beasley and Chuang 2008: 7–8). This indicates that with regard to vocabulary learning from songs textual comprehension seems to be more important than musical preferences. The same variables will also be taken into account in the present study and therefore these findings are certainly interesting as well as highly relevant.

In sum, these studies suggest that vocabulary can be learned from music and songs and from a variety of other sources of oral input such as modified input, stories, lectures and teacher talk and audiovisual media like TV and computer games. As has been shown in this chapter, vocabulary gains from incidental learning are usually rather small, but not all of the studies mentioned actually investigated incidental learning. Especially with regard to music and songs there appears to be a lack of research on incidental vocabulary acquisition in informal out-of-school contexts, which confirms the need for the present study as outlined in the introduction.

# 3. Music and Language

The relation between music and language is the subject of research in a wide interdisciplinary field and therefore it is practically impossible to give a comprehensive overview of this complicated issue here. What is most important in the context of the present study is the question whether and to what extent music and language are integrated cognitively in the human brain, in particular with regard to song perception. As background to the discussion of cognitive features a brief introduction about similarities and differences of music and language will be provided first. In addition, beneficial effects of music on verbal learning and on long-term retention as well as reasons for the use of music in language teaching will be considered in the second section.

## 3.1.    Parallels and differences

The comparison of music and language is nothing new, the issue has excited interest for hundreds of years and great thinkers of the past such as Rousseau, Darwin, Descartes or Wittgenstein have already addressed it (cf., e.g. Besson and Friederici 2005: 57; Patel 2008: 4). In the early 1990s advances in brain-imaging methods provided a fresh impetus for research on the relation between music and language (Besson and Friederici 2005: 57) and since then a renewed interest in the topic has resulted in numerous studies with many of them focusing especially on cognitive aspects.

On the surface music and language appear to be rather similar because they share a number of common features on the structural level: both consist of sounds and make use of rhythm, pitch, volume, stress and pauses (cf., e.g., Fonseca Mora 2000: 147, Lowe 2007: 5). However, slightly below the surface important divergences can be found; for instance, musical pitch and linguistic intonation are organized very differently. Musical beat is typically isochronous and periodic, while linguistic rhythm is not although it uses a metrical structure as well. Finally, comparisons of musical and linguistic syntax have shown that although both combine discrete elements into hierarchically structured sequences, music has no counterpart to crucial linguistic features such as linear order or affixation (cf. Jackendoff 2009; Patel 2008). On yet a deeper level, it has been argued that music and language again show significant parallels, for example, concerning mechanisms for sound category learning, non-periodic aspects of rhythm or shared resources for the processing of syntactic

structures (Patel 2008). What this extremely superficial summary[11] shows is that the relation between music and language is highly complex and can be investigated on a variety of different levels, which complicates matters even further. Consequently, much of what is known about the issue can be interpreted either as a sign for the relatedness of music and language (e.g. Patel 2008) or as evidence against it (Jackendoff 2009: 203).

From an evolutionary point of view the question of which of the two was first, is hard to answer. Already Rousseau and Darwin argued for a common origin of music and language (cf. Besson and Schön 2001: 234 & 2003: 270–271) and most authors in a recent collection by Wallin, Merker and Brown (2000) also seem to concur. For instance, Molino (2000: 173) suggests that "music, language, dance, chant, poetry and pretend play all have a partly common origin". Jackendoff (2009: 196) regards the fact that all non-human species have neither music nor language and that every human culture has its local variant of the two as one of the greater similarities, and Patel (2008: 3) even goes so far to say that "[l]anguage and music define us as human."

Similarly, music and language also seem to develop in analogous ways in early childhood. Studies by Saffran (2003a & 2003b) indicate important parallels in the ways music and language are learned:

> We thus see a surprising level of similarity in infant memory representations for music and for language. In both cases, infants readily represent the input at multiple levels of analysis, from highly specific surface cues to the structural information that eventually conveys meaning. Moreover, these processes of learning and memory proceed without instruction or reinforcement other than the pleasure of listening and the instinct to learn. […] From the infant's perspective, music and language may not be nearly as different as they are for the adult listener, at least when considering what is to be gleaned from a listening experience (Saffran 2003a: 39).

Other authors have also commented on the remarkable abilities of young children to distinguish between and learn from sounds (cf., e.g. Patel 2008: 82–83; Murphey

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[11] Unfortunately, it is not possible to go into detail here as the analysis of structural parallels and differences between music and language fills books of its own. The topic is, however, truly fascinating; for instance, researchers have found that cultural differences in linguistic rhythm are reflected in musical rhythm (Patel 2003b) or that patterns of tension and relaxation in music can be compared to linguistic syntax (Patel 2003a). Interested readers are referred to the work of Patel (2005; 2008; 2010; & 2012) for a discussion of similarities between music and language and to Jackendoff (2009) or Peretz (2006) for a more critical view, which generally regards the two domains as fundamentally different.

1990a: 97; Fonseca Mora 2000: 148). For instance, Patel (2008: 82) reviews studies which show that infants gradually lose the ability to perceive subtle phonetic differences as they adapt to the language and music of their native culture, which suggests that auditory learning is crucial at this early stage.

The major difference between music and language seems to be their respective function. Whereas language commonly expresses propositional meaning, music can only convey more subtle meanings such as emotions or affect (Jackendoff 2009: 197). Music is commonly considered a self-referential system (Besson and Schön 2003: 273), which cannot refer to extra-musical referents to communicate meaning in the same way as language. Instead, it conveys affective content in most of its social functions (Jackendoff 2009: 197–198). Of course, language can express emotional content as well, an aspect that Patel (2008: 344) regards as a key link between music and language, but language is primarily used for factual communication. Recently, a study by Koelsch et al. (2004) has demonstrated that music can prime semantic meaning independent of the emotional content of the primed concepts and independent of direct extra-musical links to language. These and further results led Koelsch (2011: 103) to the conclusion that

> music can communicate meaning, notably not only meaning related to emotion, or affect, but iconic, indexical, and symbolic meaning (with regard to extra-musical meaning), as well as intra-musical meaning.

In an answer to this article Slvec and Patel (2011) point out that the view of semantics taken by Koelsch is indeed very broad and that he disregards three key differences between musical and linguistic semantics: firstly, linguistic meaning is far more specific than musical meaning; secondly, linguistic meaning is compositional and can combine meaningful units; and thirdly, linguistic meaning is used for communication, whereas musical meaning clearly is not. As a consequence, even if other researchers have argued that "[m]usic and language can […] be interpreted as context-specific manifestations of a common substrate for human communicative capacities" (Cross 2012: 326), it seems that their functions within communicative contexts are fundamentally different.

So far, structural, evolutionary and functional parallels and differences between music and language have been considered. It has been shown that the two domains show both similarities and differences on various structural levels, that they probably developed from a common ancestor and that their divergent functions constitute the

most essential difference. The most relevant findings in the context of this study derive, however, from research investigating the parallels and differences between music and language with regard to cognitive aspects. In general, there are two competing views with one group, whose most prolific researcher seems to be Patel (cf., e.g., Patel 2003a; 2003b; 2005; 2008; 2010; 2012), arguing for a cognitive integration of music and language and another group, whose most fervent advocate seems to be Peretz (cf., e.g., 2006; 2010; 2012; Peretz and Coltheart 2003; Peretz et al. 2009), arguing for autonomous representations of music and language within specific cognitive domains. Hence, supporters of the integrated view posit that music and language are at least partly integrated in mental representations and that they make at least partial use of shared mechanisms (cf., e.g., Patel 2008: 4). In contrast, adherents of the autonomous view argue that language and especially music are processed largely in specialized mental modules which are domain-specific and that the two domains are thus not linked to each other cognitively (cf., e.g. Peretz 2012: 264).

> To claim that there is a music-processing module is to claim that there is a mental information processing system whose operation is specific to the processing of music (Peretz and Coltheart 2003: 688).[12]

The discussion of the modularity or non-modularity of music goes back to claims about the modularity of language in the context of generative grammar theory (Besson and Schön 2003: 275), which maintained that language is autonomous from other cognitive functions. This view has also been applied to music subsequently and has led to a renewed interest in research on this topic from the 1990s onwards.

One line of research investigating the cognitive relation of music and language is concerned with studies on song perception and song memory, which can shed light on the integrated versus autonomous debate. Songs are an ideal subject for neurocognitive research because they "provide a unique and intimate combination of speech and music" (Besson and Friederici 2005: 58). The results of such research projects also have important implications for the present study.

Several studies have found support for independent processing of music and text in the human brain using different research methods and materials. In a study using

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[12] For a more detailed discussion of the notion of modularity in cognitive science see Peretz and Coltheart (2003) or Peretz (2006).

electroencephalogram (EEG) recordings to investigate event-related potentials (ERP)[13] Besson et al. (1998) asked professional musicians to listen to opera excerpts with semantically congruous or incongruous and in-tune or out-of-tune endings. Different combinations of stimuli elicited different ERP components and thus demonstrate that the processing of semantics is not affected by the processing of harmony and vice versa. In a later study using the same materials Bonnel et al. (2001) found further evidence that semantic and melodic incongruities in songs are processed independently. Racette and Peretz (2007) analysed learning and productive recall of lyrics in different input and testing conditions in order to examine whether learning a text in combination with music facilitates text recall. Results show that fewer words were recalled when a text was learned and tested through singing, than when it was learned and tested through speaking. The study does therefore not only provide evidence against the popular notion of music as a memory aid, but also indicates that melody and lyrics have separate mental representations at least in the early stage of learning song lyrics. Likewise, in a study using positron emission tomography (PET) Groussard et al. (2010) compared the brain areas involved in music and verbal semantic memory. Their results suggest that "verbal and musical types of material draw on two different networks" (Groussard et al. 2010: 2772) and therefore lend further support to the independence of musical and linguistic representations in memory.

A number of studies have also investigated the autonomy of melody and lyrics with patients suffering from "selective impairments of music recognition abilities after brain-damage" (Peretz and Coltheart 2003: 688), a condition which is called amusia.[14] Such patients have lost the ability to recognize melodies, while they have normal recognition of verbal input or environmental sound. Likewise, patients who are affected by verbal agnosia cannot recognize spoken words, but are normal at recognizing music (cf. Peretz and Coltheart 2003: 688–689; Peretz 2006: 12, 2012). Studies with amusic patients like for instance by Hébert and Peretz (2001) illustrate that the melody and lyrics of songs are separable by brain damage. Interestingly, the

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[13] For a glossary of technical terms within cognitive research on music see Koelsch and Schröger (2008: 397–400).

[14] Amusia exists in two forms: it can either be 'acquired' due to accidents resulting in brain damage or 'congenital' entailing lifelong difficulties with music perception (cf. Peretz and Coltheart 2003: 688–689; Peretz 2006: 12).

amusic patient was able to ignore the tune and judge the text only, while text and tune appeared to be inseparable for control subjects with normal brain functioning. These findings lead the authors to suggest that the relationship between music and language might be "one of association, rather than integration" (Hébert and Peretz 2001: 174).

In contrast to the studies mentioned above, the results of other research projects support the view that music and language are integrated in cognitive representations. In contrast to the results of Besson et al. (1998) and Bonnel et al. (2001), Bigand et al. (2001) and Poulin-Charonnat et al. (2005) were able to show that the harmonic structure of music may not only influence phonological processing (Bigand et al. 2001), but also interferes with the semantic processing of words (Poulin-Charronnat et al. 2005). Again, congruity and incongruity of text and music were used to examine the relation of music and language in songs, but instead of using unaccompanied melodies as in the previous studies, full harmonic chord sequences were employed. Results indicate that both semantic and harmonic contexts influence the processing of words, and hence that music interferes with linguistic processing. Even more importantly, the findings suggest that music "can modulate semantic priming in vocal music, by modifying the allocation of attentional resource [sic] necessary for linguistic computation" (Poulin-Charronnat et al. 2005: B67).

Further support for an at least partial integration of music and language in song perception was found in the studies of Kolinsky et al. (2009), who analysed the interaction between phonological and melodic aspects of songs, and in two studies comparing spoken language, vocalizes, and sung language (Schön et al. 2005; Schön et al. 2010). Using functional Magnetic Resonance Imaging (fMRI) both studies found large overlaps between the regions involved in language, music and song processing. However, the authors emphasize that these results were gained by comparing the lexical and phonological levels of language processing and the melodic aspect of music processing and cannot be generalized to other aspects (Schön et al. 2010: 460). Contradictive findings of different studies may thus either be due to crucial differences in stimuli and research designs (cf. Schön et al. 2005: 73), or they could be the result of differences in processing on separate levels of music and language as both are complex systems, rather than single entities (cf. Schön et al. 2010: 450; Hickok and Poeppel 2007; Peretz and Coltheart 2003).

Regarding the storage of melody and lyrics, a study by Peretz, Radeau and Arguin (2004) used a priming technique to analyse the relation between melody and lyrics in song memory. The experiments revealed a two-way interaction between text and tune, meaning that the melody was found to facilitate the recall of lyrics and that the lyrics could also trigger the recall of the melody. According to the authors these

> results indicate that, in song memory, text and tune are related by tight connections that are bidirectional and automatically activated by relatively abstract information (Peretz et al. 2004: 142).

To sum up, both hypotheses concerning music and language processing have been supported by research to some extent so far. Reasons for this mixed evidence might be differences in experimental design or the targeting of different levels of processing within different studies as mentioned above. Still, in the latest studies the evidence for integrated representations of music and language in song perception and memory seems to outweigh support for autonomous modules, and in fact it has been argued that the whole notion of modularity is an outdated concept (cf. Besson and Schön 2012). Even Peretz appears to have attenuated her claims in a recent publication by stating that music may be only partly modular: "[T]here is evidence that musical abilities depend, in part, on specialized cerebral processes" (Peretz 2012: 264). In contrast, advocates of the integrated view sometimes seem to overrate the similarities between music and language (cf., e.g. Patel 2008) and thus the truth may actually lie somewhere in between these extreme points of view. In fact, a model which

> assumes that music and language show parallel combinatoric generativity for complex sound structures (phonology) but distinctly different informational content (semantics)

and hence combines both hypotheses has been proposed by Brown, Martinez and Parsons (2006: 2791). In addition, research with children has shown that certain cognitive aspects might be domain-general during childhood and modularize later in life (cf., e.g., McMullen and Saffran 2004: 289, Skoe and Kraus 2012: 277). Further research is certainly needed, in particular because studies comparing music and language have disregarded other cognitive skills so far and thus some characteristics of music and language processing might also be shared by other cognitive functions (cf., e.g. Jackendoff 2009). For the moment, however, there is sufficient evidence to show that music and language are at least partially integrated in song processing and this fact will be exploited in the present study.

## 3.2. Effects of music on language learning

Possible beneficial side-effects of music on general cognitive skills have long been the subject of heated theoretical discussions and positions range from its being "auditory cheesecake" (Pinker 1997: 534), a useless invention without any greater function, to its being a

> transformative technology of the mind […] that can have lasting effects on such nonmusical brain functions as language, attention, and executive function (Patel 2010: 91)

This section will briefly summarize research findings investigating the effects of music on other cognitive functions and especially on language skills. First, the influence of music perception, music training and general musical ability will be discussed and then evidence for claims about the effectiveness of music as a mnemonic device will be reviewed. Finally, an overview of the role of music in language teaching will be provided and reasons for the use of music and songs in language classrooms will be given.

## 3.2.1. Effects of music perception, music training and musical ability

Following the proposal of the famous 'Mozart effect' (Rauscher et al. 1993) in 1993, research on the effects of music on other skills received renewed interest. "[T]he possibility that *music makes you smarter*" (Schellenberg 2006: 111, author's italics) inspired vivid discussion in the press and the general public and stimulated further research on this issue. By now a number of studies have provided evidence against the 'Mozart effect' and experts commonly agree upon the fact that the positive influence of a piece of music by Mozart on spatial task performance found by Rauscher, Shaw and Ky (1993) was most probably a result of their research design and of the differences in arousal or mood (cf., e.g., Schellenberg 2003 & 2006; Kopiez 2008).

Nevertheless, music has been shown to exert positive influence on other cognitive abilities, but as Schellenberg (2003: 430) emphasizes it is vital to distinguish between the short-term effects of music listening and the long-term consequences of musical training. Even if the hypothesis of the 'Mozart Effect' has been rejected, studies by Schön et al. (2008) and Kolinsky et al. (2009) have found positive short-term effects

of music on verbal learning.[15] Both studies have shown that receiving language input in combination with melody aids speech segmentation and that a consistent mapping of linguistic and musical information enhances learning. These findings indicate that

> learning a new language, especially in the first learning phase wherein one needs to segment new words, may largely benefit of [sic] the motivational and structuring properties of music in song (Schön et al. 2008: 975).

The potential advantages of prolonged musical training have also been investigated by several research projects. Schlaug et al. (2005: 224) report a significantly greater development of fine motor skills and auditory discrimination skills in five- to seven-year-old children who play an instrument in comparison to a control group after only 14 months of musical training. An additional cross-sectional comparison between a group of nine- and eleven-year-old instrumentalists and a control group showed significant beneficial effects for tonal recognition, rhythmic abilities and vocabulary skills, and strong trends for phonemic awareness and non-verbal reasoning skills (Schlaug et al. 2005: 226). Forgeard et al. (2008) conducted a study with nine- to ten-year-old children with a minimum of three years of music education and found advantages for the motor skills in both hands, melodic discrimination, non-verbal reasoning and verbal ability in the form of vocabulary. In addition, the duration of music training was shown to predict performance on the respective tests (Forgeard et al. 2008: 5).

Piro and Ortiz (2009) examined the effects of piano lessons on readings skills, vocabulary and verbal sequencing with second-grade students after three years of musical training and found that instrumentalists clearly outperformed their peers on both tests. Finally, a study by Pastuszek-Lipińska (2008a & 2008b) investigated differences in productive language abilities of Polish musicians and non-musicians for several languages. Overall, results show that musicians produced more sentences and encountered fewer problems than non-musicians although the number of correct productions differed among languages. Positive correlations, if only small to moderate, were found between the productive language skills and

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[15] In line with the purpose of this thesis, mostly results concerning language acquisition are reported here. For information on the effects of music perception on other cognitive skills see the excellent articles by Schellenberg (2003 & 2006).

musicianship, memory for musical stimuli, numbers of years of music education and overall musical skills.

Evidence from these studies appears to support the view that musical training can indeed promote verbal skills,[16] although there are of course other studies that did not find differences in the performance of musicians and non-musicians (cf., e.g., Racette and Peretz 2007). The advantages found in the studies presented above are most likely due to transfer or priming effects (cf. Schellenberg 2003: 431–432), but since all the studies employed correlational designs no direct causation can be attributed to music training or perception (cf., e.g., Schellenberg and Peretz 2008: 45). Reasons for the beneficial effects of music training on language skills and other abilities might include the fact that additional schooling further improves general intelligence, the fact that playing an instrument trains several cognitive abilities and motor skills, or the fact that productive engagement with music enhances abstraction skills (cf. Schellenberg 2006: 130).

In addition to research on music perception and training, a number of studies have investigated the effects of general musical aptitude on verbal abilities. Slevc and Miyake (2006) analysed the contribution of musical ability to second language proficiency in adult learners and found clear evidence that musical aptitude may support language learning. Using regression analyses they were able to demonstrate that musical ability predicts both receptive and productive phonological abilities, but does not account for variations in lexical or syntactic knowledge. The authors conclude that

> musical ability is unlikely to be a necessary component of adult L2 phonological acquisition [… but] the ability to analyze musical sound structure would also likely facilitate the analysis of the novel phonological structure of an L2 (Slevc and Miyake 2006: 679).

Gilleece (2006) reports on an extensive study on the influence of musical aptitude on receptive and productive foreign language skills. A significant correlation was found between music and receptive language skills even when controlling for the effects of non-verbal intelligence. The relation of musical ability and productive skills was less clear; results of sentence production tests in Spanish and Korean showed a

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[16] For the influence of musical training on other abilities such as spatial-reasoning and mathematical skills or general IQ see the summaries by Forgeard et al. (2008) and Schellenberg (2003 & 2006).

significant but only moderate correlation between the two. Finally, Milovanov et al. (2008) investigated the influence of musical aptitude on second language pronunciation skills in children. They compared learners with advanced pronunciation skills to learners with less-advanced pronunciation skills with regard to their musical abilities. The advanced pronunciation group achieved a higher amount of correct answers in both music and phonemic discrimination tests and the authors thus infer not only that there is a relation between musical aptitude and pronunciation skills, but also that music and language might rely on shared neural resources (Milovanov et al. 2008: 85).

In summary, evidence seems to accumulate that language learning may benefit from the short-term effects of music perception, the long-term effects of music training and musical aptitude in general. However, many aspects remain unclear and so far the findings on effects of music on verbal and other cognitive skills fall short of being conclusive. In any case, it is crucial to highlight that music is not a miracle cure to problems of language teaching and learning because not all learners profit from musical aptitude equally (cf. Slevc and Miyake 2006: 679) and benefits from musical training can only be acquired through hard work and hours of practice (cf. Schellenberg 2006: 130).

### 3.2.2. Music and memory

There is a popular belief that music and melodies may serve as mnemonic devices to aid the recall of verbal information. Historically, minstrels already used songs to narrate their stories (cf., e.g., Racette and Peretz 2007: 242) and nowadays many adults have made the experience that a well-known melody from their childhood can bring the corresponding lyrics to mind immediately (cf., e.g., Wallace 1994: 1471; Rainey and Larsen 2002: 173). Several studies have investigated this common belief from a neuroscientific point of view to establish whether the learning of text in form of a song does indeed promote recall.

Wallace (1994) conducted three experiments, which show that music may aid recall of previously unknown song lyrics in immediate and delayed post-tests, provided that the melody is simple and easy to learn and is repeated often enough. If the melody to which a text is learned is complex and changing or does not recur a sufficient number of times, it may not act as cue for the corresponding text and may even hinder recall. In general, musical rhythm was found to provide information about the length of the

text and the number of syllables and the melody was found to help structure the text further and to link textual phrases (Wallace 1994: 1481–1482). McElhinney and Annett (1996) carried out a similar study using a little-known pop song, which was presented to participants in a song or prose condition. Their results showed that participants in the song condition remembered significantly more words already after the second and third trial and recalled larger chunks of language. Additionally, several of the research projects concerned with vocabulary learning from songs, which were described in section 2.3.5, reported positive effects of music on memory and word retrieval processes (cf., e.g., Medina 1990; Benko 2002).

In contrast, a study by Racette and Peretz (2007), which has already been mentioned in the previous section, provides evidence against the notion of music as an effective mnemonic. The authors conclude that

> the best strategy for learning song lyrics is to ignore the melody. The melody seems to interfere rather than facilitate word recall in songs in both musically trained and untrained learners (Racette and Peretz 2007: 250).

Likewise, the results of a research project by Smith Salcedo (2002) do not fully support the popular belief either because music was found to aid immediate text recall but did not promote long-term retention. According to Smith Salcedo (2002: 113) these findings indicate "that the amount to which music aids in memory may depend on several variables not yet fully investigated".

As far as the question of musicianship is concerned, Peretz and Racette (2007) found no difference between trained musicians and non-musicians with regard to musical and verbal memory. However, in a study by Cohen et al. (2011b), which compared visual and auditory memory among musically trained and untrained participants, musicians outperformed non-musicians with regard to auditory memory, although overall memory for visual stimuli was superior to memory for auditory stimuli in both groups.[17] With regard to auditory memory the results of Cohen et al. (2011b: 588) show that musicians were significantly better at memorizing familiar and unfamiliar music, speech, and environmental sound clips.

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[17] The fact that memory for visual stimuli is generally superior to auditory stimuli is known from several previous studies (cf. Cohen et al. 2011b: 586), but the results by Cohen et al. (2011b) extend these findings by showing that visual memory is dominant even in trained musicians.

In addition to studies on the learning of song texts, further research projects have analysed the influence of music as a mnemonic on the learning of individual words. In experiments by Rainey and Larsen (2002) participants studied lists of unconnected names in either visual form, spoken form or sung to a familiar melody. In both experiments participants in the sung condition did not learn the names faster, but they needed significantly fewer learning trials to relearn the list a week later. These findings illustrate that music may not enhance the speed of learning, but learning verbal information in combination with a well-known melody may aid long-term retention or facilitate mental rehearsal in between testing sessions (cf. Rainey and Larsen 2002: 183–185). Similarly, a study by Thaut et al. (2008) showed that music also enhances verbal learning in multiple sclerosis patients with cognitive deficits. Participants who heard single words in form of a song and were asked to sing the list during testing showed significantly better word order memory than participants in the spoken condition.

In brief, these studies support the idea that music may indeed act as a mnemonic device for verbal information in many cases. It certainly needs to be taken into account that variables such as musical training and aptitude (cf. Rainey and Larsen 2002: 184) and characteristics of the carrier melody (cf. Wallace 1994: 1478) may influence retention and even more importantly that this memorization technique may not be equally effective for everybody. Overall, however, it can be concluded that musical stimuli may aid the recall of corresponding texts once they have been learned and repeated a sufficient number of times.

### 3.2.3. Music in language teaching

Music and song are used in a variety of different forms in language teaching. There are complete teaching approaches in which the use of music is one of the main principles, for instance the Contemporary Music Approach (Anton 1990), Suggestopedia (Lozanov 1978) or the less well-known melodic approach (Fonseca Mora 2000). At the same time, songs can also supplement any other teaching method because they can be used to work on specific language areas such as grammar (cf., e.g., Allmayer 2010) or vocabulary (cf., e.g., Abbott 2002: 10; Lems 2001: 4) and allow the training of all four communicative skills (cf., e.g., Murphey 1990a: 166–176; Lems 2001; Ludke 2009; Sağlam et al. 2010: 19–28). Nonetheless, the skills that are associated with music most often are listening and speaking

abilities, in particular pronunciation, because songs evidently consist of oral input and can easily be used as speaking incentives.

The use of songs in language teaching and learning is recommended in numerous articles and teaching publications from the late 1940s onwards (cf. Gravenall 1949) and these also offer a wide range of different reasons for their point of view. First of all, music is all around us in everyday life and students usually know and enjoy English songs (cf., e.g., Murphey 1992c: 7; Domoney and Harris 1993: 235; Mishan 2005: 196). In addition, music strongly appeals to our emotions (cf., e.g., Murphey 1990a: 232; Abbott 2002: 10; Mishan 2005: 204) and can therefore have a relaxing effect (cf., e.g., Murphey 1992c: 8). It can enhance motivation (cf., e.g., Maley 1992: 3; Kuty 1993: 336; Abbott 2002: 10) and contribute to a positive classroom atmosphere (cf., e.g., Lems 2001: 1; Lake 2002; Ludke 2009: 10). With regard to language input songs are authentic materials that can be used as a source of target language structures and provide a meaningful context for practising language skills (cf., e.g., Abbott 2002: 17; Mishan 2005; Ludke 2009: 10). Due to their repetitive structures songs (Murphey 1992b: 771) can further induce involuntary rehearsal and improve automatic access to target language structures (cf. e.g., Murphey 1990b; Schoepp 2001). Indeed, one of the reasons put forward most often is the fact that music can serve as a mnemonic for words and phrases that students need to learn and that it promotes long-term retention (cf., e.g., Gravenall 1949: 124; Maley 1992: 3; Fonseca Mora 2000: 151–152; Abbott 2002: 10; Lowe 2007: 8). Finally, songs can be used to gain insights into different cultures in the sense of intercultural learning (cf., e.g., Gravenall 1949: 124; Lems 2001: 4; Mishan 2005: 197).[18]

In brief, there are many good reasons for the use of music in language teaching. As has been mentioned above, songs can potentially be used to practise and promote nearly every aspect of foreign language learning. However, as Murphey (1992c: 6) points out:

> Songs alone […] will not teach anyone how to *use* a language, no matter how great their memorability, how much fun it is to sing and listen to them, or how 'energizing' the change of pace might be (author's italics).

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[18] This list is by no means exhaustive, but merely summarizes the main points mentioned in the literature. For another overview and further information on positive influences of music and song on language acquisition, readers are referred to Sağlam, Kayaoğlu and Aydınlı (2010).

Consequently, in order to actually enhance language learning, songs need to be exploited. It is vital for teachers to decide what they want their students to learn from or practise with a song and then to carefully choose or design activities that will help learners focus on these aspects.[19]

Judging from the summary in section 3.2.3 and the number of teaching publications and theoretical articles concerned with this issue, music and songs appear to be used by teachers to a certain extent. However, most evidence for the effectiveness of the use of songs in language teaching is still anecdotal and few research projects have actually investigated these claims empirically (cf. Sağlam et al. 2010: 29). Sposet (2008: 91), who carried out a meta-analysis of research on music in language learning, draws the following conclusion:

> The dearth of empirical studies over a period of 70 years, the variances among variables in the 23 studies, and the predominance of non-experimental approaches in the 15 studies reporting positive outcomes makes it difficult for the author to definitely state either positively or negatively the effect of music on second language acquisition.

Hence, most of the studies that have actually been conducted report positive findings, but so far results fall short of being conclusive and there is definitely a need for further research in this area.

It can be concluded from this chapter that music and song do seem to have a rightful place in language teaching and learning because music and language appear to be integrated cognitively, at least partly, (see section 3.1.) and music can have beneficial transfer effects on verbal learning and long-term memory (see sections 3.2.1 and 3.2.2). Thus, music and song should "no longer be regarded as recreational devices having little instructional value" (Medina 1990: 18), but as useful authentic materials which can be exploited to practise almost every aspect of a foreign language.

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[19] Due to the scope of this literature review it is impossible to provide a list of possible activities here, but interested readers can consult a variety of publications providing guidance for song selection and ideas for activities, for instance Murphey (1992c), Ludke (2009), Mishan (2005), Sağlam, Kayaoğlu and Aydınlı (2010), Domoney and Harris (1993), Abbott (2002) or Blell and Kupetz (2010).

# 4. English in out-of-school Contexts

> For the large majority of these [foreign language] learners, there are few opportunities – if any at all - to interact in the target language outside the classroom, for them the classroom remains the only L2 lexical environment available (Donzelli 2007: 104).

While this statement may be right about the fact that foreign language learners hardly ever interact in the target language outside school, it is certainly not true that students only receive language input inside the classroom nowadays. In fact, learners are exposed to a considerable amount of foreign language input in out-of-school contexts, and due to its position as an international lingua franca and the language of globalisation English is especially privileged in this regard. English is the dominant foreign language in Europe and ranks in first place when languages are compared on the basis of everyday use (European Commission 2006: 11, 16).

This chapter provides information about sources of out-of-school English input for teenage EFL learners and reviews studies that have investigated the influence of this additional language input on language acquisition and proficiency. As will be shown, pop music is one of the primary sources of language input among foreign language media. Since it is also the subject of the empirical study presented in this thesis, the last two sections of this chapter focus on pop music. First, an overview of the meanings of the term 'pop music' will be given and subsequently the role of music and songs in teenagers' lives will be explored with special emphasis on the Austrian situation. Finally, aspects of pop songs that facilitate and promote vocabulary acquisition will be discussed.

## 4.1. Sources of English language input outside school

At the beginning of the 21$^{st}$ century, English is frequently used in many areas of everyday life. In Germany English now occurs in many domains apart from education including politics, law, business, science, advertising and the media (Hilgendorf 2007: 135). To the best of my knowledge, there are no data available on the extent to which English is used in Austria but because of the similarities to Germany the situations in the two countries should be comparable.

Research projects have assessed access to different sources of out-of-school English input and the popularity of these among adolescents in several countries, for instance in Germany, the Netherlands, Belgium, France and Finland. The largest study so far has been conducted by Berns, de Bot and Hasebrink (2007) in four

different countries between 1995 and 2002. Over 2200 participants between the ages of 12 and 18 from Germany, France, Belgium and the Netherlands (Berns et al. 2007: 48) participated in this project, in which data on students' family background, contact with English, language attitudes and English proficiency were collected (Berns et al. 2007: 44–45). As the authors already state in the introduction (Berns et al. 2007: 32–33) the countries differ with regard to English media exposure, especially concerning foreign language input via television programmes. While in the larger countries such as Germany[20] and France, and in the Walloon part of Belgium TV programmes are usually dubbed, Dutch and Flemish TV channels offer a substantial amount of programmes in the original language with subtitles. The results of the study show that

> [t]he main opportunities for contact with English are via radio music, CD's and cassettes, TV, the English teacher at school and, to a lesser extent, computers and travelling abroad (Berns et al. 2007: 58).

In the overall results music was found to be the most frequently used source of English language input. Responses in the German sub-sample indicate that radio music and CDs were even ranked slightly higher than average, while, expectedly, TV as a medium of contact with English is rather less important in comparison to the overall results (Berns et al. 2007: 57). Concerning the use of music learners were further asked to specify how many hours a week they listen to music. The figures show that students in all countries spend nearly two hours a day listening to music, but the Germans are on top of the list with an average of 28 hours per week. Additional questions concerned the importance of lyrics and the language of songs and, not surprisingly, these results show that the majority of songs young people listen to are in English. These findings with regard to music lead the authors to the following conclusion:

> The general tendency is that students listen to English songs a lot, and attach some importance to their lyrics. As a source of English input, the quantity of input is considerable (Berns et al. 2007: 59).

In comparison, TV programmes seem to play a lesser role. Figures differ between Germany and France on the one hand and Belgium and the Netherlands on the

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[20] Like in Germany, TV programmes are normally dubbed in Austria (Busch and Peissl 2003: 190), which is one of the reasons why the situation of the two countries can be considered similar with regard to English input outside school.

other, and even those learners who claimed to watch English TV programmes stated that they mostly do so only once a week (Berns et al. 2007: 60–61). Similarly, English contact through radio programmes, the cinema, books and magazines and holidays abroad was found to be less frequent. On the whole, Berns, de Bot and Hasebrink (2007: 112–113) found that English is omnipresent in the lives of European adolescents and that although the relative importance of different media varies between countries, English music media are a common denominator and are frequently used by teenagers in all four countries.

Grau (2009) carried out a survey about English in out-of-school contexts in Germany with over 900 15-year-old students in grade 9 and their teachers as participants. Additionally, focus group interviews were conducted to provide qualitative information and facilitate the interpretation of the results of the questionnaires. Again, music was found to be the most frequent source of English outside school followed by TV, the internet and computer games. The results generally indicate that German teenagers spend a considerable amount of their leisure time in the presence of English through the media mentioned above, whereas their teachers assume them to be exposed to less foreign language input overall (Grau 2009: 165–167). A second questionnaire survey in Germany (Summer 2010) focused specifically on English pop songs. The responses of nearly 400 11- to 16-year-old participants reveal that on average students listen to music for 141 minutes per day. Of these 102 minutes (72%) are spent listening to English songs, which "amounts to almost twelve hours a week – significantly more than the English instruction they receive at school" (Summer 2010: 320).

Another study investigated the goals of Finnish teachers and learners regarding the use of English in and outside school (Ranta 2010). Most of this project's findings are less relevant in the present context, though certainly interesting, but they show that the three out-of-school activities Finnish teenagers use English most for are music (24%), computers and internet (23%) and TV programmes (22%) (Ranta 2010: 162). Kuppens (2010) found similar results for Belgian primary school students. Listening to music emerged as the most popular activity with more than 50% of the children reporting that they listened to English music six to seven times a week and over 90% more than three times a week. In contrast, only 56.5% of the participants watch subtitled TV and 37.1% play English computer games more than three times a week (Kuppens 2010: 73). Finally, Verspoor, de Bot and van Rein (2011) compared four

groups of Dutch students who differed with reference to media exposure[21] and monolingual or bilingual education in a semi-longitudinal study. It was found that the media and non-media groups differed significantly only with regard to exposure to popular media such as television, cinema and music on the radio, CDs or mp3s (Verspoor et al. 2011: 157–158) but this had a crucial influence on their foreign language proficiency as will be shown in the next section.

What has emerged from the review of research findings in this section is that the popular media, and in particular music, are important sources of English input outside school and that European teenagers spend a considerable part of their free time with activities that involve the use of English. As Grau (2009: 164) summarizes succinctly

> [t]he classroom has certainly never been the only possible contact with English but in the light of the increasing presence of English in Europe, there is a new dimension to out-of-school exposure.

## 4.2. Impact of English in out-of-school contexts on language acquisition

So far it has been established that young people in Europe are exposed to a substantial amount of English input in out-of-school contexts. The question that will be discussed in this section is whether and to what extent this informal engagement with English has an impact on students' language proficiency and the teaching and learning of English at school.

In a Europe-wide survey focusing on languages (European Commission 2006: 47) 10% of all Europeans claimed to have used films to learn a foreign language and 9% stated that they listen to the radio or watch TV for language learning purposes. For Austria these figures were lower with 5% and 4% respectively (European Commission 2006: 108–110), but the findings still show that quite a large number of people use foreign language media to enhance their personal language skills. Using self-assessment scales and a vocabulary test Berns, de Bot and Hasebrink (2007) also gathered data on participants' English proficiency in their study. However, they argue that it is unfeasible to investigate the effects of a single medium in terms of direct causal relationships and thus analysed how different media environments influence and shape learning (Berns et al. 2007: 89). Their findings "clearly

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[21] The participants in the two non-media groups belong to Dutch Reformed groups, which limit exposure to TV, radio and the internet because of religious reasons. These students are therefore exposed to very little English outside school (Verspoor et al. 2011: 151) and can act as a genuine control group.

demonstrate that young people selectively choose the media which then build their media environments" (Berns et al. 2007: 109) and indicate that the impact on language learning varies accordingly, although no direct conclusion can be drawn due to the design of the study. Even more relevant to the present study are the results of a more specific analysis focusing on the influence of music and lyrics. This analysis was carried out because a piloting study in Germany had "indicated a correlation between attitudes to song lyrics and specific kinds of language proficiency" (Berns et al. 2007: 102). Four groups with different attitudes towards song texts were identified: group 1 ('all lyrics are (rather) important') was the largest group, group 2 ('only English lyrics are (rather) important') was the smallest, and group 3 ('only national lyrics are (rather) important') and group 4 ('all lyrics are (rather) unimportant') ranked on place two and three. The fact that with 37.5% group 1 is the largest subgroup within the total sample implies that many adolescents attribute at least some importance to song lyrics. Further analysis of the German and Dutch samples showed that the English skills of groups 1 and 2 "are clearly better than average in both countries" (Berns et al. 2007: 109). Hence, the results of this large-scale study indicate that teenagers' English proficiency is influenced by different media environments and that the attitude towards the lyrics of English songs is relevant as well.

A research project by Kuppens (2010) on the long-term effects of media exposure on English skills of primary school students in Flanders (see section 2.3.4.) also ascertained a significant impact of popular media. However, in contrast to the results of Berns, de Bot and Hasebrink music was not found to be influential, but exposure to subtitled television programmes as well as computer games emerged as important predictors of English proficiency in general linear modelling (Kuppens 2010: 74–77). Verspoor, de Bot and van Rein (2011) investigated the difference between media and non-media groups in monolingual and bilingual education in the Netherlands. Their study showed that in general students in the bilingual groups outperform their peers in writing tests and lexical tests,[22] but a clear impact of media exposure in out-of-school contexts was also found. The effects of exposure to popular media

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[22] This result could be due to the admission criteria for Dutch students to bilingual education. Commonly only students with high scores on an exam taken at the end of primary school are allowed to attend bilingual schools (Verspoor et al. 2011: 149).

changed over time and it appears that productive writing skills benefited earlier from it than receptive vocabulary skills (Verspoor et al. 2011: 162). In the non-media groups the lack of additional out-of-school input especially influenced students' motivation and attitude towards English, but also their developing language skills. The authors thus conclude that "out of school contact with English is crucial for the development of proficiency" (Verspoor et al. 2011: 165).

These three studies provide positive evidence for the beneficial effects of out-of-class English language input through popular media. It may thus be surprising that many teachers do not recognize the importance of these sources of additional language input. In two separate studies in Germany and Finland Grau (2009: 171) and Ranta (2010: 175) found that there is an apparent division between 'school English' and 'real-world English' in the minds of both teachers and learners. Further results by Grau (2009: 168–169) indicate that in general English teaching at school is not influenced notably by out-of-school English input, although 29.8% of students stated that they frequently use words and phrases they learned from music, movies or the internet in class, and 22.9% claimed to frequently ask their teachers about the meaning of unknown words they encountered outside school. Grau (2009: 171) thus concludes that

> many teachers do not seem to take their students' free-time involvement with English language texts seriously, neither as a potential context for learning English nor as a relevant activity they could contribute to by providing students with listening and viewing strategies in class.

Similarly, Verspoor, de Bot and van Rein (2011: 165) also argue for a greater role of out-of-school language input in English teaching at school:

> In English teaching more use could be made of that type of contact: relevant input from movies or video clips could be used for exercises in the classroom. Now it seems that the classroom and the world outside are kept strictly separate.

In summary, the few studies that have investigated the effects of English out-of-school input on learners' language proficiency so far have all found positive effects. As a consequence, experts agree that teachers need to become more aware of this additional exposure to the foreign language outside school and should take it into account in their teaching because at the moment 'real-world English' and 'school English' seem to belong to separate spheres in students' lives.

## 4.3. The role of pop music

In nearly all of the studies mentioned in the previous sections, music was found to be the most frequently used medium for contact with English outside school. Furthermore, the findings by Berns, de Bot and Hasebrink (2007) imply that English songs and their lyrics might be a particularly good source of language learning. Pop music is often identified as the type of music that teenagers commonly listen to and the term is generally used in this sense within the context of this research project. It is, however, surprisingly difficult to define what pop music actually is because the term has been used with various, often derogatory, meanings.

The term 'popular music' was first used in the 18th century to describe songs that were similar to folk music but were not part of the traditional repertoire. Already at the close of the same century it gained a new meaning owing to the introduction of lithography, which linked popularity to sales figures for the first time. However, at the time popular music was not considered to be of minor value; this connotation was only added in the 20th century when the music practice of the previous centuries was retrospectively divided into 'art music' or 'serious music' and 'popular music' or 'music for entertainment'[23] (cf. Wicke 1997: 1694–1695). The further development of popular music was closely connected to technological progress and the spread of entertainment media like the gramophone, cinema, radio and television. It was also linked to the emergence of commercial music production and by World War II popular music from Anglo-American cultures was disseminated also in Europe (Gammond and Gloag n.d.: section 1-3). From the 1950s onwards the term 'pop music' was used to refer to "a particular group of popular music styles" (Middleton et al. n.d.: section 1) similar to the terms 'pop art' and 'pop culture'. Its coverage overlapped partly with that of 'rock and roll' (Middleton et al. n.d.: section 1), but in the late 1960s and early 1970s a division was created between rock music on the one hand and pop music on the other. 'Rock' was then used to denote a more authentic and artful style, while 'pop' was considered to be commercial with the sole purpose of entertainment (cf. Middleton et al. n.d.: section 1; Gammond and Gloag n.d.: section 4). From the 1970s onwards "[p]opular music has undergone increasing fragmentation and

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[23] This division is still common today and often referred to by the German terms ‚ernste Musik' (E-Musik) und 'Unterhaltungsmusik' (U-Musik).

diversification, a process symptomatic of wider social and cultural trends" (Gammond and Gloag n.d.: section 4) and nowadays many different styles of pop music coexist.

It is difficult to determine the boundaries of the term pop music and of the wider notion of popular music, which is why they have been used with varying meanings. Middleton and Manuel (n.d.: section 1) identify three different tendencies to define popular music: firstly, popularity can be linked to the scale of activity, which is usually measured in terms of sales figures; secondly, popularity can be associated with means of dissemination and thus with the mass media; and thirdly, popularity can be connected to social group, for instance to the working class or to young people. Therefore, the term popular music does not denote one stable meaning, but is itself a discursive instrument of cultural engagement and conflict on the territory of commercial music production. Since parameters in this field are continually changing, the meaning and form of popular music are the subject of constant change as well (Wicke 1997: 1695).

> For most popular music scholars, it is better to accept the fluidity that seems indelibly to mark our understandings of the 'popular'. From this perspective popular music has no permanent musical characteristics or social connections; rather, the term refers to a socio-musical space always in some sense subaltern, but with contents that are contested and subject to historical mutation (Middleton and Manuel n.d.: section 1).

In summary, 'pop music' as we know it today began to emerge in the middle of the last century, but because of the ever changing nature of the music business and the vagueness of the term's boundaries, pop music has been defined in many different ways. It can either be defined broadly in contrast to classical music (cf. Kennedy n.d.: 'pop') or more narrowly in opposition to rock music (cf. Middleton et al. n.d.). In both senses the term pop music often takes on a negative connotation of commercial music with minor value. However, pop music is not always considered to be an inferior art form and Jaedtke (2000) even goes so far as to suggest that pop music is the dominant musical style of the 20th century similar to Baroque music in the 17th and 18th centuries or Romantic music in the 19th century. He claims that pop music is the major musical style of the present (cf. Kleinen 2008: 41) and attempts to show its overarching stylistic unity by analysing various aspects such as rhythm, melody, harmony and composing principles (Jaedtke 2000: 206–213).

While this musicological approach certainly produces highly interesting results and may contribute to a more positive appraisal of pop music, for the current project

those aspects of pop music that are connected to its wide distribution and consumption are of greater importance. Nowadays pop music is typically associated with youth, change and modernity as well as entertainment and leisure as Middleton et al. (n.d.: section 1) summarize:

> On the whole pop music is a leisure product or practice taking commodity forms. […] Its typical context is a society, urban and secular in sensibility, which is changing quickly in structure, where wealth is growing (and especially is spreading into previously less-favoured parts of the social hierarchy), and where information and culture are increasingly mass-mediated. The forms, themes and pleasures of most pop, then, are marked both by the effects of 'consumerism' and by the tensions resulting from a tilt in the structure of social feeling towards 'youth', 'change' and 'modernity'.

In the empirical study presented in this thesis pop music will be operationalized as music in the charts, which closely corresponds to the first tendency to define popular music identified by Middleton and Manuel (n.d.: section 1, see above). Such a definition further implies that pop music is disseminated by the mass media and associated with the social group of teenagers, and thus also includes the second and third tendency proposed by these authors as well as the characteristics indicated in the quotation above.

Having now established what the term pop music can denote in general and what it will refer to in the context of this study, it is worth considering why music and especially pop music actually play such a big role in adolescents' lives. Unfortunately, the figures concerning the consumption of English music presented in the previous sections were from other countries because no data on access to English media could be found for Austria. What is however available are figures regarding general music consumption among Austrian teenagers, and since TV programmes and films are usually dubbed, it would only seem logical that music is one of the most important sources of out-of-school input because most pop songs are in English today (see also the subsidiary analysis of the Austrian charts in section 6.1.).

Data from the Austrian public broadcasting service ORF (2008: 2, 9) indicate that in 2008 98% of the 12- to 19-year-old Austrians had access to a CD-Player, 69% to a hi-fi system and 79% owned an iPod or an mp3 player. In addition, the figures show that 10- to 19-year-olds listened to the radio for 104 minutes a day on average. These figures can be supplemented by older data from the ORF, which show that 52% of the Austrian youth between the ages of 14 and 24 believe music to be a very important part of their lives and another 34% consider it as important. Listening to

music emerged as the most prominent leisure activity with 53% stating that they do so very often. Furthermore, pop/rock music ranks on place 2 of the top 10 interests of 12- to 19-year-olds after cinema and films (ORF Markt- und Medienforschung 2005: 4, 6, 7). Similarly, a survey conducted among 6- to 14-year-old children for the Austria telephone company A1 shows that these younger children spend most of their free time with friends or doing homework, but listening to music is the third most popular activity for 39% of the children (Grayling 2010: 1). Finally, a survey on media use among 11- to 18-year-olds was conducted recently in the region of Upper Austria, which is where this empirical study will also be carried out. Results show that listening to the radio and mp3s are rather popular leisure activities with nearly 40% claiming that they do so almost every day (Pfarrhofer 2011b: 5). Moreover, similar to the data from the ORF, music is the second most frequent interest of Upper Austrian adolescents with 52% stating that they are very interested in it. Figures concerning media possession show that most young people have access to radios (91%), CD players (87%) and iPods or mp3 player (72%) and the majority (over 60% for each gadget) possess these items themselves (Pfarrhofer 2011b: 8, 9, 12). One last surprising finding of this survey was that 84% claimed to use the internet to access the online platform YouTube, which makes it the most popular site among Upper Austrian adolescents (Pfarrhofer 2011b: 49).

On the whole, these figures indicate that music takes an important place in the life of young Austrians and show furthermore that the preferences and habits of Austrian adolescents are comparable to those of young people in the neighbouring countries of Germany and Switzerland. When comparing the data on media use among teenagers in Austria with the results of the JIM (Behrens and Rathgeb 2011) and JAMES studies (Willemse et al. 2010) for Germany and Switzerland many similarities were found, which implies that most probably research findings from the German context can be generalized to the Austrian situation as well.

Music consumption is however not limited to the younger generation; due to its frequent presence in shops, restaurants, bars and other public places everyone of us is exposed to a great deal of music on a daily basis (cf. Schramm and Kopiez 2008: 254; Sloboda 2010: 497). Even if music is not self-chosen, its omnipresence in the public sphere makes it difficult to spend a day without listening to it. Still, music seems to take on an especially important role for adolescents and music psychologists have proposed two main reasons for this.

One aspect that has emerged as central among the manifold motives for music listening in empirical research is the evocation of emotions and mood management (Schramm and Kopiez 2008: 256). Music can help to enhance a current emotion, to create a more cheerful mood, to release negative emotions or simply to relax. According to meta-analyses conducted by Sloboda et al. self-chosen music fulfils four main functions: it can be used for distraction, energizing, entrainment and meaning enhancement (Sloboda 2010: 508–509). Distraction of course refers to ways of mentally escaping a situation or reducing boredom, and energizing is related to arousal, motivation and maintaining attention. Entrainment is connected to music at the workplace, which helps to carry out a task effectively, and in meaning enhancement music is used to add to an activity's or a moment's significance, for instance when using music to evoke memories and remember important past events. The primary purpose of most everyday music, which refers to music that is commonly listened to as a background or in public spaces, is not to invoke emotions because it is usually secondary to other tasks that are being carried out while listening to it. However, when music is used for mood management, it is more directly related to feelings and emotions (cf. Sloboda 2010: 509). When discussing the role of emotions in relation to everyday music, Sloboda (2010: 495) states that these tend to be of rather low intensity with music bringing about small mood changes rather than radical shifts. In addition he points out that everyday emotion to music is usually self-referring and "reflects and is influenced by the personal emotional meaning of the non-musical context" (Sloboda 2010: 501). This statement seems to refer to the fact that one piece of music can obviously take on different meanings for different listeners and in different situations, but it also appears to suggest that listeners can read different things into a piece of music according to their personal experience and current situation. This use of music seems to be especially common among adolescents, who either use a specific piece of music to evoke emotions or associate special meaning to music that they hear in an everyday context. Schramm and Kopiez (2008: 257–258) also appear to refer to this emotional and associative use of music in the following comment:

> So wird etwa besonders emotional geladene Musik gehört, um musikimmanente (und vielleicht auch textimmanente) Gefühle mit zu erleben, um sich für den Zeitraum der Rezeption auf eine Art der Gefühlsreise einzulassen oder um Gefühle auszuleben und zeigen zu dürfen, die einem im Alltag teilweise oder ganz verwehrt bleiben. Insbesondere Jugendliche haben hierzu eine große Neigung.

The authors again emphasize the importance of this kind of music consumption for teenagers and thus it can be concluded that the arousal of emotions and mood management is an important function of music for young people, which potentially contributes to its central position in their lives.

A second function of music in adolescence is connected to the fact that this period involves major changes such as puberty, the gradual initiation into adult life and the formation of an independent social identity. Cross (2012: 319) identifies two universal tendencies of music use across several cultures:

> Music is generally interwoven into other aspects of daily life, and music tends to be employed to manage situations involving change or transition in the states of individuals and in their roles and significances within a society.

The transition from childhood to adulthood in adolescence would seem to qualify as a situation involving the second aspect identified by Cross even within modern Western societies. Teenagers undergo many changes during this period with regard to physical, social and emotional aspects. For instance, they have to find a social identity, take decisions concerning education and future careers, and slowly start to dissociate themselves from their parents. From the age of ten or eleven onwards adolescents generally begin to orientate themselves more towards their peer group and away from their parents and family. This new orientation is also reflected in their musical preferences, which are strongly influenced by the tastes of the peer group in combination with media trends (Kleinen 2008: 44–46). In addition, young people do not usually listen to the same music as their parents and thus musical expertise is found rather among peers than among adult authorities, which again contributes to the formation of independent identities (cf. Münch 2008: 271). Hargreaves, North and Tarrant (2006: 147–148) report findings from studies which show that musical taste is influenced decisively by the norms of the peer group and that social identity theory can be used to predict musical behaviour of teenagers. Not only did adolescents associate their own peer group with positively connotated music, but statements about musical behaviour were used more often to distinguish group insiders from outsiders than comments about other media activities or sports. Interestingly, further research showed that sensitivity to group norm violations only develops in later childhood at roughly the same time at which sensitivity to differences in musical style declines.

This 'dip in open-earedness'

> seems to occur at around the age of 10 or 11 years, and this typically shows itself in very strongly expressed preferences for a narrow range of pop styles, and strong dislike for all other styles (Hargreaves et al. 2006: 144).

The authors suggest that there might be a connection between the two phenomena and that increasing sensitivity to norm violations may account for the corresponding decrease in openness to different musical styles and open-earedness (Hargreaves et al. 2006: 149). Furthermore, research from experimental aesthetics indicates that the teenage years appear to constitute a critical period in the evolution of musical taste, which "might explain why many aspects of our musical preferences remain consistent throughout our lives" (Hargreaves et al. 2006: 142). Taking all these findings together, it seems that musical taste plays a crucial role in the formation of social identity and for access to peer groups and therefore this factor can be regarded as a second important function of music in adolescence. Hargreaves, North and Tarrant (2006: 149) also conclude that

> it seems possible that the expression of preference for 'appropriate' music might be one means by which young people can strategically ensure acceptance by their group […].

In addition, teenage musical preferences may stabilize in the course of a critical period and subsequently influence music perception for the rest of our lives.

In brief, two major reasons can be found for the importance of music in teenagers' lives. Firstly, it serves as a means for mood management and self-expression and secondly, music is especially important for the dissociation from parents and other adult authorities, the formation of an independent social identity, and peer group membership. Adolescence can certainly be regarded as a period of transition and change and music always "has a central role in the management of situations of social uncertainty, situations where outcomes are unclear, on the edge" (Cross 2012: 319).

In summary, this section has tried to define what pop music actually is by giving a broad historical overview and has then summarized available data on music consumption in Austria. Since no figures on the amount of English out-of-school input could be found, the data on music use also serve to demonstrate that the situation in Austria is comparable to Germany, where several research projects on out-of-school input and its consequences for foreign language learning have been conducted (see sections 4.1. and 4.2.). Finally, an attempt has been made to explain the immense

significance of music for adolescents and two main reasons have been proposed: the importance of music for mood management and social identity formation.

## 4.4.  Pop songs as a source for vocabulary acquisition

In this last section the usefulness of pop songs as a source of vocabulary acquisition will be analysed and assessed. The previous sections have revealed that teenagers are exposed to a considerable amount of English pop songs, but the question of why pop songs can promote lexical learning has not been answered yet.

The most comprehensive analysis of English pop song lyrics to date was carried out by Murphey (1990a) in 1987. Although his results were thus obtained over 20 years ago, they are still highly relevant, especially because no comparable analytical effort has been made since. Concerning the structure of songs Murphey found that pop songs are extremely repetitive and usually contain short, simple phrases (Murphey 1990a: 231–232). This feature has also been highlighted by other experts because frequent repetitions lead to better retention of words (cf., e.g. Milton 2008: 227, Allmayer 2010: 296). Allmayer (2008) examined the potential of songs for grammar teaching with special regard to cognitive and psychological aspects, but the same characteristics can also be helpful for vocabulary learning. She found that the phrase structure of strophic songs enhances long-term retention particularly well because of the repetition of short self-contained musical phrases and the use of pauses in the form of instrumental bridges, which allow for the implicit processing of the previously heard textual information (Allmayer 2008: 101–104 & 2010: 296–297). In addition, Allmayer argues that the multiple coding of information[24] in songs acts as another facilitative factor (Allmayer 2008: 105); a fact that has also been confirmed by Schön et al. (2008: 981–982), who found that the consistent mapping of musical and linguistic information may promote text segmentation and processing (see section 3.2.1.). The combination of music and language, which is one of the defining features of song (cf. Besson and Friederici 2005: 58; Jackendoff 2009: 198) apart from vocal rendition (cf. Chew et al. n.d.), may moreover facilitate long-term retention as has been discussed in section 3.2.2.. One last aspect which helps to firmly embed song

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[24] Allmayer argues that is crucial for students to read song lyrics in addition to hearing them to enhance multiple coding. However, as different studies show (see section 3.2.1.) the presentation of information in both textual and musical form can already promote textual processing.

texts in memory is the fact that songs are not only repetitive in themselves, they are usually also heard more than once (cf., e.g. Milton 2009: 327). Particularly if a song is popular and is played in supermarkets, restaurants and bars, the words are heard again and again, which helps to commit them to long-term memory.

Regarding the language of songs Murphey's (1990a: 231–233) analysis revealed that pop songs use relatively simple language and a conversational style of discourse. He found that pop songs include many personal references, but these do not commonly have a fixed referent. The discourse of pop songs can therefore be regarded as very vague with no fixed references to time, place or roles, and Murphey (1990a: 233) concludes that this allows "listeners to use song to associatively soundtrack their own lives." Song recipients can fill open references with details from their own lives and thus attribute special meanings to songs. This function of songs can be considered as one example of how extra-musical context influences music reception and its emotional impact, as was discussed in the previous section with regard to the use of music as a means of emotional self-expression among teenagers. Finally, both Murphey (1990a: 233) and Allmayer (2010: 297) emphasize the role of affect in language learning, which is inspired by pop songs through both musical and linguistic features. The affective nature of pop songs can contribute to students' motivation for language learning, as was also stated in section 3.2.3.

In brief, pop songs may promote vocabulary acquisition because they are short texts that contain simple conversational language. In addition, their repetitive nature and the combination of music and language in self-contained phrases can enhance long-term retention, which often results in the well-known catchy tune phenomenon. Lastly, aspects of content such as the possibility of self-identification and affective involvement may be two of the reasons why adolescents frequently and voluntarily engage with pop songs, and hence promote lexical learning indirectly through an increase of listening repetitions.

In conclusion, this chapter on English input in out-of-school contexts has established several crucial points for the empirical study presented in this thesis. It has been demonstrated that young Europeans are exposed to considerable quantities of English input outside school and that this additional input can have positive effects on their language proficiency. In addition, music was found to play an especially important role as a source of English input because it is the medium most frequently

used by adolescents in several countries. This fact could also be established for Austria, which leads to the conclusion that research findings on out-of-school input, particularly from Germany, can most likely also be applied to the Austrian situation. Subsequently, pop music has been defined, which is necessary for its operationalization in the present study, and reasons for the significance of music in teenagers' lives have been proposed. Finally, aspects of pop songs that may promote vocabulary acquisition have briefly been summarized.

# 5. Methodology

As described in chapter 1, the purpose of the empirical study presented in this thesis is to ascertain whether Austrian EFL learners of intermediate proficiency acquire passive vocabulary knowledge incidentally by listening to English pop songs outside school. Finding appropriate methods and devising a suitable research design for a previously under-researched field certainly presents a challenge for a relatively young researcher with little practical experience. Still, with the help of advice found in the extensive literature on research methodology and the constructive comments of my supervisor, I was able to develop a method to investigate the complex phenomenon of incidental vocabulary acquisition in out-of-school contexts. This chapter presents the research design of the study, which combines methods from several fields such as SLA, language testing, psycholinguistics, corpus linguistics and interdisciplinary research on music and language, and offers a rationale for the decisions taken.

## 5.1. Research design

The present study uses a mixed methods research approach and combines an experiment, a survey and a lexical analysis. According to Dörnyei (2007) the mixed methods approach has been increasingly regarded as a third approach in research methodology since the 1990s. As Cohen et al. (2011a: 22) put it succinctly "[m]ixed methods research recognizes, and works with, the fact that the world is not exclusively quantitative or qualitative" and thus, its defining feature is the combination of both quantitative and qualitative approaches in a single research project (cf. Dörnyei 2007: 44). However, the ways in which quantitative and qualitative methods are mixed are variable. Following Teddlie and Tashakkori (2006 qtd in. Cohen et al. 2011a: 25), Cohen et al. summarize several different possibilities to combine methods, such as 'parallel mixed designs' and 'sequential mixed designs', for instance. This research project followed a 'parallel mixed design', in which "both quantitative and qualitative approaches run simultaneously but independently in addressing research questions" (Cohen et al. 2011a: 25).

The main advantage of the mixed methods approach lies in its potential to utilize the strengths of one method to overcome the weaknesses of the other (Dörnyei 2007: 45). For instance, mixing methods allows predominantly quantitative research projects to receive greater depth by incorporating qualitative data and thus renders a

more subtle analysis possible. In the case of this study, both quantitative and qualitative methods were used at all stages of analysis. For example, data gathered with the help of vocabulary tests were scored and examined quantitatively by using statistical techniques, but they were also evaluated qualitatively by analysing errors and productive examples.

The main component of this study is a quasi-experiment with a pre-test–post-test repeated measures design with one within-subjects factor (vocabulary knowledge), which was devised to investigate hypotheses 2, 3 and 4 (see section 1.2.). Quasi-experiments are similar to true experiments except for the fact that they lack control over group assignment processes and hence do not use randomization (Cohen et al. 2011a: 322). Randomization is, however, a key feature of true experimental designs because it allows minimizing the confounding effects of extraneous variables (Cohen et al. 2011a: 313). Even so, true experimental designs are often impracticable in educational research and "[b]ecause of practical constraints, working with 'non-equivalent groups' has become an accepted research methodology in field studies where randomization is impossible or impractical" (Dörnyei 2007: 117). Practical limitations are also the reason for the use of a quasi-experimental design in this research project. Since the study was carried out in schools, it was not feasible to randomly assign participants to experimental groups, but students were tested in their intact classes. Of course, in projects with non-equivalent groups, initial group differences need to be taken into account in the analysis to ensure the validity of interpretations based on the data (Dörnyei 2007: 117).

However, the quasi-experimental design employed in this study possesses further unusual features due to the nature of the phenomenon under investigation. First, there is no experimental treatment phase in the traditional sense because the study is concerned with the incidental acquisition of vocabulary in out-of-school contexts, and thus the learning phase had to take place outside school prior to the experiment. This is reflected in the main research question (see section 1.2.), which asks whether incidental acquisition actually occurs outside school. The intervention in the actual experiment only attempts to trigger the potential results of previous incidental learning to ascertain whether acquisition took place in out-of-school contexts. To activate any potentially acquired knowledge of lexical items during the post-test phase, mental priming with musical stimuli is used.

'Priming' refers to facilitated mental processing of a stimulus because of the nature of the stimulus preceding it. Peretz et al. (2004: 143) state that "[p]riming is generally defined as a modification in performance due to the prior processing of an item that is related to the target". This means that the processing of one stimulus, the prime, affects the subsequent processing of a related second stimulus, the target, in either a positive or negative way. Usually, "[f]acilitation is said to occur when response times to a target item are faster after an experimental prime than after an unrelated control prime" (Hasson and Giora 2007: 303) and inhibition is said to occur if the reverse is true. The priming paradigm has been used extensively in psychological and psycholinguistic research since the 1970s to elicit many different effects. For instance, there are studies on orthographic, phonological, semantic or syntactic priming effects, and with regard to the direction between prime and target, priming has been shown to work both forwards and backwards (Balota 1994: 334–347).

Historically, the semantic priming paradigm, which investigates semantic associations between individual words, has been the most well researched area of priming (Balota 1994: 337). Hence, it is not surprising that this paradigm has also been transferred to other fields of research, most importantly to the study of language and music (see chapter 3). A study by Koelsch et al. (2004) examined the semantic priming effects of music and sentences on words using electroencephalography and found that music can evoke semantic meaning just like language.[25] These results led Koelsch et al. (2008: 108) to the following conclusion:

> Insgesamt belegen die Ergebnisse, dass Musik Repräsentationen bedeutungsvoller Konzepte aktivieren kann und Musik einen systematischen Einfluss auf die semantische Verarbeitung von Wörtern haben kann.

A second important study by Peretz et al. (2004) investigated the relation between melody and lyrics in song memory using a priming methodology. Their findings indicate that both tune and text can prime the respective other component of a song in both forward and backward direction. Overall, however, the text was recognized more quickly than the melody and songs beginnings were easier to identify than later parts (Peretz et al. 2004: 150–152).

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[25] For a further discussion of the studies mentioned in this section, see section 3.1.

Both of these experimental studies indicate that musical primes can be used to activate linguistic target items and this musical priming effect is also exploited in the present study. To trigger incidentally acquired word knowledge during the post-test phase, musical stimuli from the pop songs in which the target words occur are used as primes. The musical primes are supposed to facilitate the retrieval of the semantic meaning of lexical target items because both were heard together many times and are therefore at least partially integrated in memory (see section 3.1.). Additionally, music has been shown to aid recall of textual information in several previous research projects (see section 3.2.2.). Unlike the studies mentioned above, the musical primes used in the present study consist of both melody and lyrics, but care has been taken to ensure that the target words are never part of the prime.

In summary, the first uncommon aspect of this quasi-experimental design is that there is no traditional treatment phase because in this research context exposure to lexical target items has to occur outside school per definition. During the quasi-experiment recall of previously acquired word knowledge is tested without any intervention (pre-test) and using a priming technique with musical stimuli (post-test), which are assumed to facilitate the retrieval of the knowledge acquired outside school.

The second unusual feature of this quasi-experimental design is that no control group is used. Again, this is due to practical constraints and to the nature of the phenomenon under investigation because it is virtually impossible to find a comparable group of participants who does not have access to English pop songs outside school and could therefore have acted as a control group. As a result, the treatment phase cannot be omitted and the possibility of a control group has to be excluded. Of course, these two unusual factors lead to certain limitations: because of the lack of a control group no direct comparison can be made between participants who received the treatment and participants who did not and because of the lack of randomization a variety of independent variables cannot be controlled for. However, these limitations are due to the nature of the research question and the authentic research context, which cannot be changed.

To supplement the data on vocabulary acquisition collected in the quasi-experiment, a survey and a lexical analysis are incorporated in the research design. The survey is used to gather background data on the participants and their consumption of English

pop music to investigate hypotheses 1 and 5. Both the survey and the quasi-experiment are conducted at the same time, while the lexical analysis was carried out beforehand during the materials development phase. Data from the lexical analysis of English pop songs lyrics are not only used to devise a vocabulary test for the quasi-experiment, but also to explore hypothesis 5.

In summary, the present study combines a quasi-experiment using a repeated-measures design with no control group with a survey and a lexical analysis of song texts in a mixed methods approach. As a result, both the quantitative testing of research hypotheses 2, 3 and 4 and the more exploratory investigation of hypothesis 5 are rendered possible and allow detailed conclusions to be drawn.

## 5.2. Participants

76 Austrian students from four classes in two different school types in Upper Austria participated in this research project. The study comprised two classes in each school, a 'Hauptschule' (HS, secondary modern school) and a 'Gymnasium' (AHS, grammar school), to provide for comparable results (N HS=36, N AHS=40). All participants attended the eighth grade and were about to finish lower secondary school at the end of the school year.

Since the booklets of two students had to be excluded from data analysis due to wilful distortion of results during the scoring procedure (see section 5.5.), a total number of 74 participants was left. The ages of the 36 males and 38 females ranged from 13 to 15 years, as could be expected at this grade level. The large majority (82.4%) gave German or Austrian German as their native language, while the L1s of the remaining students (17.6%) were very diverse, with the largest group being Bosnian (9.5%) and others speaking Albanian, Armenian, Croatian, Thai or Turkish. There were no native speakers of English and all students with L1s other than German except one attended the Hauptschule. Interestingly, only one student named a second native language (Greek) in addition to German, whereas all other students with different L1s classified German as a foreign language.[26] Regarding foreign languages most students gave English as their L2 (63.5 %) and nearly all of them

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[26] This is an intriguing result on its own because it raises questions about the language attitudes of these students towards German, but since this issue does not constitute a focus of this thesis, it cannot be discussed here.

mentioned English as being one of their foreign languages (86.5%). Astonishingly, 10 out of the 74 participants did not refer to English at all, although each of them must have received English lessons for several years. Other foreign languages mentioned frequently were French (50.1%), which is taught as a compulsory subject at the AHS, and German (23%).[27] In addition, Czech, Croatian, Italian, Kurdish, Romanian, Russian, Serbian and Spanish were listed as further foreign languages. Most students had not stayed in English-speaking countries before (67.1%) and a cross tabulation showed that the majority of those who had, attended the AHS (83.3%, N=24).

At the time of the experiment, the students had been taught English for seven and a half years since the subject has been compulsory from the first grade of primary school onwards since 1998/99 (cf. Dalton-Puffer et al. 2011: 183). This means that the students received a minimum of 660 hours of instruction (cf. BMUKK 2005, 2000c, 2000b), if they began their formal education in an Austrian school. In the Austrian curricula for Hauptschule and AHS Unterstufe (BMUKK 2008, 2000a) the teaching and learning aims for foreign languages are described with reference to levels of competence as defined in the *Common European Framework of Reference* (Council of Europe 2001). After the fourth year of instruction in lower secondary school, learners should have reached level A2 for all four communicative skills and specific competences of level B1 in writing, reading and listening. The English proficiency level of the students can therefore be assumed to be intermediate.

The choice of experimental classes and issues of sampling were influenced strongly be legal and practical considerations. In order to gain access to schools at the level of compulsory education and to conduct research with minors in Upper Austria, a number of legal requirements have to be fulfilled. Firstly, the local educational authorities have to approve of the study and the headmasters have to grant the researcher access to their schools. Secondly, the parents of the students have to be informed prior to the experiment and must have the possibility to withdraw their child from the research project. Thirdly, the students need to be guaranteed anonymity,

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[27] The percentage of speakers of German as a foreign language is higher than the percentage of students with an L1 other than German because some students named 'Austrian German' or 'Austrian dialect' as their L1 and '(Standard) German' as a foreign language.

confidentiality and voluntary participation. In addition to these legal requirements, practical limitations had to be considered as well. Teachers who are willing to provide time for the experiment during their lesson had to be found and as the project is part of a diploma thesis, overall time constraints were also of relevance.

As a consequence, a compromise between theoretical sampling considerations and practical possibilities of access and time had to be found. In the end a mixture of cluster and convenience sampling was the best available option. Cluster sampling is used when the population is widely dispersed and a random sample cannot be drawn for administrative reasons. Hence, a number of schools are chosen and all the individuals in these are tested. In contrast, convenience sampling refers to sampling by opportunity, in which available individuals are selected as participants. This strategy entails problems of generalizability, which need to be taken into account in the data analysis (Cohen et al. 2011a: 154–156). In practice, the two sampling strategies were combined as I approached teachers in two schools that were assumed to form complementary clusters and then tested those classes that were available to me. Four classes were presumed to be a good sample size because again this allowed testing an equal number of students in both schools.

Legal requirements were fulfilled with the help of a letter to the parents distributed at school and the use of a test booklet, which allowed collecting all the necessary data without having to identify the participants with codes or names. Additionally, care is taken to ensure the anonymity of participants also in this thesis, which is the reason why classes will be identified by the abbreviations HS a/b and AHS a/b. These were assigned randomly and do not correspond to actual designations. Furthermore, students in the experimental classes were assured that the data collected in the experiment could have no influence on their English grades and that they would be handled confidentially and only be used for this thesis project. Since these measures adequately fulfil the legal requirements, access was kindly granted by the two headmasters and the project proposal was approved favourably by the educational authorities.

## 5.3. Materials

The materials that were used in this research project consist of two parts: a vocabulary test for the pre- and post-test of the experiment and a questionnaire for the survey. All materials were especially designed for this study; therefore, this section will provide information on the development process and the reasoning behind it.

In order to investigate whether incidental vocabulary acquisition from pop songs in out-of-school contexts actually occurs, an experimental procedure with repeated measures was chosen (see section 5.1.). Hence, one of the major methodological issues in this study was the design of a test of passive vocabulary knowledge to be used as pre- and post-test. Several important decisions on test format and target words had to be taken during the development process. As pointed out by Read (2000: 151–153), research is one of the main three purposes of vocabulary test design, but as for any other purpose, numerous issues such as the definition of a 'word' and of 'vocabulary knowledge' have to be considered. Furthermore, Read draws attention to the fact that passive vocabulary tests often do not distinguish between recognition and recall, although understanding a word's meaning from context and recalling a word's meaning from memory are quite different in terms of test construct definition (Read 2000: 154–156).

The vocabulary test to be used in this study was required to test passive vocabulary knowledge (see research question 1), or more specifically the recall of word meanings from memory with the help of musical stimuli. At first, an English-German translation test was considered to be the best solution. However, the problem with a translation test is that it only allows for correct, partially correct or incorrect answers; no difference can be made between words that students never heard before and words that they have come across, but the meaning of which they do not know. As a result, a different test format was selected after careful consideration: the Vocabulary Knowledge Scale by Paribakht and Wesche (1997).

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Self-report
categories

I          I don't remember having seen this word
           before.

II         I have seen this word before, but I don't
           know what it means.

III        I have seen this word before, and I think
           it means _____ . (synonym or
           translation)

IV         I know this word. It means _____ .
           (synonym or translation)

V          I can use this word in a sentence: _____ .
           (Write a sentence.)
           (If you do this section, please also do
           Section IV.)
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**Figure 1: Original Vocabulary Knowledge Scale (Paribakht and Wesche 1997: 180)**

The Vocabulary Knowledge Scale (VKS) was originally developed in 1993 for research on incidental vocabulary acquisition from reading with the purpose of "distinguish[ing] stages in learner's developing knowledge of particular words" (Paribakht and Wesche 1997: 179). It presents learners with five categories and asks them to rate their knowledge of a specific lexical item on the resulting 5-point scale. Although the instrument mainly relies on self-report data, the learners also have to provide evidence for their claims from category three onwards by giving translations or synonyms or by using the lexical item productively. As mentioned above, the VKS was originally designed for research on reading, but the instrument has been adapted and used for studies on listening as well, for instance by Vidal (2003 & 2011). In the case of the present study only two major modifications were made, as can be seen from a comparison of figures 1 and 2. First, the categories were translated into German to ensure comprehension and second, the word 'heard' (German 'gehört') was added to categories A, B and C to include learning from aural input.

| Wort | |
|---|---|
| A | Ich kann mich nicht erinnern, dieses Wort schon einmal gehört oder gesehen zu haben. |
| B | Ich habe dieses Wort schon einmal gehört oder gesehen, aber ich weiß nicht, was es bedeutet. |
| C | Ich habe dieses Wort schon einmal gehört oder gesehen und ich <u>glaube</u> es bedeutet: _____ |
| D | Ich kenne dieses Wort. Es bedeutet: _____ |
| E | Ich kann dieses Wort auch in einem Satz verwenden: _____ _____ *Wenn du hier einen Satz schreibst, fülle bitte auch Kategorie D gleich darüber aus.* |

**Figure 2: Adapted Vocabulary Knowledge Scale used in the present study**

The main advantage of the VKS in comparison to translation tests is that it allows a more fine-grained analysis of different levels of word knowledge, which is why it is usually classified as measuring vocabulary depth (cf. Milton 2009: 159–161; Read 2000: 138). In addition, Paribakht and Wesche attempted to demonstrate the validity and reliability of the VKS in a pilot study with 96 subjects. The correlation of self-assessment scores with actual evidence provided by learners produced high correlations above 0.9, a test–re-test reliability check within two weeks revealed that reliability was above 0.8, and an analysis of concurrent validity with the Eurocentres Vocabulary Size test showed correlations of about 0.5 (Wesche and Paribakht 1996, qtd in Milton 2009: 160).

However, the instrument has also been evaluated critically by a number of experts in the field, even though they acknowledge its basic usefulness and the fact that it constitutes "a pioneering effort" (Read 2000: 132) to describe depth of vocabulary knowledge. Both Read (2000: 136) and Milton (2009: 160) criticize what is perhaps the VKS's most serious limitation, namely its inability to assess knowledge of multiple word meanings. Meara (1996: 6) and Read (2000: 136) point out that Paribakht and Wesche seem to view vocabulary learning as progression on a linear scale, which is doubtful in reality, and criticize that the transition of a lexical item from one level to the next cannot be regarded as permanent because of the phenomenon of forgetting (Meara 1996: 7). Further limitations relate to the measurement of productive knowledge because using a word in an isolated sentence is not an ideal way of

finding out whether a learner has actually understood its meaning (Read 2000: 137) and provides partial knowledge about learners' linguistic knowledge at best (Gass 1999: 325–326). In addition, Milton (2009: 160–161) states that scores tend to cluster at either end of the scale and Meara (1996: 6) criticizes the scale's generally coarse level of measurement because it only describes the basic stages of the word learning process.

The last point of criticism is perhaps the easiest to counter as it is in fact Wesche and Paribakht's (Paribakht and Wesche 1997: 179/year only) declared intention to measure the basic stages of word learning:

> The VKS is not intended to go beyond the ability to use the words in initial contextualized production, for example to tap knowledge of additional word meanings, or derivational, paradigmatic, semantic and other relationships and networks.

In research that actually addresses the initial steps of vocabulary acquisition, as in the case of the present study, several other points of criticism are also less valid. As will be shown later, scores do not tend to cluster at the ends of the scale, but rather only in the lower categories and therefore issues concerning refined productive word knowledge lose importance. In addition it might even be considered necessary to view vocabulary learning as a linear process for practical reasons, although this does not have to mean that a transition from one level to another is regarded as permanent. Finally, as Milton (2009: 161) points out, in practice the VKS is often used to measure vocabulary breadth rather than depth, which is also true for this study because the main research question asks whether students actually know a word, but not how well they know it. In the vocabulary pre- and post-test 'knowing a word' is therefore operationalized as 'being able to obtain a minimum score of 3 on the VKS', which means that a student is able to provide a correct translation or synonym of the target word. Thus, the only serious limitations that have to be borne in mind when it comes to deciding on the scoring procedure are the problems of multiple word meanings and semantically neutral sentences and these issues will be discussed in section 5.5. In summary, I regard the VKS as a useful instrument for research on the initial stages of vocabulary learning and this conclusion is also drawn by Vidal (2003: 65) who considers it "a suitable measure for tracking the early development of specific words".

Having thus decided on a format for the vocabulary test, it was necessary to establish criteria for potential target words. To be useful targets, words, which are

defined as 'lexemes occurring in pop songs', have to occur in current pop songs and be available for incidental learning, which means that they should not have been explicitly taught previously. These selection criteria were further operationalized as words which appear in songs in the current charts, but which do not occur in two common course books for Austrian lower secondary schools: *The New You & Me* (Gerngross et al. 2009) and *More!* (Gerngross et al. 2007-2010). These course books were chosen because, firstly, they are used in the two schools that participated in the research project and, secondly, they are widely used in Austria in general. Hence, analysing them increased the chance of finding words that most Austrian eighth-graders would not know and thus improved the level of generalizability of the whole study. In addition, the operationalization of 'pop songs' as 'songs in the charts' was based on practical considerations as well as on discussions in the relevant literature. As has been mentioned in section 4.3., pop music can be defined in terms of sales figures, with regard to means of dissemination, or in connection with a social group (cf. Middleton and Manuel n.d.: section 1). The operationalization of pop music as music in the charts mainly uses the first of these definitions, but also entails the facts that charts music is distributed predominantly by the mass media and associated with the social group of young people and teenagers. To ensure a proper level of familiarity of participants with the pop songs, the selection was further limited to songs occurring in the top 15 of the *Austria Top 40* charts (www.austriatop40.at) between August and October 2011.

In practice, the design process for the vocabulary test began with the compilation of a corpus of vocabulary covered in the four volumes of each of the two course books. The words that are taught in the two books were either extracted from the word lists available on the accompanying CD-ROMs or, where this was not possible, they were entered into lists manually. The next step was to find suitable songs and to establish a second corpus of song lyrics. As mentioned above, all songs occurring in the top 15 of the *Austria Top 40* charts between August and October 2011 were considered in the analysis or systematically excluded from it. Reasons for exclusion were non-English lyrics, highly inappropriate words or content, or the impossibility to understand the lyrics. Finally, a corpus of 40 song texts was collected from websites such as www.azlyrics.com or www.lyrics.de and each of the lyrics was corrected for mistakes.

After the compilation of the two corpora was completed, they were analysed using the freeware programmes *AntConc* (Anthony 2011) and *AntWordProfiler* (Anthony 2009). Both lemmatized and unlemmatized frequency lists[28] were computed for each song text and were then compared individually with the course book reference corpus. As a result, a first list of possible target words was established to which other selection criteria, such as frequency of occurrence in the lyrics (at least twice), level of comprehensibility or salience in the song, were applied subsequently. In this way, the list of possible target words was narrowed down to 42 lexical items, which were subjected to further analyses taking into account the number of potential items per song, the distance of items from each other within a song, and a preliminary choice of possible primes. After the completion of these analyses a list of 20 words in 13 songs was still available and these were presented to the English teachers of the four experimental classes to check whether they had taught any of the potential target items in class. This step was considered necessary to increase the likelihood of testing genuinely incidental acquisition because teachers commonly also present vocabulary that is not included in the course books to their students.

Eight lexical items were identified as not having been taught by all teachers, whereas two items were marked as taught by all four teachers, six words by two and two items by only one teacher. Consequently, I decided to also include words that one or two of the teachers had marked as taught because eight words were considered too small a number of target items for the quasi-experiment. It goes without saying that these different levels of pre-knowledge will have to be taken into account at the stage of data analysis. Next, the primes for the piloting study were chosen. As has been mentioned in section 5.1., care was taken to ensure that target words would not occur in the primes and instances of both forward and backward priming were used. This means that half of the musical stimuli occur before target items in the original pop songs (forward priming) and half of them are usually heard after the target item (backward priming). The primes were produced using the programme *audacity*

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[28] "A lemma includes a headword and its most frequent inflections, and this process [of lemmatization] must not involve changing the part of speech from that of the headword" (Milton 2009: 10). Therefore, lemmatized frequency lists combine different word forms under their respective headwords (e.g. 'sing', 'sings' and 'sang', but not 'song') and give the overall frequency of occurrences of the headword in the analysed text, while unlemmatized frequency lists include all different word forms with their respective frequencies.

(Mazzoni 2006) and burnt on CD; their length varies between 5 and 10 seconds, depending on the pace of the song.

Parallel to the design of the vocabulary test, a questionnaire for the survey was developed. Since its main purpose was to collect data concerning the exploratory research question two (see section 1.2.), relevant literature on possible influencing factors (see section 2.2.2.) was reviewed first and a list of potential influences was compiled. In a next step, I formulated questionnaire items to gather data on potentially relevant factors such as time spent listening to music, music education, language background or engagement with song lyrics. At this stage I received helpful input from many fruitful discussions with my supervisor, colleagues, friends and younger siblings. The piloting version of the questionnaire was based on considerations raised in Grau (2009), Berns et al. (2007) and Seregély (2008), but also incorporated additional aspects. Following the conventions of mixed methods research, it combined closed items and open questions, and for reasons of comprehensibility all items were presented in German.

In order to ascertain whether the experimental procedure was viable in the proposed form and whether questionnaire items were understandable to 14-year-old students, a piloting study was conducted. It took place in a Viennese Gymnasium (grammar school) in December 2011 and followed the same procedure as the main study (see section 5.4.) except for the inclusion of a feedback phase with four volunteers after the completion of the quasi-experiment. The students were informed that the purpose of this session was to try out an experiment for my diploma thesis and that the results would remain anonymous and unpublished.

Overall, the piloting study showed that the experimental procedure was practicable and could be carried out within one school lesson (50 minutes). The students' feedback on the questionnaire was very useful and helped to clarify issues such as what they understood the term 'pop song' to mean. On the basis of their comments some minor changes were made to the questionnaire, but it remained largely unchanged. Hence, in its final version the questionnaire (see appendix 1) contained five blocks of questions concerning personal data (sex, age, native language(s), foreign language(s), stays in English countries), habits of music consumption (time, frequency, kinds of music, sources, parallel activities, language of songs), musical abilities and training (singing, instruments), engagement with song lyrics (importance,

comprehension, learning techniques, transcriptions of song texts and translations) and the use of pop songs in school (previous use, desire to use pop songs).

Concerning the vocabulary tests used in the quasi-experiment, results from the piloting study showed that one lexical item created problems because students had learned it as part of a collocation in school.[29] At the same time, I realized that a misunderstanding in communication with one of the teachers had occurred and that I had been given wrong information concerning the list of vocabulary items taught in her class. Hence, the word selection for the main study had to be changed and the final list of lexical items included a total of 14 words from 10 pop songs, which are presented in table 4 in the order of appearance in the test booklet. One further change regarded the final selection of primes because due to the inclusion of new target words some of these had to be altered as well. At the time of the main study all pop songs had been in the charts for at least 9 weeks ensuring sufficient time for songs to reach a high level of familiarity among students and thus for the treatment outside school to take place.

| Item | Word | Song |
|------|------|------|
| 1 | a blade | Grenade (Bruno Mars) |
| 2 | to toss | Grenade (Bruno Mars) |
| 3 | a clover | I'm Into You (Jennifer Lopez feat. Lil Wayne) |
| 4 | a blur | Last Friday Night (Katy Perry) |
| 5 | screwed | Last Friday Night (Katy Perry) |
| 6 | to skip | Heart Skips A Beat (Olly Murs ft. Rizzle Kicks) |
| 7 | a price tag | Price Tag (Jessie J feat B.o.B.) |
| 8 | breathless | Rolling In The Deep (Adele) |
| 9 | a scar | Rolling In The Deep (Adele) |
| 10 | an edge | The Edge of Glory (Lady GaGa) |
| 11 | a tone | The Lazy Song (Bruno Mars) |
| 12 | bulletproof | Titanium (David Guetta feat. Sia) |
| 13 | to ricochet | Titanium (David Guetta feat. Sia) |
| 14 | to deny | We Found Love (Rihanna feat. Calvin Harris) |

**Table 4: List of final target words to be used in pre- and post-test**

The materials to be used in the main study were then combined into a single test booklet (see appendix 1). First, general instructions and an example of the Vocabulary Knowledge Scale are presented followed by the vocabulary pre-test. The questionnaire was inserted in the middle of the booklet, again preceded by instructions on how to fill it in correctly. Finally, the last part consists of the post-test,

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[29] The lexical item in question was 'apart', which students had learned as part of the collocation 'apart from'.

which is exactly the same as the pre-test except for the inclusion of questions on the target songs (see figure 3). The structure of these song items is similar to the vocabulary items in that students again have to select the appropriate category and provide evidence for their familiarity with songs in category C. It is important to note that during the pre- and post-test participants were only presented with one item at a time, either a VKS item for a target word or a song item for a target song, and were not allowed to go back. Thus, the left page of the booklet was always left empty with the exception of the middle part presenting the questionnaire, which students were allowed to fill in at their own speed.

| **Kennst du diesen Song?** | |
|---|---|
| A | Ich habe dieses Lied noch nie gehört. |
| B | Ich kenne dieses Lied, aber ich weiß nicht wie es heißt |
| C | Ich kenne diese Lied, es heißt _____ <br> und ist von _____ |
| **Magst du diesen Song?** | |
| ☐ Ja, sehr gerne      ☐ Ja, gerne. <br> ☐ Geht so.             ☐ Nein, gar nicht. | |

**Figure 3: Song item used in the post-test**

In summary, the materials used in this study, a vocabulary test and a questionnaire, were especially designed for it after careful consideration of different options and possibilities.

## 5.4. Data collection

The four experimental sessions took place in mid January 2012 within a time span of one week and were all conducted by the researcher herself. Participants were tested in intact classes and each experiment followed the same procedure, which will be described in this section.

At the beginning of the session I gave a brief introduction stating that the experiment was part of my diploma thesis and stressing the anonymity and confidentiality of results. The students were not informed about purpose of experiment in advance to avoid distortion of results, but they were told that it was not intended to be traditional test and that it was likely that they would not know all the answers. Moreover, students were positively encouraged to write down all their ideas, even if they were not certain about their correctness. Subsequently, I went through the instructions

printed in the test booklet together with the students and asked whether anything had remained unclear. If there were no further questions, the experiment started.

During the pre-test students had half a minute to fill in the VKS for each target word; after 30 seconds a bell was rung, which was the signal for the whole class to turn the page. This procedure was adopted in order to control for time effects and to ensure that all participants had the same amount of time for each item.

After the pre-test was completed, students filled in the questionnaire. In this phase participants were allowed to work at their own speed but at the end of the questionnaire they had to wait until all their colleagues had finished. The post-test followed the same procedure as the pre-test using the bell signal in-between vocabulary items, but in addition short extracts from pop songs, the primes, were played before the items.[30] Table 5 briefly summarizes the chronological sequence of all activities included in an experimental session.

| Time (50') | Activity | Comments |
|---|---|---|
| 3' | Preparation, introduction, distribution of booklets | |
| 7' | Instructions + possible questions | |
| 8' | Pre-test | 30 seconds per item (=14x30 sec) |
| 2' | Instructions + possible questions | |
| 10' | Questionnaire | |
| 5' | Finish questionnaire | |
| | Instructions + possible questions | |
| 13' | Post-test | 30 seconds per item + 30 seconds per song (=14x30 sec + 10x30 sec) |
| 2' | Conclusion, collection of booklets, thanking for participation | |

**Table 5: Summary of experimental procedure**

After the experiment there was usually some time left for a short informal feedback round. These informal discussions proved to be highly informative for the researcher because they showed that most students had understood the purpose of the experiment during the post-test phase. Furthermore, students were happy to share

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[30] It is, however, important to note that a prime was not played before every vocabulary item because in some songs more than one target word occurs. Thus, for instance Song 1 *Grenade* was heard before item 1 *a blade*, but no song was played before item 2 *to toss* because the target word also appears in Song 1.

comments and freely discussed whether they thought they had ever learned vocabulary from pop songs or not.

Minor problems that were encountered during experimental sessions included issues of timing as the 30 second intervals could not always be kept exactly due to practical reasons or in rare cases disciplinary problems such as students talking to each other. In general, the topic of pop songs seemed to be very emotional for students and the possibility to ask their neighbour if they could not remember a song title or artist was highly tempting for some. Still, I usually succeeded in enforcing silence, which was an important prerequisite to ensure independence of results.

Three experimental sessions went very well, but unfortunately in the last one it was rather difficult to enforce the necessary conditions for the experiment to take place. The class was unmotivated and uncooperative and after their normal teacher had left the room it took quite an effort to maintain silence and discipline. In this situation a mistake happened, when a prime was played at the wrong time. Unfortunately, the error was not noticed straight away and thus two items were filled in after hearing the wrong primes. The mistake was corrected immediately by going back and telling students to fill in the items a second time reconsidering their answers, but the change in procedure was of course also taken into account during data preparation and scoring, which will be discussed in the next section.

## 5.5. Data preparation and scoring

This section will provide information on the preparation of the data for statistical and qualitative analyses, particularly on the scoring procedure for the vocabulary tests. Due to the slightly different experimental sequencing in class AHS b, the first step of data preparation was to compare the results of the latter to those of the other three classes for the affected items. It was found that in general results were comparable; hence, the correction of the mistake during the experiment had been successful. However, due to inappropriate comments made in the booklet or completely negative answers in the post-test two booklets of class AHS b were excluded from the analysis leaving a total of 74 participants.

After this initial step, scoring procedures continued as planned. The original scoring scheme of the Vocabulary Knowledge Scale by Paribakht and Wesche (1997: 181) is presented in figure 4.
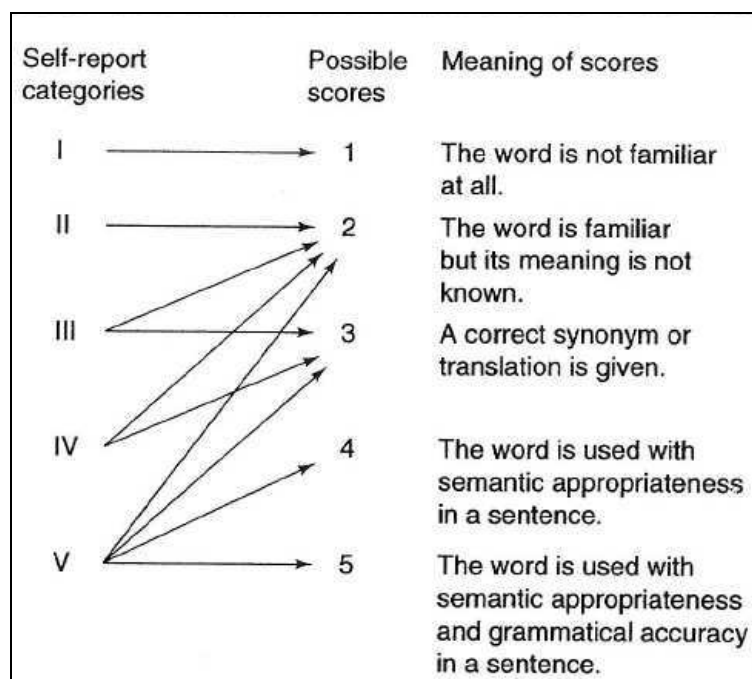
**Figure 4:Original scoring scheme of the Vocabulary Knowledge Scale**
**(Paribakht and Wesche 1997: 181)**

As can be seen from this schematic illustration, an unfamiliar word (category I) receives 1 point. Words that are familiar but the meaning of which is unknown (category II) are scored with 2 points, as are all incorrect answers in category III, IV and V. A score of 3 is given if a correct synonym or translation is provided in either category III or IV. Productive answers in category V that are both semantically and grammatically correct receive 5 points, while a score of 4 means that the word was used in a wrong grammatical, but appropriate semantic form in a sentence (Paribakht and Wesche 1997: 179–180).

This original scheme has been adapted in other studies; for instance, Vidal (2011: 232) introduces negative points for recognizing non-words and a half-point step to differentiate between incorrect (2 points) and partially correct or vague answers (2.5 points). Similarly, Seregély (2008: 47–53) extends the original scoring scheme by including a detailed description of problems encountered during the scoring procedure and her solutions for these.

Building on the original scoring scheme of the VKS, the adaptations proposed by Vidal and Seregély and considerations based on results from the piloting study, I devised a comprehensive scoring scheme for this study, which is presented in table 6. The scheme constitutes an attempt to include all different possible answers and to provide a short reasoning for the score awarded by adapting categories used by Seregély (2008).

| Category or problem | Level of knowledge and explanation | Score |
|---|---|---|
| A[31] | does not recognize the word<br>*total unfamiliarity* | 1 |
| no answer | = A: does not recognize the word<br>*total unfamiliarity* | 1 |
| B | recognizes having seen/heard the word<br>*partial unfamiliarity* | 2 |
| wrong answer in C, D, E | = B: recognizes having seen/heard the word<br>*partial unfamiliarity* | 2 |
| C, D, E without evidence | = B: recognizes having seen/heard the word<br>*partial unfamiliarity* | 2 |
| E sentence given + no translation/ synonym in D: correct sentence, but misinterpretation of meaning | = B: recognizes having seen/heard the word<br>*semantically incorrect use shows partial unfamiliarity* | 2 |
| C, D translation wrong, but association right | has a vague idea of the meaning of the word<br>*vague recognition* | 2,5 |
| E sentence given + no translation/ synonym in D: correct sentence, grammar of lexical item wrong, but gives indication of associated meaning | has a very vague idea of the meaning of the word<br>*semantically vague use shows vague recognition* | 2,5 |
| C | has an idea of the meaning of the word<br>*partial recognition* | 3 |
| D | shows a full understanding of the meaning of the word<br>*total recognition* | 3,5 |
| E semantically correct, but grammar of lexical item wrong + D correct | shows a full understanding of the meaning of the word and is able to provide an example but grammatically wrong<br>*total recognition and partially correct word use* | 4 |
| E only a fragment, but correct + D correct | shows a full understanding of the meaning of the word and is able to provide an example in form of a sentence fragment<br>*total recognition and partially correct or ambiguous word use* | 4 |
| E partially wrong or semantically ambiguous (quoting lyrics) + D correct | shows a full understanding of the meaning of the word and is able to provide an example but partly wrong or semantically unclear<br>*total recognition and correct but ambiguous word use* | 4 |
| E correct, but D grammar of lexical item wrong | shows a partial understanding of the meaning of the word and is able to provide a correct example<br>*partial recognition and semantically correct word use* | 4 |
| E sentence given + no translation/ synonym in D: correct sentence, but doesn't give clear indication of meaning | is able to provide a correct example, which partly indicates meaning<br>*correct but ambiguous word use shows partial recognition* | 4 |
| E + D completely correct | shows a full understanding of the meaning of the word and is able to provide a correct example<br>*total recognition and correct unambiguous word use* | 5 |
| E + C completely correct | shows a full understanding of the meaning of the word (although not certain) and is able to provide a correct example<br>*total recognition and correct unambiguous word use* | 5 |
| E sentence given +no translation/ synonym in D: correct sentence gives clear indication of meaning | is able to provide a correct example, which clearly indicates meaning<br>*correct unambiguous word use shows total recognition* | 5 |

**Table 6: Scoring scheme of the Vocabulary Knowledge Scale used in the present study**

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[31] Note that for reasons of simplicity letters rather than numbers are used to designate the categories; hence category I of the original scoring scheme corresponds to category A in the summary above.

The first column in table 6 displays the categories that are available for selection or describes any special issues, such as a productive example in category E without a translation in category D, that were found. Column two provides a brief explanation of what the student's response is assumed to mean in terms of level of vocabulary knowledge and relates special cases to the five default categories. Finally, column three gives the respective scores for each level of knowledge. As can be seen, unfamiliar words (category A) are awarded 1 point and partially unfamiliar words (category B) 2 points. Vague recognition (category C/D) receives 2.5 points, partial recognition (category C) 3 points, and total recognition (category D) 3.5 points. The half-point step between categories C and D was introduced to differentiate between the states of believing to know a word and being sure to know what a lexical item means and thus relates to learners' certainty of knowledge. In category E, total recognition and partially correct or ambiguous word use is scored with 4 points and total recognition and correct, unambiguous word use with the maximum of 5 points. As discussed in section 5.3., ambiguous word use is a problem that frequently occurs in semantically neutral sentences. When establishing the scoring scheme, it was decided to award 4 points to such cases because semantically neutral sentences do not show students' ability to use a word correctly and often do not even provide evidence for full comprehension of a lexical item. The second problem of multiple word meanings was solved by accepting all the different meanings of a given word that can be found in common dictionaries, even if they differed from the way the word is used in the original pop song.[32]

Since for practical reasons it was impossible to enlist the help of a second rater all test booklets were scored twice using the scoring scheme presented above. In addition, all instances of wrong answers and problematic cases as well as all correctly produced sentences were recorded in lists together with the score awarded to ensure consistency in ratings. These two lists also formed the basis of subsequent qualitative analyses such as the error analysis, for instance. If a student's response was written in an unclear hand, a second person's opinion was obtained and if it was

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[32] One could object here that if a word was translated with a meaning different from the meaning in the original pop song, this would mean that it was not learned from the song. However, this is not necessarily true because learners can look up words from pop songs and then remember what they find in the dictionary rather than inferring the meaning from the song text.

indeed found to be illegible, it was categorized as a type of missing data similar to missing responses.

After the scoring procedure was completed, the resulting data were keyed into an SPSS datasheet (SPSS Inc. 2010a) and closed questionnaire items were also entered into the programme. In addition, the total pre- and post-test scores were calculated for each participant by summing up all individual scores of the pre- or post-test. Qualitative answers given in the questionnaire were collected in an Excel spreadsheet (Microsoft Corporation 2010) together with the booklet number. After the completion of the data preparation phase several different analyses were conducted, which will be presented in the next chapter together with their results.

# 6. Data Analysis and Results

This chapter explains the different analyses that were applied to the data and introduces their respective results. The presentation of the findings will begin with the results of the survey, then the outcome of the lexical analysis of the pop song lyrics will be presented and finally, the results of the analysis of the experimental data will be described. Although they constitute the main focus of this study, the results of the quasi-experiment are presented last because the analysis of the vocabulary test scores also draws on findings of the survey and the lexical analysis and thus combines all strands of investigation.

In the tradition of mixed methods research, both quantitative methods, such as frequency counts and statistical testing, as well as qualitative methods, such as the analysis of open questions and error analysis, are applied at each stage of analysis. As a consequence, the results of the different analyses support and complement each other and may thus provide more detailed insights.

## 6.1. Results of the survey

The results of the survey were obtained using two different methods: data from the closed questionnaire items were analysed with the help of frequency counts and responses to the open questions were collected and then combined into larger categories. Further steps of analysis included the creation of new variables by merging several existing ones, binning[33] of different values or quantifying qualitative data for use in statistical tests. Frequency information from the quantitative data will always be given in percentages of the sample size (N=74) to allow for easier comparison; if the figures do not add up to a 100%, the missing percentages indicate missing data because participants either failed to respond or the question was not applicable to them. In contrast, it is not possible to present frequency counts obtained from the qualitative data in the form of percentages as participants often did not respond to open questions or their answers could be classified in more than one category, and thus the number of valid answers per item is highly variable. Consequently, frequency counts of the qualitative data will be given in numbers and should merely be regarded as general indications due to the strong variations in

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[33] Data binning is a data preparation technique with which contiguous values of existing variables are combined into a smaller number of categories (cf. SPSS Inc. 2010c).

sample size for open items. The findings from both methods will be presented in a combined form starting with the results concerning participants' habits of music consumption, which were gathered in the second part of the questionnaire (see appendix 1).

All students (100%) stated that they like listening to music. The reasons they gave for this very clear preference, however, are much more varied: relaxation and calming down were mentioned most often (N=19), while the contrasting motives of fun, entertainment and stimulation, and motivation (N=10) and getting into a good mood (N=10) were also quite popular. Many participants stated that they simply love music (N=14): "Ja, ich höre gerne Musik, weil ich es einfach liebe und genieße"[34] (booklet 14), while some indicated that its most important purpose is distraction (N=6): "[…] weil du für kurze Zeit auch einmal alles um dich vergessen kannst"[35] (booklet 53). Others thought that listening to music helps them to regulate their mood (N=6), improves concentration for studying (N=4) or facilitates reflection (N=4).

Having established that all participants like listening to music, the next question tried to find out which kinds of music they listen to and whether they also like the music in the current charts. The most popular music styles among participants are pop (N=43), rock (N=21), hip hop (N=16), techno (N=16) and house (N=11). Other kinds of music that were mentioned less than 10 times include rap, jazz, hardstyle (a kind of electro), R'n'B, electro, dubstep and classical music. Regarding the students' opinion of the charts, 89.2% stated that they generally like charts music, while 8.1% claimed that they do not. Reasons for positive answers comprised the modernity and trendiness of the charts (N=5), their coolness (N=7), positive and motivating effects of charts music (N=3), the fact that it corresponds to students' preferred music style (N=3) and many more specific motives. The main cause for negative reactions against the charts can be summarized as uniformity of style, monotonousness and lack of new ideas (N=4).

As figure 5 shows the great majority of students stated that they listen to music almost every day (87.8%). They were than also asked to estimate how much time they spend listening to music per day and the results from this open question are

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[34] "Yes, I like listening to music because I simply love and enjoy it" (booklet 14)
[35] "… because for a short time you can forget everything else around you" (booklet 53)

displayed in figure 6. It is worth noting that the categories were built by combining students' answers and thus do no represent time intervals of equal length. Nevertheless, figure 6 clearly shows that most students spend up to 4 hours listening to music per day and a smaller number stated that they pass even more time with it with the highest estimate being 12 hours (questionnaires 2 & 4).
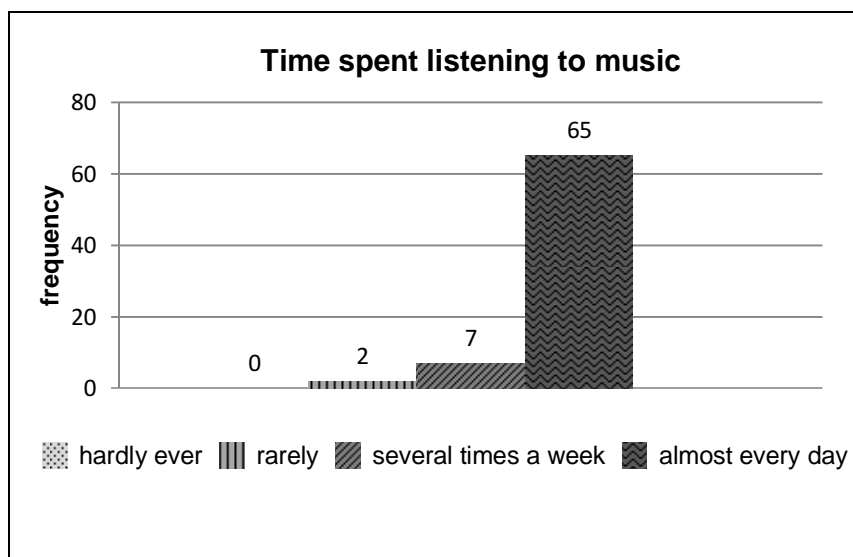


**Figure 5: Time spent listening to music (N=74)**
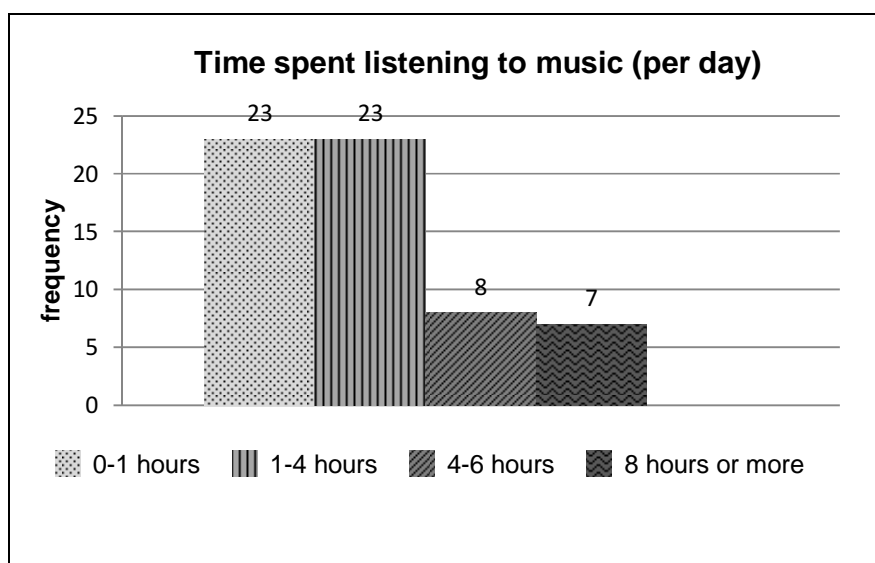


**Figure 6: Time spent listening to music per day (N=65)**

Interestingly, almost all students report to commonly engage in parallel activities while listening to music with 43.2% stating that they often do something else simultaneously and 40.5% almost always. Popular activities include doing homework (N=23), studying (N=15), playing computer and video games (N=20), using the computer and surfing the internet (15), carrying out household chores (N=17), reading (N=11), dancing (N=11) and sports (N=6). Other parallel activities mentioned were chilling with friends, drawing, eating, getting ready and even sleeping.

The next table displays information on a crucial element of this study: the languages of the music that students listen to. The responses concerning two different items have been summarized in this table: the first two columns on the left entitled 'languages of music' list all the languages that students named in a general open question ('Which languages are the songs you listen to in?'), while the three columns to the right indicate the answers students gave when they were asked to rank the languages according to how often they listened to songs in them. Hence, the results with respect to 'languages of music' present percentages of how many students out of the total 74 named a particular language in response to the first question, and the results regarding 'ranking of languages' show how often a language was mentioned in the three categories of the ranking.

| Languages of music | | Ranking of languages | | |
|---|---|---|---|---|
| | | most often | second most often | third most often |
| English | 21.70% | 91.90% | 2.70% | 5.40% |
| German | 59.50% | 4.10% | 71.60% | 17.60% |
| French | 18.90% | - | 5.40% | 14.90% |
| Bosnian | 12.20% | 1.40% | 6.80% | 4.10% |
| Spanish | 23.00% | - | 4.10% | 17.60% |
| Italian | 9.50% | - | 1.40% | 6.80% |
| Croatian | 1.40% | - | 1.40% | - |
| Armenian | 1.40% | - | 1.40% | - |
| Albanian | 1.40% | 1.40% | - | 1.40% |
| Turkish | 2.70% | 1.40% | - | 1.40% |
| Austrian German | 2.70% | - | 2.70% | 2.70% |
| Portuguese | 2.80% | - | - | 2.70% |
| Russian | 1.40% | - | - | - |
| Serbian | 2.80% | - | - | - |

**Table 7: Languages of pop songs**

The figures show that English is clearly the language that students listen to most often with 91.9% indicating it as the most frequent language of songs. Astonishingly, English was only named by 21.7% in the general open question, for which German is the top of the list. In the ranking, however, German is unmistakably relegated to the second place because 71.6% named it as the language they listen to second most often. Category three presents a more balanced distribution with German and Spanish having been chosen by 17.6% and French by 14.9 %. The factors that seem to influence the ranking of languages will be discussed in the chapter 7, as will the implications of these results. What can be said here is that a brief analysis of the

Austrian charts shows a very similar picture. For this analysis, which evidently does not claim to be a comprehensive investigation, the top 40 songs of the Austrian charts of four different weeks were examined in terms of the language of songs[36] (see appendix 3). Results reveal that overall 76.3% of the songs are in English, followed by German with 18.1%, and thus reflect the students' ranking of languages.

In addition, the second block of the questionnaire, which attempted to gather information on student's habits of music consumption, also included items on the preferred place and time of listening to music and on the sources of music from popular media (items 2e, 2g, 2h and 2i, see appendix 1). However, these results were not found relevant for later analyses and hence are presented here only very briefly. Students reported that they mainly listen to music at home (N=55), but they also do it outside, especially when travelling around by car or using a means of public transport. Few responses were given concerning preferred time of music consumption, but in those that were nearly all times of the day were indicated at least once. Regarding the sources of music from popular media, the internet platform YouTube emerged as a clear favourite as can be seen from table 8. In contrast, music channels on television are the least used option nowadays according to the participants and radio programmes enjoy medium popularity. In the open follow-up question the Austrian radio channels Kronehit (N=45) and Ö3 (N=43) were mentioned most often, whereas the German music channels Viva (N=35) and MTV (N=16) and the Austrian channel Go TV (N=7) were the top of the list for music TV.

| | hardly ever | rarely | often | almost always |
|---|---|---|---|---|
| I listen to the radio. | 16.20% | 29.70% | 29.70% | 24.30% |
| I watch music channels on TV. | 41.90% | 29.70% | 21.60% | 6.80% |
| I watch music videos on YouTube. | 2.70% | 13.50% | 50.00% | 33.80% |

**Table 8: Sources of music from popular media (N=74)**

The third part of the questionnaire was designed to provide information on the students' musical aptitude and training and on the extent to which they actively engaged with pop songs. Table 9 summarizes the results of the first four items.

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[36] The four weekly charts that were analysed were from the 7th and 14th of October 2011, the time when the corpus of songs for the experiment was compiled, and from the 13th and 20th of January 2012, the period in which the research project was carried out. The selection of weeks that are rather distant in time was meant to increase the level of generalizability of this subsidiary analysis.

| | hardly ever | rarely | often | almost always |
|---|---|---|---|---|
| I like singing. | 25.70% | 18.90% | 20.30% | 35.10% |
| I sing along to songs I know. | 6.80% | 20.30% | 29.70% | 43.20% |
| I play karaoke games (SingStar, We Sing) | 36.50% | 25.70% | 24.30% | 13.50% |
| I often have songs stuck in my head ("catchy tunes"). | 0.00% | 6.80% | 31.10% | 62.20% |

**Table 9: Active engagement with pop songs (N=74)**

It can be observed from the table above that many students like to sing and more than 50% reported that they sing along to songs they know often or almost always. A substantial number also plays karaoke games and thus engages with songs and their lyrics in a playful way. The most surprising finding, however, regards the song-stuck-in-my-head phenomenon (Murphey 1990b: 116–117) because more than 90% of participants stated that they experience catchy tunes often or almost always. In addition, the last question of this block asked students whether they played one or more instruments and 55 students (74.3%) replied that they did. A follow-up question showed that of those 55 musicians, 22 (60%, N=55)[37] regularly play pop songs on their instruments.

Having found out about participants' musical background and their engagement with the musical component of songs, part four of the questionnaire was aimed at students' engagement with the lyrics of pop songs. The majority of participants reported that they find them rather important (47.3%) or not so important (28.4%), while 12.2% stated they either regard them as very important or not important at all. Thus, overall students did not think the texts of songs in the charts to be highly significant, but most of them attached at least some importance to them. The results concerning students' comprehension of English lyrics are again summarized in form of a table below.

| | hardly ever | rarely | often | almost always |
|---|---|---|---|---|
| I understand English lyrics when I listen to songs in the charts. | 0.00% | 16.20% | 60.80% | 23.00% |
| I understand single words of English lyrics when I listen to songs in the charts . | 0.00% | 17.60% | 44.60% | 36.50% |
| I try to understand words in English lyrics. | 4.10% | 25.70% | 37.80% | 32.40% |

**Table 10: Results concerning comprehension of English lyrics (N=74)**

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[37] This figure combines the count of categories 'often' and 'almost always'.

Most students (60.8%) claimed that they often understand English lyrics when they listen to pop songs and a total of 81.1% stated that they understand single words in song texts often or almost always. Regarding the attempt to understand English lyrics the figures are distributed more evenly, but a total of 70.2% reported that they try to understand words often or almost always. As a follow-up question to the last item students were also asked why they tried to understand the words of English songs or why not, and here a wish to grasp the content and meaning of the songs was found to be the deciding element (77%). Only 8 students (10.8%) stated that they did not try to understand the lyrics because they did not care about the content of the songs. Besides, 14 students (18.9%) also mentioned other reasons which included being able to sing along (N=4), improving their English skills (N=3) or testing their knowledge of English (N=3).

Next, potential vocabulary learning strategies (VLS) for unknown words in English lyrics were elicited. Students were presented with a list of five different strategies and one negative choice ("I usually don't do anything") and were asked to select all the answers that applied to them. The findings are summarized graphically in figure 7, which shows that the number of non-users clearly exceeds the number of users for four of the five VLS. This is also reflected in the data on the negative response option, which was chosen by 35 students (47.4%).
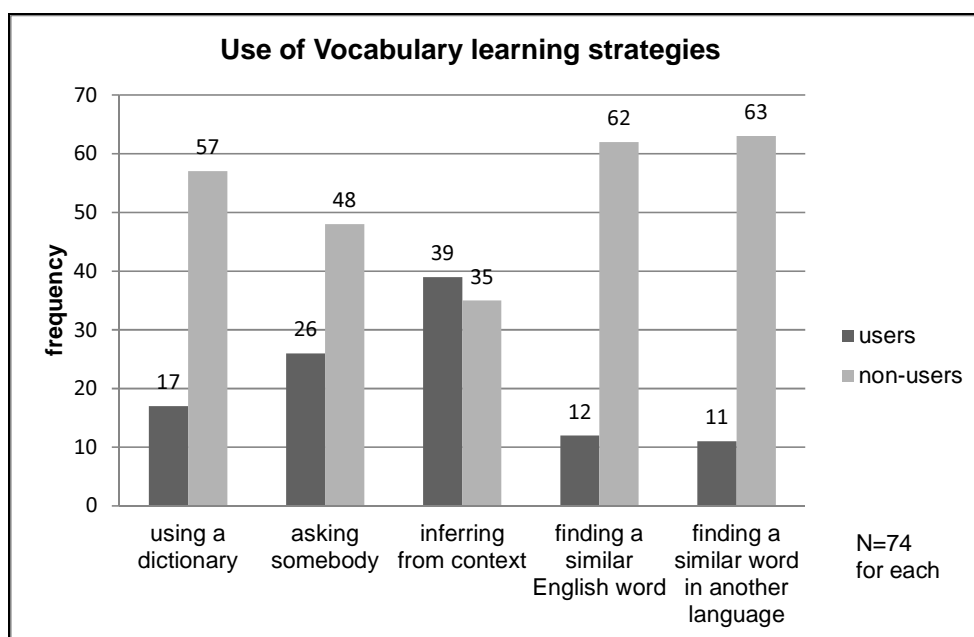


**Figure 7: Use of Vocabulary learning strategies**

As can be seen, the most commonly employed strategy appears to be 'inferring from context' with 39 students (52.7%) reporting that they use it for unknown words in song texts. However, even if students apply VLS to pop songs, most of them do not record the results of strategy use. In the follow-up question to this item only 3 students stated that they did anything at all after having attempted to find the meaning of a word and these reported to either write down or print song texts and their translations or to attempt to remember and to actively use the words they looked up. Regarding the decision on which words to look up, students reported that they try to understand words that seem to be important for the comprehension of the content of a song (43.2%), words that appear frequently in a song (55.4%), or words that seem familiar to them (40.6%).

The last items in block 4 of the questionnaire were concerned with transcriptions and translations of song lyrics. Participants were asked whether they read song texts or German translations of these and why they do so or why not. It can be observed from table 11 that most students do not usually read English song texts nor their German translations.

| | hardly ever | rarely | often | almost always |
|---|---|---|---|---|
| I read song texts of English songs in the charts. | 28.40% | 39.20% | 21.60% | 9.50% |
| I read German translations of English song texts. | 40.50% | 29.70% | 14.90% | 9.50% |

**Table 11: Reading of song texts and translations (N=74)**

Reasons that were chosen for the reading of English song texts were comprehension of the content (44.6%), particular liking of a song (55.4%) or interest in the stars (29.8%), and much the same picture emerged regarding German translations. Students who did not read English song texts or their German translations could give their motives in an open response possibility ("other reasons"). Reasons against the reading of transcriptions were lack of interest (N=2), time required (N=2) and the fact that songs are for listening and not for reading (N=2). The strongest motive against reading translations was that it was considered to be unnecessary because some students claimed to understand the lyrics anyway (N=8). For instance, students wrote that they do not read translations of song texts "weil ich sie auch so verstehe"

(booklet 50) or "Ich verstehe es auch auf Englisch"[38] (booklet 75). In addition, lack of interest (N=49) and time required (N=4) were mentioned again. It is worth noting that a closer inspection of the data revealed that all the students who viewed reading translations as unnecessary attended the Gymnasium (AHS).

Finally, the last part of the questionnaire briefly asked students about the use of pop songs in school. The first two items attempted to ascertain whether pop songs had been used or discussed in English lessons and results indicated that they had not been employed at all or only rarely.[39] Regarding students' desire to use pop songs in English lessons, this study found that most students would indeed like it (83.8%). Students stated that it would be interesting (N=14) and fun (N=12), that it would be a welcome change from 'normal' lessons (N=11) and that it would help them to learn more about songs (N=5) and to acquire new words (N=6). Interestingly, some students seemed to associate the use of songs in class immediately with singing (N=6) and 3 students openly stated that they would prefer pop songs over having to do anything else: "um nichts faderes [sic] zu machen"[40] (booklet 71). In contrast to the last answer, other students gave astonishingly strong comments against the use of pop songs because they thought them to be senseless (N=6) or were not interested in them at all (N=3). The following two statements are cases in point and exemplify their decisiveness: "Für was brauche ich das denn. Ich mag es so wie es ist und sonst nicht" (booklet 35) or "Weil wir bei Songtexten nichts lernen"[41] (booklet 64).

## 6.2. Results of the lexical analysis

The lexical analysis was conducted as part of the material design process to develop the vocabulary test for the quasi-experiment. Subsequently, additional measures were calculated to provide a comprehensive analysis of the target words and songs. All calculations were done with the programmes Antconc (Anthony 2011) and

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[38] "because I understand them anyway" (booklet 50) or "I also understand them in English" (booklet 75).

[39] 31.1% reported that they had used pop songs in their English lessons and 25.7% stated that they had talked about them. Surprisingly, in all four classes students gave different answers to these two questions, although all had experienced the same English lessons.

[40] "so that we don't do anything more boring" (booklet 71)

[41] "Why should I need that. I like it the way it is and not any other way" (booklet 35) or "because we don't learn anything from song texts" (booklet 64).

AntWordProfiler (Anthony 2009) and with the help of Nation's BNC word family frequency lists (Nation n.d.).

Overall, the corpus of lyrics from the ten final pop songs consisted of a total number of 4354 tokens. Frequency counts further revealed a total number of 628 word types and of 548 word types in the lemmatized word list.[42] In addition, the type-token ratio (TTR) was calculated for the whole corpus (0.26) and for all songs; the average TTR per songs is 0.27. Song length varied between 03:22 minutes and 05:21 minutes with an average length of 03:49 minutes. This means that in these pop songs on average 116.59 word tokens are heard per minute, but in reality the figure is of course more variable because of pauses or instrumental bridges.

Table 12 summarizes the features of the 14 target words in relation to the songs in which they appear. All of the target words occur at least twice in the songs, but item 6 *to skip* and item 10 *an edge* have a much higher frequency with 32 and 41 occurrences respectively. Only three words are used in the song titles and these are items 6, 7 and 10. The majority of the selected lexical items can be found in the chorus or pre-chorus of the songs; a fact that is also related to comprehension and frequency since the chorus usually returns at least two or three times and is often easier to understand. Finally, the last column offers information on the melodic form of the word within the song, showing on how many notes a word is sung and whether the melody rises or falls. This is considered relevant information because the melodic form of a word strongly determines its salience within a song.

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[42] Lemmatized lists were made using Someya's lemma list (Someya n.d.). It needs to be noted that the lemmatized word lists were not completely exact because morphemes such as "*'s*" create problems in untagged word lists as they could stand for words such as *has* or *is* or refer to the possessive case. An attempt was made to adapt Someya's list manually to fit the most frequent options used in pop songs, but the results are still slightly imprecise.

| Item | Word | Song | Freq. | Title | Part of song | Comprehension | Melody |
|:---:|---|---|:---:|:---:|---|:---:|---|
| 1 | a blade | Grenade | 3 | No | chorus | adequate | middle of line, slower, up, 1 tone |
| 2 | to toss | Grenade | 4 | No | bridge | adequate | end of line, up, 1 tone |
| 3 | a clover | I'm into you | 3 | No | pre-chorus | good | end of line, down, 2 tones |
| 4 | a blur | Last Friday night | 2 | No | pre-chorus | adequate | end of line (no pause), level, 1 tone |
| 5 | screwed | Last Friday night | 2 | No | pre-chorus | good | end of line, down, 2 tones |
| 6 | to skip | Heart Skips a Beat | 32 | Yes | chorus, hook | good | middle of line, level, 1 tone |
| 7 | a price tag | Price Tag | 10 | Yes | chorus | good | end of line, down, 2 tones |
| 8 | breathless | Rolling in the deep | 2 | No | pre-chorus | good | end of line (no pause), down, 4 tones |
| 9 | a scar | Rolling in the deep | 4 | No | pre-chorus | good | middle of line, level, 1 tone |
| 10 | an edge | The edge of glory | 41 | Yes | chorus, pre-chorus | good | middle of line, level, 1 tone |
| 11 | a tone | The lazy song | 4 | No | chorus | good | end of line, down, 2 tones |
| 12 | bulletproof | Titanium | 3 | No | pre-chorus | good | middle of line, up and down, 3 tones |
| 13 | to ricochet | Titanium | 3 | No | pre-chorus + stanza | good | middle of line, up and down, 3 tones |
| 14 | to deny | We found love | 2 | No | pre-chorus | good | end of line, up, 3 tones |

**Table 12: Features of target words in relation to songs**

In addition to the features of lexical items in relation to the original songs other word properties were analysed as well. These include factors that have been suggested to influence acquisition from oral input (see section 2.2.2.) such as overall frequency in the language, part of speech or correspondence between orthographical and phonological form. The results concerning these factors are displayed in table 13. Besides, the tables also provides information on words with different morphological forms in the songs, special features of words that might aid comprehension and the level of pre-knowledge according to the teachers of the experimental classes.

| Item | Word | Form in song | Frequency in BNC | Part of Speech | Special features | Taught in class(es) |
|------|------|--------------|------------------|----------------|------------------|---------------------|
| 1 | a blade | | 3 | noun | | |
| 2 | to toss | tossed | 3 | verb | | |
| 3 | a clover | | 8 | noun | | HS b & AHS a |
| 4 | a blur | | 6 | noun | | |
| 5 | screwed | | 2 | adjective | | |
| 6 | to skip | skips | 3 | verb | | AHS b |
| 7 | a price tag | | 3 | noun | compound | |
| 8 | breathless | | 3 | adjective | compound | AHS a & AHS b |
| 9 | a scar | scars | 4 | noun | | HS b & AHS b |
| 10 | an edge | | 2 | noun | | |
| 11 | a tone | | 3 | noun | German cognate | AHS a |
| 12 | bulletproof | | No | adjective | compound | |
| 13 | to ricochet | | No | verb | | |
| 14 | to deny | | 2 | verb | | AHS b |

**Table 13: Intrinsic properties of target words**

Column three is concerned with the general frequency of the target words and displays frequency information in relation to the British National Corpus (BNC). This information was obtained using Paul Nation's fifteen one-thousand-word word family lists from the BNC that are included in his *Range* software (Nation n.d.).[43] The lists were used with the AntWordProfiler (Anthony 2009) software to ascertain in which BNC word family list the target words occur. Hence, the number 3 in the third column of the table means that these words are found among the three thousand most frequent word families in the BNC. It is worth noting that two target items (12 & 13) do not occur in any of the 15 frequency lists.

The column entitled 'Special features' summarizes properties of target words that might aid comprehension. Item 11 *a tone* is related strongly to the German word *Ton*, for instance, and items 7, 8 and 23 consist of different word parts that can be analysed separately. In addition, some of the lexical items have already been presented to learners according to the teachers of the experimental classes (see section 5.3.), and since existing word knowledge is obviously an important factor and

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[43] For further information on the compilation of the lists and problems with the BNC word family lists see the documents that are enclosed with the *Range* (Nation n.d.) software.

might facilitate incidental acquisition of further knowledge, it was also taken into account in the statistical analyses.

## 6.3.   Results of the experiment

The data collected in the quasi-experiment were examined quantitatively. Before presenting the results of the statistical analyses, it is essential to draw attention to the assumptions underlying statistical testing and to clarify whether these criteria are fulfilled by the data. Clearly, an introduction to the foundations of statistical testing is well beyond the scope of this thesis, but the types of data used in the study, the assumption of normality and the issue of parametric and non-parametric tests need to be commented on here.

### 6.3.1. Preliminaries to statistical testing

Quantitative data can be collected on different scales of measurement: the nominal, ordinal, interval and ratio scales (cf. Bachman 2004: 20–24; Cohen et al. 2011a: 604–606). Values on the nominal scale of measurement merely represent distinctive categories, while ordinal data can be ordered hierarchically. Data points on an interval scale are equally distant from each other in addition to being ranked and finally, the ratio scale has an absolute zero and therefore allows the expression of values in proportions. In the context of the present study all levels of measurement are of relevance except for the ratio scale, which cannot normally be used in linguistic research. The questionnaire clearly consists of nominal and ordinal variables, but the question of which scale of measurement is presented by the vocabulary test scores is not answered that easily. To the best of my knowledge, all previous studies that used the VKS assumed it to constitute an interval scale, although none of them comments on the issue explicitly (cf. Paribakht and Wesche 1997; Seregély 2008; Vidal 2003, 2011). Still, according to common statistical conventions the kinds of statistical tests employed in these studies should only be applied to interval data and therefore it can be safely inferred that the researchers assumed the VKS to represent such a scale. It is however questionable whether the stages of the VKS, and the levels of word knowledge they indicate, can be viewed as constituting a scale with equal distances. As Milton et al. (2010: 89) point out, it is hard to argue that language grades constitute an interval scale because the increase in knowledge from one grade to the next does not usually have to be equal. This may be especially true for productive tests or writing and speaking, to which Milton et al.

primarily refer, but the problem also needs to be borne in mind when dealing with vocabulary scores. In the case of the VKS a fair case can be made for the range of pre-test and post-test scores to present a scale with equal distances, even if the individual categories might not present an interval scale. Since most of the statistical calculations will be based on the total scores and since all previous studies regarded the VKS as constituting an interval scale, I propose to follow this convention and to treat the vocabulary scores as interval data.

The scale of measurement is however not the only problematic aspect concerning statistical testing in the present study. Using statistical techniques, quantitative data can be illustrated using descriptive statistics (e.g. frequency counts, measures of central tendency and dispersal) or analysed using inferential statistics (e.g. measures of difference between groups), which make inferences about the wider population based on the results of a representative sample (cf. Cohen et al. 2011a: chapters 35 & 36; Bachman 2004: 33–34). However, for inferential techniques to produce meaningful results, certain assumptions need to be satisfied. For tests of statistical difference these usually include normality of distribution, homogeneity of variances and independence of observations (cf. Larson-Hall 2010: 373–374; Bachman 2004: 236–237). In the context of this research project, the criterion of independence of observation was fulfilled by ensuring that participants worked independently during the experimental procedure. The satisfaction of the two remaining assumptions needs to be assessed mathematically because they impact more directly on the choice of statistical tests. Yet, as there are ways to balance effects of heterogeneity of variances (e.g. Levene test for t-tests, cf. Cohen et al. 2011a: 642), normality of distribution emerges as the decisive factor. In inferential statistics two kinds of tests are distinguished: parametric tests, which assume a normal distribution of the data, and non-parametric tests, which do not (cf. Larson-Hall 2010: 373–374). Parametric tests are sometimes assumed to be more powerful than non-parametric ones, but theoretically they cannot be used if the data are not normally distributed. In practice, however, experts vary in their opinions on the robustness of different statistical tests to violations of normality. For instance, Bachman (2004: 236) argues that the two-tailed t-test does not require the distribution of the data in the sample to be normal, but only in the population. In any case, the distribution of the collected data needs to be analysed before applying statistical tests to ascertain whether normality is given or not.

In this study normality of distribution was assessed with the help of SPSS, which provides several different possibilities. Firstly, measures of central tendency and dispersal provide an overview of the distribution of the data and secondly, histograms, Stem-and-Leaf Plots and Q-Q plots allow inspecting it visually. As a third option, SPSS also offers two tests of normality, the Kolmogorov-Smirnov and the Shapiro-Wilk test.
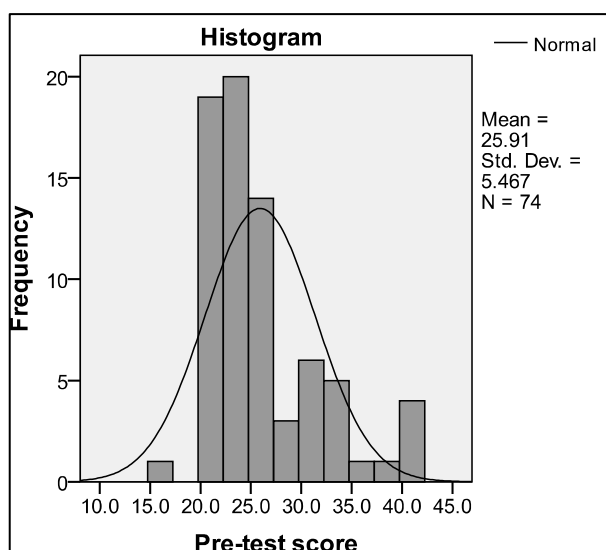


**Figure 8: Histogram of pre-test scores with normal distribution curve**
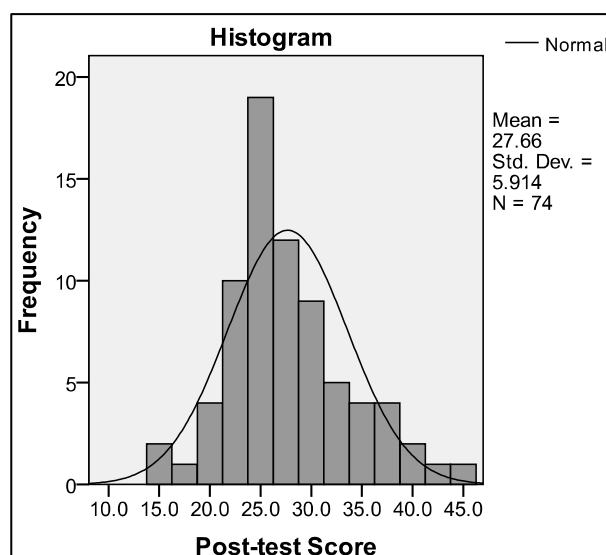
**Figure 9: Histogram of pre-test scores with normal distribution curve**

|  | Pre-test score | Post-test score |
|---|---|---|
| Mean | 25.912 | 27.662 |
| Std. Error of mean | .6356 | .6875 |
| Median | 24.000 | 26.500 |
| Variance | 29.893 | 34.973 |
| Std. Deviation | 5.4674 | 5.9138 |
| Minimum | 16.0 | 15.0 |
| Maximum | 42.0 | 45.0 |

**Table 14: Summary of measures of central tendency and dispersal for total pre-test and post-test scores (N=74)**

As can be seen from figures 8 and 9, the data do not show a normal distribution; in particular the pre-test scores do not fit the normal distribution curve. Table 14, which summarizes the measures of central tendency and dispersal for the pre-test and post-test scores, shows a similar picture with the mean and the median not lying closely together in both distributions. In addition, the tests of normality both reach statistical significance (Kolmogorov-Smirnov statistic 0.177, p=0.000 for pre-test and 0.119, p=0.011 for post-test; Shapiro-Wilk statistic 0.878, p=0.000 for pre-test and

0.964, p=0.033 for post-test), which means that the data do not fit the normal distribution (cf. SPSS Inc. 2010b; Larson-Hall 2010: 84–85).

As a consequence of the lack of normality, non-parametric statistics should be used for the data at hand. However, as has been pointed out above, some experts argue that certain parametric tests are in practice very robust to violations of the assumption of a normality (cf. Bachman 2004: 236). For this reason and because parametric statistics are often easier to interpret, both parametric and non-parametric tests will be applied to the data in the subsequent analyses, but the potential violation of assumptions has to be taken into account when interpreting the results. All parametric tests used are two-tailed as the formulated hypotheses are non-directional, which means that they only state that there is a relation between two variables, but do not indicate the direction of the relationship (Cohen et al. 2011a: 127).[44]

When reporting the results of statistical tests several figures will be given: the statistical measure of the respective test, its significance, the standard deviation and a measure of effect size. An effect size is "the magnitude of the impact of the independent variable on the dependent one" (Kline 2004 qtd in Larson-Hall 2010: 114). In this thesis measures of effect size are reported in addition to statistical significance because "[s]tatistical significance on its own has come to be seen as an unacceptable index of effect […] because it depends on both sample size and the coefficient" (Cohen et al. 2011a: 616). In contrast, effect size can show how large the impact of an observed finding actually is. Measures of effect size can be computed for all statistical tests, the calculation and interpretation guidelines adhered to in this thesis are presented in Larson-Hall (2010: 114–120).

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[44] In general a hypothesis can be directional and non-directional; "a directional hypothesis states the kind or direction of difference or relationship between two conditions or groups of participants […ˈ whereas a] non-directional hypothesis simply predicts that there will be a difference or relationship […] without stating whether the difference, for example, is an increase or decrease (Cohen et al. 2011a: 27). This distinction is important for the choice of appropriate statistical tests because one-tailed tests are used with directional hypotheses and two-tailed tests are used with non-directional ones (Cohen et al. 2011a: 610).

## 6.3.2. Statistical tests

To investigate research question 1 (see section 1.2.), the participants' overall performance on the pre-test and the post-test in the quasi-experiment was compared. A paired-samples t-test and a Wilcoxon signed ranks test were conducted to determine whether there was a difference between the two results of the tests. The results of the paired-samples t-test showed that the mean post-test score (M=27.662, SD=5.914) was statistically significantly higher (t=-4.806, df=73, p=0.000, d=-0.31) than the mean pre-test score (M=25.912, SD=5.467). This finding was confirmed by the non-parametric Wilcoxon signed ranks test (Z=-2.026, p=0.000, r=0.51). Thus, there was indeed a statistically significant difference between students' performance on the vocabulary pre- and post-tests. The magnitude of the effect was moderate (d=-0.31)[45] according to the t-test and large (r=0.51) according to the Wilcoxon signed ranks test.

Since this finding concerns the main aspect of the study, the power of the test was calculated as well. Statistical power refers to "the probability of detecting a statistical result when there are in fact differences between groups or relationships between variables" (Larson-Hall 2010: 104). A power analysis should ideally be carried out before a research project is conducted in order to determine the necessary sample size.[46] However, this was not done in the present case and it was decided to do a post-hoc power analysis although experts are rather critical of these (cf. Larson-Hall 2010: 104–105). The free statistical programme *R* (R Development Core Team 2011) was used to compute the power of the paired-samples t-test and yielded a figure of 0.74. Considering that no power analysis had been done prior to the research project this was a surprisingly good result. The level of power is usually expected to be above 0.5 and judged adequate at 0.8, but meta-analyses show that in reality it is often considerably lower (cf. Larson-Hall 2010: 104–105).

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[45] Cohen's d, which is the measure of effect size for t-tests, is calculated as d = $M_1 - M_2$ / σ $_{pooled}$ Becker (1998). It has a negative value here because $M_2$, the mean of the post-test, is larger than $M_1$, the mean of the pre-test, but this does not influence the size of the calculated effect.
[46] Larson-Hall (2010: 112) suggests that the most useful application of power analysis is before conducting the research project in order to determine the necessary sample size. A power analysis needs four out of five of the following factors to calculate the fifth: number of participants, effect size, significance level, power and specification of one-tailed or two-tailed test. Therefore, to calculate the number of participants, one would enter an estimation of effect size, the desired significance level, an appropriate level of power and the specification of the statistical test. The result then shows the sample size that would be needed to achieve the desired level of statistical power.

In addition, several analyses of more specific aspects were carried out. First, the difference between mean pre- and post-test scores was calculated for each individual item. Again, both paired-samples t-tests and Wilcoxon signed ranks tests were used and their results are displayed in table 15.

| | Paired-sample t-tests | | | | | | | Wilcoxon tests | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Pre M | SD | Post M | SD | t | N[1] | d | Z | r | N |
| **1 a blade** | 1.872 | .8800 | 2.061 | .0894 | -2.189* | 74 | 0.30 | -2.503* | 0.42 | 74 |
| **2 to toss** | 1.438 | .7635 | 1.801 | .7488 | -5.414* | 73 | 0.48 | -4.564** | 0.81 | 73 |
| **3 a clover** | 1.595 | .4943 | 1.838 | .3711 | -3.678** | 74 | 0.55 | -1.987* | 0.32 | 73 |
| **4 a blur** | 1.446 | .5005 | 1.595 | .4943 | -2.169* | 74 | 0.30 | -2.117* | 0.41 | 74 |
| 5 screwed | 1.703 | .5422 | 1.784 | .5040 | -1.229 | 74 | 0.16 | -1.225 | 0.25 | 74 |
| 6 to skip | 2.568 | .9586 | 2.596 | 1.1201 | -.369 | 73 | 0.03 | -.542 | 0.14 | 73 |
| 7 a price tag | 2.203 | .8558 | 2.277 | .9405 | -1.331 | 74 | 0.08 | -1.316 | 0.35 | 74 |
| 8 breathless | 2.493 | 1.0932 | 2.507 | 1.0614 | -.219 | 74 | 0.01 | -.140 | 0.03 | 74 |
| 9 a scar | 1.885 | .7788 | 1.885 | .7428 | .000 | 74 | 0.00 | .000 | 0.00 | 74 |
| 10 an edge | 1.804 | .6128 | 1.912 | .5450 | -1.920 | 74 | 0.19 | -1.886 | 0.44 | 74 |
| 11 a tone | 2.205 | .9273 | 2.260 | .8980 | -.607 | 73 | 0.06 | -.595 | 0.10 | 73 |
| 12 bulletproof | 2.082 | 1.0802 | 2.151 | .9849 | -1.217 | 73 | 0.07 | -1.213 | 0.32 | 73 |
| **13 to ricochet** | 1.189 | .4875 | 1.405 | .5714 | -3.691** | 74 | 0.41 | -3.411* | 0.73 | 74 |
| 14 to deny | 1.514 | .6024 | 1.628 | .6414 | -1.330 | 74 | 0.18 | -1.318 | 0.23 | 74 |

[1] df=73 for N=74, df=72 for N=73

* p<.005, ** p<.001

**Table 15: Results from paired-sample t-tests and Wilcoxon signed ranks tests comparing pre- and post-test scores for all individual items**

The findings presented in table 15 seem to indicate that the differences between the results of the pre- and the post-test concern item 1 *a blade*, item 2 *to toss*, item 3 *a clover*, item 4 *a blur* and item 13 *to ricochet*, as they are the only ones that show statistically significant differences. However, a closer inspection of the figures reveals that the differences between pre- and post-test scores for these items are most probably due to particularities of the scoring categories. The first two categories on the Vocabulary Knowledge Scale are category A "I do not remember having seen or heard this word before", which is accorded a score of 1, and B "I remember having heard or seen this word before, but I do not know what it means", which is represented by a score of 2 (see section 5.3.). The second, more detailed examination of the results found that the statistically significant differences for the items mentioned above are almost certainly due to a relatively large increase in scores 2. This presents a highly problematic finding because it means that many participants claimed that they had seen or heard a word before in the post-test after having marked it as completely unknown in the pre-test. Consequently, the gain in

scores 2 could either be an influence of the testing methodology because the same vocabulary test was presented as pre- and post-test within a relatively short time period, or of the musical primes. While the first case would constitute a Type I error because the null hypothesis has been rejected although it is in fact true (cf. Cohen et al. 2011a: 184), the latter would be a desirable result of the employed priming methodology. Evidently, the possibility of a Type I error does not only affect the results concerning individual items, but also the overall outcome of the study and thus poses a threat to its validity.

In view of the fact that it is impossible to address such a problem retrospectively, the only possibility to investigate it was to recode the dataset and to merge scores 1 and 2. The rationale behind this step was that if all 1s and 2s were recoded as score 2, application of statistical difference testing should be able to shed light on the problem: if the tests still showed statistical significance, the overall validity of the study would not be threatened; but if they did not, the observed results might indeed have been an effect of the methodology used. Exploratory analyses of the distribution of the recoded dataset showed that it differed even more markedly from a normal curve than before and hence demanded the use of a non-parametric test. Therefore, the Wilcoxon signed ranks test was applied to the data. It revealed that the difference between overall pre- and post-test results still reached statistical significance with recoded scores ($Z=-2.026$, $p=0.043$, $r=0.2$), although the level of statistical significance was much lower and the size of the effect only about half as large as before. Nonetheless, the outcome of the investigation of the recoded dataset provided evidence for the validity of the study and against the null hypothesis, so that it can be assumed rather safely that $H_0$ is not supported.

A second analysis concerned the level of previous knowledge because, as reported in section 5.3., six words were included in the quasi-experiment even though one or two teachers stated that they had taught them in class. Evidently, such a difference in pre-knowledge needs to be taken into account in the examination of the data and thus, the results of the pre-test items 3a *a clover*, 6a *to skip*, 8a *breathless*, 9a *a scar*, 11a *a tone* and 14a *to deny* were analysed in this respect. For this purpose scores were binned at the cut-off level 2.6 because scores between 1 and 2.5 signify that students did not know the meaning of the target word, whereas scores between 3 and 5 mean that they did. Score 3 actually indicates that students believe to know the

meaning of a lexical item, but following Paribakht and Wesche's (1997: 181) original scoring scheme, it was included in the category of knowing a word.

Frequency tables and crosstabulations with the grouping variable school class[47] were used to investigate differences between the experimental groups focusing on those six items that some teachers had indicated as taught. The results are summarized in table 16; to aid orientation the figures concerning the level of pre-knowledge of taught items are printed in bold.

| Item | taught in class(es) | Percentage of students who knew the word (pre-test) | | | | |
| --- | --- | --- | --- | --- | --- | --- |
| | | HS a | HS b | AHS a | AHS b | Total |
| | | N=16 | N=20 | N=22 | N=14 | N=74 |
| 1a a blade | | 6.3% | 10.0% | 17.4% | 13.3% | 12.2% |
| 2a to toss | | 0.0% | 0.0% | 4.3% | 6.7% | 2.7% |
| **3a a clover** | HS b & AHS a | 0.0% | **0.0%** | **0.0%** | 0.0% | 0.0% |
| 4a a blur | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 5a screwed | | 0.0% | 0.0% | 4.3% | 0.0% | 1.4% |
| **6a to skip** | AHS b | 33.3% | 5.0% | 47.8% | **40.0%** | 31.5% |
| 7a a price tag | | 12.5% | 5.0% | 30.4% | 13.3% | 16.2% |
| **8a breathless** | AHS a & AHS b | 25.0% | 15.0% | **39.1%** | **53.3%** | 32.4% |
| **9a a scar** | HS b & AHS b | 12.5% | **0.0%** | 4.3% | **0.0%** | 4.1% |
| 10a an edge | | 0.0% | 0.0% | 8.7% | 0.0% | 2.7% |
| **11a a tone** | AHS a | 31.3% | 15.0% | **45.5%** | 33.3% | 31.5% |
| 12a bulletproof | | 6.7% | 10.0% | 21.7% | 20.0% | 15.1% |
| 13a to ricochet | | 0.0% | 0.0% | 4.3% | 0.0% | 1.4% |
| **14a to deny** | AHS b | 0.0% | 0.0% | 4.3% | **6.7%** | 2.7% |

**Table 16: Levels of pre-knowledge (correct answers in pre-test in categories C, D, E) for all lexical items in %**

In general, the table shows that the overall level of previous knowledge was relatively low (see table 16, right-hand column 'Total') ranging from a minimum of 0% (items 3a, 4a) to a maximum of 32.4% (item 8a). As far as the taught items are concerned, it seems that some of them were not learned by students at all (items 3a and 9a) or only by very few (item 14a), while for others an effect of explicit teaching is clearly visible (items 6a, 8a and 11a). Astonishingly, for the latter three items the level of pre-knowledge is also relatively high in classes in which the target words were not taught according to the teachers. This might lead to interesting speculations concerning the sources of acquisition, to which I will return in the next chapter.

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[47] A grouping variable is a variable that identifies different groups in a dataset or a statistical test. In the case of crosstabulations the grouping variable is usually presented in the columns.

## 6.3.3. Qualitative analyses

In addition to statistical testing the results of the vocabulary tests were also analysed qualitatively. As mentioned in section 5.5., during the scoring procedure two lists were compiled which formed the basis for the qualitative analysis. The first list, including all incorrect answers, was used for the error analysis and in the second list all correctly produced examples were recorded. A close examination of the latter list showed that three students clearly referred to the song lyrics already in the pre-test although at that time pop songs had not been mentioned at all. One student even provided correct translations and corresponding song lyrics twice in the course of the pre-test. This is an extremely intriguing result and therefore the error list was analysed in this regard as well, which showed that another four students had mentioned song lyrics but had given wrong translations of the respective words. Consequently, it can be concluded that for seven different students (9.46%) the link between the target words and the corresponding song lyrics was so strong that they came to their mind already during the pre-test, although no reference to pop songs had been made. This result is not mirrored in the quantitative figures because all seven students received the same or even fewer points in the post-test and thus their knowledge of target words is not reflected in higher post-test scores.[48] This finding implies that the relation between the target words and the lyrics of the respective songs was most likely even stronger than indicated by the results of the statistical tests.

In addition, the qualitative analysis of productive examples showed that students did not only acquire target words from pop songs, but also from other sources of English. When analysing the productive sentences it became rather clear that certain lexical items had not been learned from the respective songs because they were used with a different meaning or in a completely different context. In most cases it is hard to hypothesize which sources led to the acquisition of a word, but for instance one student (booklet 44) clearly learned the word *to skip* from a computer game: "To skip the tuturial (sic!) press E!". Another aspect that was illustrated by the qualitative

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[48] All students who referred to the lyrics, but gave a wrong translation in the pre-test also gave the same in the post-test, and all students who produced a correct translation and a productive example in the pre-test already achieved a score of 5 and could not get a higher score in the post-test. Indeed, two of the students that received a score of 5 in the pre-test got a lower score in the post-test as they did not write the sentence again or made a grammatical mistake.

analysis was the fact that some students had never considered the meaning of certain words or song titles before and could not even relate target words to their songs, although the majority of participants did. For example, one student was able to fill in all details about song 5 in the song item, even spelling the artists and the title correctly, but then ticked category A "I have never seen or heard this word before" for item 7b *a price tag*, which is in fact the title of the song, on the next page.

In brief, the qualitative analysis of sentence production in category E showed firstly that students did not only acquire vocabulary from pop songs but also from other sources and secondly, that for some students the link between songs and target words was so strong that it was activated immediately, while others were not even able to find the connection with the help of the musical stimuli. The fact that the strong relation between lyrics and target words is not fully reflected in the vocabulary scores and thus in the statistical results must be regarded as a limitation of the employed research method. However, it also highlights the importance of an in-depth qualitative analysis of the data, which can bring such highly interesting features to light. Since the research design was devised especially for this study, it was to be expected that a number of improvements could have been made in retrospect and the analysis of the students' errors indicated some more limitations, which will be described below.

For the error analysis the number of students who made a particular mistake was counted. The most frequent errors are listed in table 17 together with possible reasons, but these explanations are of course only of a tentative nature.

As can be seen from the table 17, phonological and orthographic similarities appear to be an important factor for wrong guesses. Students frequently confused target words with phonologically similar L2 words and astonishingly often also used these similar words in song titles or productive sentences. A prototypical example for this problem is the confusion between *edge* and *age*; several students believed the title of song 5 to be "The Age of Glory" and thus did not recognize the word *edge* on the next page (booklet 11, 19, 34, 35, 60). Another case in point is song 7 "Price Tag", which some students reproduced as "Price Day" in the song item (booklet 28, 30, 35, 40). Other extreme cases include students noting down song titles or artists in a sort of phonetic transcription, for instance "Leidy Gager" instead of "Lady GaGa" (booklet 9) or "a harts gips a bid" instead of "Heart Skips A Beat" (booklet 10).

In contrast, confusion with L1 words was more often due to orthographic similarity. This is especially astonishing for item 11 *a tone* since English *tone* and German *Ton* are very similar, but the orthographic form led many students to translate *tone* as the German word *Tonne*. These frequent orthographic mistakes might be due to the fact that oral word knowledge is tested in written form, which is an acknowledged limitation of this study. In retrospect, these problems could potentially have been avoided by providing students with both the orthographic and phonological word form during the testing by simply reading the target words out loud. This possibility definitely needs to be borne in mind if future research into the phenomenon of incidental vocabulary acquisition from pop songs is conducted.

| Item | Incorrect translation | Freq. | Possible reasons |
|---|---|---|---|
| 1 a blade | Kreisel - *top (toy)* | 3 | Manga TV series *Beyblade* which is about tops |
| 2 to toss | ziehen - *to tow* | 2 | phonological similarity to L2 word |
| 3 a clover | Handschuh - *glove* | 3 | phonological and orthographic similarity to L2 word |
| 4 a blur | Blamage - *disgrace* | 2 | phonological similarity to L2 word |
| 5 screwed | schreiend, geschrien - *to scream, screamed* | 3 | phonological similarity to L2 word |
| | schrecken, erschrocken - *to scare, scared* | 4 | phonological similarity to L2 word |
| 6 to skip | weiterschalten - *to go to the next* | 4 | translation of partial meaning |
| | schließen, beenden - *to shut, to end* | 5 | |
| | schlagen (pochen) - *to beat* | 8 | wrong inference from song lyrics |
| 7 a price tag | Zahltag/Geldtag/Lohntag - *payday* | 16 | word segmentation into known parts + L1 -L2 orthographic similarity+ wrong inference |
| | Preistag - *price day* | 3 | word segmentation into known parts + L1 -L2 orthographic similarity |
| | schöner/prächtiger Tag - *beautiful/glorious day* | 8 | word segmentation into known parts + L1 -L2 orthographic similarity + wrong inference |
| 8 breathless | herzlos, gefühllos - *heartless, insensitive* | 2 | word segmentation into known parts + wrong inference |
| 9 a scar | (er)schrecken, Schreck - *to scare* | 6 | phonological and orthographic similarity to L2 word |
| | Angst - *fear* | 6 | phonological and orthographic similarity to L2 word |
| 10 an edge | Ecke - *corner* | 4 | |
| | Spitze, Höhepunkt - *top, climax* | 3 | wrong inference from song lyrics |
| | Epoche, Zeitalter, Alter - *epoche, age* | 5 | phonological similarity to L2 word |
| | h - *the letter h* | 2 | phonological similarity to L2 word |
| 11 a tone | Tonne - *barrel* | 19 | L1 - L2 orthographic similarity |
| 12 bulletproof | Kugelhagel - *hail of bullets* | 2 | translation of partial meaning + wrong inference |
| 13 to ricochet | - | | |
| 14 to deny | - | | |

**Table 17: Results of the qualitative error analysis**

Other sources of errors were the wrong analysis of word parts, especially for the compound words, and wrong inferences from song texts. Although wrong inferences did not occur with a high frequency rate, they were nonetheless an important source of error because the students often seemed to be rather sure about the meaning of the words[49] although they were in effect incorrect. In addition, the number of wrong guesses varies strongly between target items. While most students tried to translate item 7 *a price tag*, item 10 *an edge* and item 6 *to skip* (59, 47 and 44 wrong guesses respectively), most of them did not even attempt to give the meaning of item 13 *to ricochet*, item 14 *to deny* or item 4 *a blur* (2, 6 and 9 wrong guesses respectively). Hence, the number of errors per item is also an indicator of the familiarity of a given lexical item because it seems that students at least tried to translate familiar words.

So far, it has been shown that there is indeed a statistically significant difference between the results of the vocabulary pre- and post-tests, even if controlling for a possible confounding influence of the testing method. In addition, potential effects of previous knowledge for the taught items were examined and were found to be relevant for three items. The qualitative analysis revealed further that for some participants the relation between the target words and songs is so strong that they already quoted the lyrics in the pre-test, although songs had not yet been referred to. However, it also became clear that others did not relate target items to the respective pop songs at all and that some students had acquired target words from other sources of English out-of-school input. Finally, in the error analysis orthographic and phonological similarity, wrong analysis of word parts and wrong inferences from song texts were found to be possible reasons for frequent errors.

The next section will combine the results of the questionnaire, the lexical analysis and the quasi-experiment to explore which factors might have an impact on incidental vocabulary acquisition from pop songs.

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[49] This can be inferred from the students' ticking category D rather than C and by providing productive examples with the incorrect word meaning.

## 6.4. Combination of results – exploring potential influences

In this section results from all previous strands of analysis are combined to explore which factors potentially influence incidental vocabulary acquisition from pop songs, as addressed by research question 2 (see section 1.2.). This exploratory analysis consists of two parts: first, the impact of characteristics of participants and of their individual use of songs and lyrics will be assessed, and second, the influence of intrinsic properties of the songs, lyrics and target words will be investigated. This two-fold structure is also reflected in the presentation of the findings. All results were obtained with the help of further statistical and qualitative analyses. For the reasons set out in section 6.3.1., both parametric and non-parametric tests were used for statistical analyses and the presentation of results follows the same guidelines.

### 6.4.1. Characteristics of participants and of their use of songs and lyrics

Numerous learner-related variables could have had an impact on the incidental acquisition of vocabulary from pop songs in the present research context. Factors relating to learner's background will be presented first, then factors relating to students' use of music and pop songs will be discussed and finally factors relating to students' engagement with song texts will be described.

Learner-related variables that could have had an impact on incidental vocabulary acquisition include sex, school type, language background and stays abroad in English-speaking countries. Data concerning these factors were collected in the questionnaire and since all of the variables are nominal, they were used as grouping variables for tests of statistical difference.

Results concerning sex showed a statistically significant difference between male (N=36) and female students (N=38) for the pre-test (t-test: t=2.962, df=64.729, p=0.004, d=0.69; Mann-Whitney test: U=416.500, p=0.004, r=0.337), but not for the post-test (t-test: t=1.140, df=64.668, p=0.258; Mann-Whitney test: U=585.000, p=0.283). In the pre-test boys (M=27.764, SD=5.9046) performed significantly better than girls (M=24.158, SD=4.4160), but in the post-test the difference is much less striking ($M_m$=28.472, $SD_m$= 6.7135; $M_f$=26.895, $SD_f$=5.0124).

As can be observed from table 18, a statistically significant difference between HS and AHS emerged for both pre- and post-test scores for the grouping variable school type. The mean scores indicate that AHS students clearly outperformed HS students on both tests.

| | | | Independent-samples t-test | | | Mann-Whitney test | |
|---|---|---|---|---|---|---|---|
| | **M** | **SD** | **t** | **df** | **d** | **U** | **r** |
| **Pre-test** | | | -2.357* | 67.569 | -0.55 | 484.000* | 0.25 |
| HS (N=36) | 24.431 | 4.3951 | | | | | |
| AHS (N=38) | 27.316 | 6.0453 | | | | | |
| **Post-test** | | | -2.475* | 72 | -0.58 | 498.500* | 0.23 |
| HS (N=36) | 25.972 | 5.0723 | | | | | |
| AHS (N=38) | 29.263 | 6.2652 | | | | | |

\* p<.005, \*\* p<.001

**Table 18: Differences according to school type**

In addition, the difference between the four experimental classes was calculated using a one-way ANOVA and a Kruskal-Wallis test. Both tests showed no statistical significant differences for the pre-or the post-test (ANOVA pre-test: F=2.405, p=0.075; post-test: F=2.400, p=0.075; Kruskal-Wallis: pre-test: $\chi^2$ =6.807, p=0.078; post-test: $\chi^2$=5.278, p=0.153).

The students' language background was taken into account as well. For practical reasons it was only possible to investigate the influence of different first but not second languages. The nominal variable 'language background' was created from answers to the questionnaire item concerning native language. All students with a German language background were included in one group (N=61) and all students with a different first language background were subsumed in a second group (N=13). Since it was not feasible to use a parametric test because of the small number of students with a first language other than German and the distribution of the data, only the Mann-Whitney test was used. When comparing these two groups, a statistically significant difference was found for the pre-test (U=243.500, p=0.029, r=0.254) and the post-test (U=166.000, p=0.001, r=0.381). In both cases native speakers of German (mean rank 40.01 in the pre-test and 41.28 in post-test) performed better than students with a different first language (mean rank 25.73 in the pre-test and 19.77 in post-test).

The influence of stays in English-speaking countries was also calculated using only the Mann-Whitney test. Results showed that those students who had been to an English-speaking country (N=24, rank 48.58 in the pre-test and 46.40 in post-test) outperformed students who had not (N=49, rank 31.33 in the pre-test and 32.40 in post-test) on both tests. These findings reached statistical significant for the pre-test (U=310.000, p=0.001, r=0.384) and the post-test (U=362.500, p=0.008, r=0.311). Further analyses using crosstabs and binned test scores showed that most students

who had been to English-speaking countries attended the AHS (N=20) and that the difference according to this grouping variable was much more striking in the AHS than the HS.

Next, music-related factors will be presented. These include participants' musical skills, such as playing an instrument, and preferences, such as liking of charts music or singing. Again, nominal variables were used as grouping variable in the Mann-Whitney test and for ordinal variables the Spearman rank order correlation was calculated. The non-parametric tests were preferred for these analyses because the assumptions for parametric tests were satisfied to an even lesser extent than before.

Prior to the experiment, it was hypothesized that participants who reported not to like the charts could be used as a kind of post-hoc control group because the use of a conventional control group was impossible (see section 5.1.). Unfortunately, in reality this was found to be impractical because the number of students who reported not to like the charts was too small (N=6). It might be assumed rather safely that for the same reasons the Mann-Whitney test did not show any statistically significant differences for the grouping variable 'chart liking' (U=190.000, p=0.870 for the pre-test and U=185.500, p=0.814 for the post-test).

Regarding musical training, which was operationalized as playing an instrument, no statistically significant difference was found either (U=429.500, p=0.248 for the pre-test and U=474.500, p=0.548 for the post-test). This means that students who play one or more instruments, or played one in the past, (N=55) did not outperform non-musicians (N=19) in the quasi-experiment.

Other learner variables related to music and songs included the amount of time spent listening to music, parallel activities, active musical engagement with pop songs through singing, and catchy tunes. For these ordinal variables Spearman rank order correlations with the pre- and post-test scores were calculated and the results are displayed in table 19.

| | Pre-test | | Post-test | | |
|---|---|---|---|---|---|
| | ρ | R² | ρ | R² | N |
| Time spent listening to music (per week) | -0.024 | - | 0.048 | - | 74 |
| Time spent listening to music (per day) | 0.209 | - | 0.109 | - | 74 |
| Parallel activities while listening to music | 0.166 | - | 0.196 | - | 73 |
| Like singing. | -0.218 | - | -0.086 | - | 74 |
| Singing along to familiar songs | -0.374** | 0.14 | -0.165 | - | 74 |
| Playing karaoke games | -0.251* | 0.06 | -0.100 | - | 74 |
| Catchy tunes | 0.055 | - | 0.237* | 0.06 | 74 |

\* $p<.005$, \*\* $p<.001$

**Table 19: Spearman rank order correlations of music-related factors**

Most Spearman correlation coefficients presented in table 19 do no show statistical significance. The activities of singing along to familiar songs and playing karaoke games even correlated negatively with the pre-test score and only the catchy tune phenomenon correlated positively with the post-test score, albeit with a very moderate effect size.

Lastly, the influence of students' engagement with song lyrics on incidental vocabulary acquisition was analysed. These text-related factors included importance of lyrics, comprehension of English lyrics and efforts made to understand them, reading of transcriptions and translations, and the use of vocabulary learning strategies in combination with song texts. All variables except for the last concerning VLS were ordinal and thus investigated with Spearman rank order correlations. The use of VLS is a nominal variable, which was again used as a grouping variable for the Mann-Whitney test.

| | Pre-test | | Post-test | | |
|---|---|---|---|---|---|
| | ρ | R² | ρ | R² | N |
| Importance of lyrics | -0.116 | - | -0.176 | - | 74 |
| Comprehension of English lyrics | 0.411** | 0.17 | 0.395** | 0.16 | 74 |
| Comprehension of words in English lyrics | 0.362** | 0.13 | 0.392** | 0.15 | 73 |
| Attempt to understand words in English lyrics | 0.277* | 0.08 | 0.358** | 0.13 | 74 |
| Reading of transcriptions of English lyrics | -0.017 | - | 0.023 | - | 73 |
| Reading of translations of English lyrics | -0.230* | 0.05 | 0.033 | - | 74 |

\* $p<.005$, \*\* $p<.001$

**Table 20: Spearman rank order correlations of song text-related factors**

It can be observed from table 20 that comprehension of English lyrics, comprehension of single words in these and the attempt to understand English lyrics are all correlated positively with both pre- and post-test scores. Indeed, five of these

six correlations reach a very high level of statistical significance ($p<0.001$) and the correlation coefficients range between 0.28 and 0.41, which indicate a moderate relationship between two variables. The effect size r squared ($R^2$) shows moderate (0.08) to medium effects (0.17). In addition to these the only other factor that emerged as statistically significant was reading of translations of song texts, which in fact correlated negatively with the overall pre-test score, albeit with a rather weak effect.

In addition to these text-related variables, students were also asked whether they used vocabulary learning strategies to discover the meaning of unknown words in pop songs. For the purpose of statistical analysis these answers were combined to form a nominal variable separating learners who reported use of at least one VLS (N=54) from those who claimed to employ none (N=19). To ascertain any differences between the two groups, a Mann-Whitney test was performed but neither the pre-test (U=476.500, $p=0.645$) nor the post-test (U=393.500, $p=0.132$) showed statistically significant differences.

The analyses reported in this section show that of the learner-related factors sex of participants, school type, language background and stays in English-speaking countries seemed to have influenced incidental vocabulary acquisition from pop songs as measured by the pre- and post-test results. Of the music-related variables only the phenomenon of catchy tunes was found to correlate significantly and positively with test results and among the text-related factors comprehension of English lyrics, comprehension of individual words and the effort made to understand English lyrics emerged as relevant.

## 6.4.2. Properties of songs, lyrics and target words

In the investigation of potential influences on incidental vocabulary acquisition not only leaner-related variables were considered, but the possible impact of the intrinsic properties of the songs, lyrics and target words was analysed as well. Numerous aspects could potentially play a role in deciding which words are easier to acquire incidentally (see section 2.2.2), but a careful examination of all of these would go beyond the scope of this thesis. Thus the description below limits itself to those features that emerged as most salient and the results have to be regarded as rather tentative in nature.

First, the influence of song recognition and song liking as measured by the song items of the post-test (see section 5.3.) was investigated. Spearman rank order correlations were calculated between the overall scores for song recognition and liking and the pre- and post-test scores. Results show that song recognition is correlated positively with the pre-test score, the post-test score and song liking as summarized in table 21. The correlations were significant at a very high level ($p<0.001$) and the effect size $R^2$ indicates that the correlations between song recognition and test scores have a rather large effect. Interestingly, song liking is correlated negatively with the test scores, but these coefficients did not reach statistically significance.

| | Pre-test | | Post-test | | Song liking | |
|---|---|---|---|---|---|---|
| | ρ | $R^2$ | ρ | $R^2$ | ρ | $R^2$ |
| Overall song recognition | 0.446** | 0.20 | 0.494** | 0.24 | 0.312** | 0.10 |
| Overall song liking | -0.112 | - | -0.003 | - | | |

\* $p<.005$, \*\* $p<.001$

**Table 21: Spearman rank order correlations of song recognition and song liking**

In general, song recognition was relatively high among participants as could be shown with an analysis of the binned scores for song recognition and song liking[50] using frequency counts. Table 22 displays the number of students who recognized or liked a song in form of percentages to allow for easier comparisons.

| Song | Title | Song recognition | Song liking |
|---|---|---|---|
| 1 | Grenade | 89.20% | 66.20% |
| 2 | I'm into you | 45.90% | 55.40% |
| 3 | Last Friday night | 91.90% | 60.80% |
| 4 | Heart Skips a Beat | 40.50% | 68.90% |
| 5 | Price Tag | 60.80% | 74.30% |
| 6 | Rolling in the deep | 78.40% | 71.60% |
| 7 | The edge of glory | 74.30% | 62.20% |
| 8 | The lazy song | 87.80% | 66.20% |
| 9 | Titanium | 51.40% | 68.90% |
| 10 | We found love | 75.70% | 74.30% |

**Table 22: Song recognition and song liking for individual target songs (N=74)**

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[50] Similar to the scores of the vocabulary test, song recognition and liking scores were binned at a cut-off level of 2 as a score of 1 or 2 indicates non-familiarity or dislike and a score of 3 or 4 signifies that a song was recognized and judged favourably.

The table above shows that values for song recognition varied between 40.50% (song 4) and 91.90% (song 3), but further analyses demonstrated that a maximum of only 6.8% claimed never to have heard a song before.[51] It can also be observed from table 22 that high scores for song recognition do not necessarily coincide with high values for song liking, although the two variables are correlated positively, as was mentioned above.

Concerning the intrinsic properties of individual target words it is difficult to draw conclusions about which words were learned most easily because there is a great number of confounding factors. As was illustrated in section 6.3.2., methodological aspects exert a certain influence on the results of the quasi-experiment. In the first analysis a statistically significant difference between pre- and post-test results was found for items 1, 2, 3, 4 and 13, but this was largely due to a large increase of scores 2 in the post-test. A second analysis using recoded scores revealed that only item 7 showed a statistically significant difference according to a Wilcoxon test ($Z=-2.050$, $p=0.040$, $r=0.24$). Finally, a third analysis of binned pre- and post-test scores indicated that the scores for items 1, 2 and 7 increase most. Due to these methodological issues it is difficult to make general statements about the individual items, and the different lexical properties of the target words complicate matters even further. The 14 target words are very diverse in terms of lexical properties (see lexical analysis in section 6.2.) and most probably the number of target words included in this study was not large enough to render patterns of learnability visible.

What can be concluded rather safely from the findings of this study is that the three words *to ricochet*, *to deny* and *a blur* (items 13, 14 and 4) were the most difficult for students, which can be deduced from their low post-test scores and the fact that they had the least number of wrong guesses (see error analysis section 6.3.3.). In contrast *to skip*, *breathless* and *a price tag* (items 6, 8 and 7) displayed the highest post-test scores and the majority of students at least attempted to guess their meaning. One factor that could have promoted the acquisition of the latter three words is frequency of occurrence in song, as *to skip* occurs 32 times and *a price tag* 10 times. In addition both of these words also appear in the title of their respective

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[51] 5 students received a song recognition score of 1 for songs 2 and 9, which are 6.8% of the total number of participants (N=74).

songs, which could be another crucial aspect. This hypothesis is, however, challenged by item 10 *an edge* which is used in the title and has the highest frequency of occurrence in the song (41 times), but was acquired by fewer students. One solution to this issue might be that item 10 was very prone to wrong inferences (see error analysis section 6.3.3.) and thus information provided by the context of the song lyrics could also be of importance. Likewise, the error analysis revealed that words which are phonologically similar to other L2 words were frequently confused with those (e.g. *edge – age*) and the same holds true for items that are orthographically similar to other L1 words (e.g. *tone - Tonne*). Finally, in the case of *breathless* and *a price tag* word segmentation and the analysis of word parts in combination with previous word knowledge most probably facilitated incidental acquisition. Evidently, previous vocabulary knowledge, whether acquired in school or outside, generally aids acquisition of further words as well.

In summary, this section showed that song recognition appears to have influenced incidental vocabulary acquisition because it was correlated strongly with both vocabulary test-scores and the level of song recognition was generally very high. In addition, word-intrinsic factors that might have had an impact in the context of the present study include: frequency of occurrence in song, occurrence in song title, phonological and orthographic similarity to other target language words or to German words, word segmentation and analysis of word parts, information provided by the context of the song lyrics, language proficiency and previous vocabulary knowledge. Other factors that did not emerge as decisive in this exploratory analysis are: general frequency in the target language, part of speech or inflection of the word form in the lyrics, although this might in fact be due to the small number of target words. Finally, many additional aspects that were not investigated in this research project could potentially have had an influence as well, for instance: frequency of occurrence in the student's environment and in other English language media, familiarity of grapheme to phoneme mappings, word length, imageability, semantic content, polysemy, etc. (see section 2.2.1.). Hence, it is important to stress once again that this analysis was purely exploratory to provide first insights about possible influencing factors and future research may result in further interesting insights.

# 7. General Discussion

After the presentation of the results in the previous chapter, the outcomes will now be discussed with reference to the original research questions and hypotheses. Relevant findings from other studies and theoretical concepts mentioned in the literature review will also be taken into consideration when interpreting the results.

## 7.1. Discussion of results

This study set out to explore the effects of English pop songs on EFL vocabulary learning because songs present a previously overlooked source of incidental vocabulary acquisition in out-of-school contexts.

The first research question that was addressed in this research project (see section 1.2.) asks whether incidental vocabulary acquisition from pop songs in out-of-school contexts actually occurs: do Austrian EFL learners of intermediate proficiency acquire passive vocabulary knowledge incidentally by listening to and engaging with English pop songs outside school? This question actually entails two propositions, namely that Austrian students listen to English pop songs outside school and that they incidentally learn vocabulary from these. These two aspects are rendered explicit in hypotheses 1 and 2, which will be discussed in turn.

Research hypothesis 1 ($H_1$) states that intermediate Austrian EFL learners listen to English pop songs outside school. Consequently, the corresponding null hypothesis asserts the opposite and can be disproved by the results of the questionnaire. The outcomes of the questionnaire (see section 6.1.) show that all students (100%) like listening to music and that they spend a substantial amount of their leisure time listening to music since the majority (87.8%) reports to do so every day. These figures emphasize the importance of music in teenagers' lives in accordance with the findings of previous surveys (cf. Berns et al. 2007; ORF Markt- und Medienforschung 2008; Kuppens 2010; Summer 2010; Pfarrhofer 2011a) and support the arguments presented in chapter 4. With regard to the reasons for this high amount of music consumption, participants especially referred to aspects of mood management, which is one of the motives discussed in section 4.3. One student stated explicitly that she needed music to regulate her moods: "Ja, ich höre gerne Musik, weil ich Musik

brauche zum entspannen (sic!) oder wenn ich wütend bin"[52] (booklet 22). Other reasons that were given are related to cognitive aspects such as concentration or distraction and to listening for pleasure, which also relates to the emotional appeal of music. There were no statements concerning group membership or social identity formation, but it is likely that adolescents are not consciously aware of these motives.

In addition, the results of the questionnaire show that English is the language that students listen to most often with 91.9% indicating it as the most frequent language of songs. This outcome is not only supported by the findings of previous surveys (cf. Berns et al. 2007; Summer 2010), but also by a subsidiary analysis of the Austrian charts, which demonstrates that on average three quarters of the top 40 songs are in English. Learners also named several other languages of songs, but some of these were clearly influenced by the hits at the time of the experimental sessions and by factors relating to the learners' language background. For instance, students in the AHS often mentioned French, which is a compulsory school subject for them; learners with native languages other than German reported to listen to songs in these; and some participants mentioned Portuguese because of one song that was particular popular at the time.[53] Overall, the main language of pop songs is clearly English, a fact that is also related to the origin of modern pop music in the Anglo-American culture:

> [I]n practice Western economic and cultural hegemony during the period since World War II made it unavoidable that the major historical trends would be the spread of English-language styles – especially those originating in the USA and Britain – and responses to them (Middleton et al. n.d.: section 1).

Other findings from the questionnaire which are related to hypothesis 1 show that teenagers listen to a wide range of different music styles, an outcome that is also reported by Summer (2010: 322), and that most students engage in parallel activities while listening to pop songs (cf. Schramm and Kopiez 2008: 262; Sloboda 2010: 496). Concerning the sources of music[54] TV music channels seem to have lost some of their former importance, while internet platforms such as YouTube have gained

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[52] Yes, I like listening to music because I need music to relax or when I am angry" (booklet 22)

[53] The respective song was "Ai se eu te pego" by Michel Teló. One student actually indicated that she listed Portuguese because of one song (booklet 54) and others added comments like 'selten' (German for 'rarely') to languages such as Spanish or Portuguese.

[54] Note that this study only investigated sources of music from the popular media because an analysis of the sources of self-chosen music (e.g. purchase of CDs, downloads) would have gone beyond the scope of this project.

significance. In a recent survey among Upper Austrian adolescents YouTube was even found to be the most popular internet site in general (Pfarrhofer 2011b: 49), which further emphasizes the importance of internet sources for music consumption among today's teenagers.

In brief, all students who took part in this research project like listening to music and spend a considerable amount of their leisure time outside school doing so. Additionally, the language of most pop songs they listen to is English and therefore research hypothesis 1 is clearly supported by the results of the questionnaire.

Research hypothesis 2 (H$_2$) is concerned with the second aspect of research question 1 and can be regarded as the main hypothesis of this empirical study. It states that intermediate Austrian EFL learners who listen to and engage with English pop songs and their lyrics outside school will be able to translate English lexical items which they have not been taught but which occur in English pop songs into German or provide a synonym for them. This hypothesis was tested by applying statistical techniques to the results of the quasi-experiment after formulating corresponding null hypotheses for each of the statistical tests.

The analysis of the vocabulary pre- and post-test scores with a paired-samples t-test and a Wilcoxon signed ranks test showed that there is indeed a statistically significant difference with the mean post-test score being higher than the mean pre-test score. The power of the paired-samples t-test may be judged adequate and the magnitude of the effect can be considered moderate to large depending on the use of the parametric or non-parametric test (see section 6.3.2.). Moreover, statistical significance was achieved even when controlling for effects of the large increase in scores 2 between the pre- and the post-test. This increase could have either been an effect of the employed priming methodology or a confounding effect of the short time interval between the pre- and the post-test. Therefore, statistical tests were applied to a set of the data in which all 1s and 2s had been recoded as score 2 and their results showed that the difference is still statistically significant. The qualitative analysis of sentence production in category E of the Vocabulary Knowledge Scale further revealed that 7 students (9.46%) referred to song lyrics already in the vocabulary pre-test, even though students did not know that the target words had been taken from pop songs. This finding supports the results of the statistical tests because it suggests that for nearly 10% of the participants the link between the target words and

the respective pop songs was so strong that it was activated automatically during the pre-test.

As a result, research hypothesis 2 is confirmed by the data of the vocabulary tests, which suggest that intermediate Austrian EFL students did indeed acquire vocabulary from pop songs in out-of-school contexts. The increase between the mean score of the pre-test (M=25.912) and of the post-test (M=27.662) was not very high, even though it was found to be statistically significant. Yet, this was to be expected because gains in vocabulary knowledge from incidental learning are typically rather small (see section 2.3.) and because the quasi-experiment attempted to measure vocabulary acquisition at a very early stage of learning of a given word, which affects the aspects of word knowledge that can be acquired (see section 2.2.1.). In fact, it may be that much knowledge that was acquired from exposure to pop songs could not even be assessed with the present research methodology. Earlier findings by Brown, Waring and Donkaewbua (2008: 158) suggest that

> the nature of vocabulary learning from extensive reading or listening is more complex than can be determined from this study. Indeed, it suggests that a considerable amount of vocabulary knowledge was gained from the exposure, but was not assessed. Such knowledge might include the noticing of lexical phrases, collocational and colligational patterns, new nuances of meanings, improved lexical access speed, and so on. It is probably here that the true benefit of reading and listening extensively occurs.

Similar conclusions can also be drawn for this study because the activity of listening to and engaging with English pop songs outside school may have led to the noticing of new phonological forms that were not remembered or contributed to practice effects for words that had been heard previously. While such a fine-grained analysis of word knowledge is not possible yet, the results of the present study are very encouraging.

In addition to the outcome of the quasi-experiment, the results of the lexical analysis suggest that the characteristics of the ten target songs used in this research project are comparable to other pop songs because they are similar to the findings of Murphey (1990a & 1992b), who analysed the top 50 songs in English in 1987 (see section 4.4.). Although Murphey's analysis might appear to be rather outdated nowadays, it is the only comparable study of pop song lyrics available. In the present study the average type-token ratio (TTR) per target song is 0.27, which is very similar to the average TTR of 0.29 found by Murphey (1992b: 771). Murphey (1992b: 772) further calculated that the average number of words per minute in songs was 75.49,

whereas in this study it is 116.59, which suggests that songs texts were sung considerably more slowly in 1987 than they are nowadays. In general, however, the results of the two analyses are very similar, which suggests that the ten target songs represent a typical sample of pop songs.

In summary, research question 1 can be answered positively because the results of the questionnaire show that all learners listen to English pop songs outside school and the analysis of the data from the vocabulary tests of the quasi-experiment reveals that students acquired vocabulary incidentally by listening to and engaging with English pop songs. Having established that the phenomenon of incidental vocabulary acquisition from pop songs in out-of-school contexts does indeed occur, the second research question asks which factors influence incidental vocabulary learning from pop songs. Again corresponding research hypotheses were formulated: hypotheses 3 and 4 refer to two major factors, which are listening to English pop songs and engaging with their lyrics, and hypothesis 5 covers many potential impact factors. As has been mentioned in section 1.2., research question 2 is more exploratory in nature and therefore the results concerning the hypotheses 3, 4 and especially 5 should be regarded as tentative as well.

Hypothesis 3 ($H_3$) states that there is a difference between intermediate Austrian EFL learners who listen to English pop songs and those who do not with regard to their vocabulary knowledge. It was investigated by combining the results from the questionnaire and the quasi-experiment and conducting additional statistical tests (see section 6.4.1). For this hypothesis the variables 'chart liking' and 'time spent listening to music' are of particular importance, but a significant effect did not emerge for either of the two.[55] A Mann-Whitney test did not show any statistical significant difference between those students who reported to like the charts and those who did not. Unfortunately, the number of participants who stated not to like the charts was very small (N=6), which might have influenced the results of the test. The small group size also made it unfeasible to use the learners who reported not to like the charts as a post-hoc control group, as had been proposed prior to the experiment. Besides, Spearman rank order correlations showed no statistically significant correlations for

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[55] All tests of statistical difference and all correlations were calculated for the respective variable in relation to the overall pre- and post-test scores.

either time spent listening to music per week or per day.[56] Consequently, hypothesis 3 is not supported by the present data and has to be rejected for the moment. It is, however, important to take into account that the number of students who did not like the charts or who did not listen to music almost every day was very small indeed (see section 6.1.) and therefore this study does not provide sufficient information to completely reject this hypothesis. As a consequence, future studies could find very different results.

Hypothesis 4 (H₄) is concerned with a second main influencing factor and suggests that there is a difference between intermediate Austrian EFL learners who engage with the lyrics of English pop songs and those who do not with regard to their vocabulary knowledge. The testing of this hypothesis again draws on the combination of results (see section 6.4.1) and especially on the analysis of the text-related factors 'reading of transcriptions of English lyrics' and 'reading of translations of English lyrics'. Yet, when calculating Spearman rank order correlations for these two variables no statistically significant correlations were found. Furthermore, the questionnaire data show that overall few students regularly read transcriptions or translations of English pop songs (see section 6.1.) and thus issues of sample size may also be of relevance here. In any case, the findings indicate that for those Austrian learners who participated in the present study written transcriptions or translations of English pop song lyrics did not promote vocabulary learning.

In addition, the use of vocabulary learning strategies in combination with English song lyrics does not have a statistically significant impact either. A Mann-Whitney test did not show any statistically significant difference between those students who reported using VLS and those who do not. The analysis of the questionnaire (see section 6.1.) indicates that nearly half of the participants (47.4%) do not commonly apply VLS to pop songs and that the most common strategy seems to be inferring from context. However, the error analysis suggests that this strategy is particularly prone to mistakes because many students inferred wrong meanings from song texts (see section 6.3.3.). In fact, Schmitt (1997: 209) points out that while inferring from context can be a good strategy to discover new word meanings, it also has

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[56] The variable 'time spent listening to music per week' uses the answers to closed questionnaire item 2d, while the variable 'time spent listening to music per day' has been derived from the open follow-up item to item 2d.

prerequisites (cf. Nation 2001: 240–250). For textual inferencing to be successful, learners need a certain level of language proficiency in order to decode the orthographic and phonological form of new lexical items correctly. Moreover, they need background knowledge to guess the word's meaning and strategic knowledge to be able to apply the strategy effectively. Besides, not every text lends itself to textual inferencing since the context must contain sufficient clues to enable guessing the meaning of new words. It may be that the texts of the target pop songs are not rich enough with contextual clues to render inferring from context possible; it is certainly understandable that learners guessed the meaning of the word *edge* to be '*top'* or '*climax'* in the song "The Edge of Glory".[57] Yet, the students' language proficiency might have played an even greater role because it emerged as a potentially important factor in the follow-up item to the questions on the reading of transcriptions and translations. The main argument of the students who reported not to read song texts was that they found it to be unnecessary because they claimed to understand the lyrics anyway (see section 6.1.). This could actually be an overestimation on the part of the learners, but their statement is corroborated by the fact that in the analysis of influencing factors the comprehension of English lyrics, the comprehension of individual words in these and the attempt to understand words in song texts were found to be correlated positively and statistically significantly with the vocabulary pre- and post-test scores (see section 6.4.1.). In particular the correlation with the post-test scores reached a very high level of statistical significance ($p<0.001$) for all three variables and the correlation coefficients indicate moderate relationships with medium effects. Consequently, it seems that language proficiency and particularly listening comprehension are crucial factors for the incidental acquisition of new vocabulary from sources of oral input such as pop songs. A closer analysis of the questionnaire data revealed further that all the students who viewed reading translations as unnecessary attend the AHS, which indicates a first difference between the two school types.

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[57] The lyrics of the song include phrases such as „I'm gonna run right to, to the edge with you / Where we can both fall far in love" or "I'm on the edge of glory and I'm hanging on a moment with you / I'm on the edge with you."

On the whole, these results show that hypothesis 4 ($H_4$) is not supported by the data in its original version because students who engage with the lyrics of pop songs by reading transcriptions of translations did not acquire more vocabulary than others. Yet, the learners' comprehension of English lyrics and the effort to understand them were found to have a significant impact and thus 'engagement with lyrics' should be redefined as actively attempting to understand the lyrics of pop songs in their original oral versions. This revised version of hypothesis 4, which can be accepted on the basis of the present data, states that there is a difference between intermediate Austrian EFL learners who <u>actively</u> engage with the lyrics of English pop songs and of those who do not with regard to their vocabulary knowledge. The finding that the active endeavour to understand a song text is more advantageous than the passive reading of a translation could be related to the concepts of depth of processing (Craik and Lockhart 1972) and involvement load (Laufer and Hulstijn 2001). A few students (N=7) from both schools even reported to consciously make an effort to understand to pop songs in order to learn something new or to test their English skills. While such statements are certainly pleasing from a teacher's point of view, they may also raise questions about the incidentality of vocabulary learning in this context. However, as stated in section 2.1.2., incidental learning may involve both implicit and explicit processes (Rieder 2003: 28) and if an interest arises, conscious efforts to understand the meaning of a word are not excluded in incidental learning situations. Still, for the majority of learners listening to pop songs during their leisure time will surely be listening for pleasure rather than listening for learning. Vocabulary learning in out-of-school contexts is therefore unplanned, the by-product of a pleasure-focused activity and unintentional for most adolescents. Even if a few students intentionally use pop songs to learn or test their English skills from time to time, they will certainly not always consciously focus on language aspects. As a consequence, vocabulary learning from pop songs outside school should be regarded as incidental learning overall with the possibility of some learners intentionally focusing on interesting input features. Since in accordance with Hulstijn (2001: 275) I consider incidental and intentional learning to be complementary and mutually beneficial processes, deliberate attention to new words is seen as a welcome supplement to the mainly incidental learning of vocabulary from pop songs.

In addition, the combined analysis of factors influencing incidental vocabulary acquisition revealed that a certain level of L2 proficiency is necessary to understand

the lyrics and to be able to use vocabulary learning strategies such as textual inferencing. In fact, Nation (2001: 233) states that at least 95% of the words in a given text need to be known to enable successful guessing from context while reading, and 98% appear to be an optimal level of pre-knowledge for textual inferencing. Although Milton (2009: 54-48) points out that fewer words seem to be necessary to understand oral communication, learners surely need a certain amount of previous vocabulary knowledge to benefit from incidental vocabulary acquisition depending on the difficulty of the text. In the case of pop songs the necessary amount of previous vocabulary knowledge varies: most lyrics are actually rather simple as found by Murphey (1990a), but some use a great deal of slang words or more sophisticated vocabulary that most learners are unfamiliar with.

A relation between listening skills, language proficiency and vocabulary knowledge has also been shown by empirical studies. In a study by Vidal (2003)[58] EFL proficiency was correlated significantly to listening comprehension of academic lectures and had a significant impact on vocabulary gains because students with higher language proficiency learned more words than others. In a later study which compared listening and reading (Vidal 2011) language proficiency was also found to be of relevance because the difference between the two skills decreased as EFL proficiency increased. Results from a research project by Smidt & Hegelheimer (2004: 536) indicate that higher proficiency learners use more diverse listening strategies (cf. Vandergrift 2008) than lower proficiency students and thus are not only able to comprehend more, but may also acquire more vocabulary. Hence, there is a substantial amount of research evidence that language proficiency influences comprehension of oral input and incidental vocabulary learning resulting from it.

The last hypothesis $H_5$ is concerned with the exploratory analysis of possible influencing factors on incidental learning and states that there are several other independent variables which influence the incidental acquisition of passive vocabulary knowledge from pop songs by intermediate Austrian EFL learners. Like hypotheses 3 and 4, hypothesis 5 was tested through additional tests of statistical difference and Spearman rank order correlations, which combined the results from the questionnaire and the quasi-experiment (see section 6.4.).

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[58] For a more detailed discussion of these studies see section 2.3.3.

Of the learner-related factors the variables sex, school type, language background and stays in English-speaking countries had an impact on the vocabulary test scores. The difference according to sex is less relevant because it was only found for the pre-test, on which boys performed significantly better than girls. In contrast, the difference between school types, which has already been mentioned above, is an important aspect because the results of two statistical tests show that AHS students outperformed HS students on both vocabulary tests. Besides, statistically significant differences for both the pre- and the post-test also emerged for language background with native speakers of German achieving higher scores, and for previous stays in English-speaking countries with those who had been to English-speaking countries performing significantly better. However, one has to be extremely careful not to attribute causes in correlational research (Cohen et al. 2011a: 56–58) and in this case it seems that the variables which were found to have an impact on test scores may actually reflect other underlying influences. One plausible candidate for such an underlying impact factor is general EFL proficiency, which has been discussed above. Since all learners with a native language other than German except one attend the HS and since most learners who have been to English-speaking countries attend the AHS, it is likely that these variables interact with the difference between school types, and all of them may reflect a difference in English language proficiency between HS and AHS students. In fact, such a divergence would reflect the difference between compulsory secondary education (HS) and academically oriented secondary schools (AHS) in Austria. A second factor which could be mirrored in these findings is the impact of socioeconomic aspects, which are known to influence academic achievement. The AHS is a private school in a rural part of Upper Austria, whereas the HS is a compulsory school located in a small town. Hence, students in the two schools may differ quite markedly with regard to factors such as parents' level of education, family income and learning support, but since no data have been collected on these aspects in the present study, these are mere assumptions not based on facts.

In addition to these learner-related influences, music-related factors may also play a role. Astonishingly, the only musical aspect that is related positively to vocabulary test scores is the catchy tunes phenomenon, which shows a significant correlation with the post-test score. All other aspects like chart liking, musical training, parallel activities or active musical engagement with pop songs through singing were not

found to have an impact, although issues of sample size and variance may have influenced these results (see section 6.4.1.). The correlation between catchy tunes and post-test results is particularly intriguing because in the questionnaire more than 90% of participants state that they experience catchy tunes often or almost always. Murphey (1990b: 116–117 & 1990b) calls this the song-stuck-in-my-head phenomenon and relates it to involuntary verbal rehearsal and Krashen's notion of the "din in the head". He suggests that songs may facilitate mental rehearsal and could be used to help things "to stick in our minds" (Murphey 1990b: 61). Although Murphey's line of argumentation appears to be rather out-dated by now, the main premise of his theoretical considerations is highly interesting and since the results of the present study, as well as those of a previous study by Smith Salcedo (2002: 103–105), indicate that catchy tunes may indeed have an impact, this phenomenon warrants further empirical investigation.

The relevance of text-related factors such as the comprehension of lyrics, the reading of transcriptions and translations, and the use of VLS have mostly been discussed above with regard to hypothesis 3. The only aspect that has not been commented on yet is the students' opinion on the overall importance of lyrics. The majority of students (47.3%) judged text to be a rather important element of a pop (see section 6.1.), but no positive correlation between this variable and the scores of the vocabulary tests was found.

Finally, the influence of intrinsic factors of songs, lyrics and target words was also investigated (see section 6.4.2.). Overall song recognition was found to correlate strongly with the pre- and post-test scores and also with song liking. In general, song recognition was rather high, which is an important prerequisite because students need to be familiar with songs in order to learn from them. Interestingly, the figures for song liking do not necessarily coincide with song recognition, although the two variables are positively correlated. This finding is supported by a series of experiments by Peretz, Gaudreau and Bonnel (1998), who examined the influence of exposure effects on music recognition and liking. They discovered that prior knowledge of musical stimuli had significant effects on both familiarity judgements and on musical preferences. Furthermore, the authors also found a plateau effect for music liking (Peretz et al. 1998: 898), similar to prior research in other domains. This effect, which states that after a number of presentations the exposure effects on liking reach a maximum and do not increase any further, could also be observed in

the present study. The results further suggest that preference may actually decrease if a song is heard too often because the songs with the highest recognition only reached medium values for song liking. With regard to vocabulary acquisition it seems, however, that familiarity with songs is a relevant factor, while musical preference is not. Similarly, in a web-based research project by Beasley and Chuang (2008: 7–8) (see section 2.3.5.) analyses revealed no correlation between song likeability and improvement in vocabulary level scores. For song understandability only a very weak correlation was found, which did however account for a small but significant proportion of vocabulary learning in a subsequent regression analysis (Beasley and Chuang 2008: 9). Song understandability was not measured as a separate variable in the present study, although it was of course taken into account in the selection of target songs (see section 5.3.).

Concerning the intrinsic properties of lexical target items, factors that seem to have promoted the acquisition of individual words are frequency of occurrence in the song, occurrence in the title of a song, information provided by the context of the lyrics, phonological similarity for L2 words, orthographic similarity for L1 words and analysis of word parts in combination with previous word knowledge. However, only tentative conclusions can be drawn since methodological issues render it difficult to detect obvious patterns of learnability. Still, from the error analysis typical problems such as confusion of phonologically similar L2 words and orthographically similar L1 words, wrong inferences from song texts, and incorrect analysis of word parts could be inferred (see section 6.3.3.) and these certainly had an impact on incidental vocabulary acquisition. Some of these factors, like phonological and orthographic form, length of word, frequency in the input or availability of contextual cues, are also mentioned in Ellis and Beaton (1993) and Ellis (1999) (see section 2.2.2.). In addition, in a questionnaire study by Summer (2010: 324–325) written form and spelling also emerged as relevant factors. Clearly, orthographic form is especially important in written vocabulary tests and the testing of aural word knowledge in a written form certainly constitutes a limitation of the present research project. Nonetheless, it is surprising that orthographic similarities between English target words and German words led to such a high amount of errors. For instance, 19 students translated the English word *tone* as German *Tonne*, which means *barrel*, although the correct German translation *Ton* is a cognate of the English target item. One reason that could explain this frequent confusion is the hypothesis that new L2

words are initially "coded as phonological or orthographical extension of L1 lexical entries (Hulstijn 2001: 261), but based on the results of the present study no detailed statements can be made.

In summary, the results concerning research question 2, which regards the factors influencing incidental vocabulary learning, show that a variety of different aspects have an impact on incidental vocabulary learning from pop songs. However, time spent listening to music and chart liking have not been found to be of relevance and hypothesis 3 is therefore not supported by the present data. Similarly, the engagement with transcriptions and translations of English song lyrics as well as the application of vocabulary learning strategies to pop songs do not seem to exert any significant influence and thus the original version of hypothesis 4 has to be rejected as well. However, comprehension of lyrics while listening to pop songs, comprehension of single words in these and the attempt to understand song texts appear to promote vocabulary learning. Consequently, it seems that <u>active</u> engagement with lyrics influences incidental vocabulary learning and a revised version of hypothesis 4, stating that there is a difference between intermediate Austrian EFL learners who <u>actively</u> engage with the lyrics of English pop songs and of those who do not with regard to their vocabulary knowledge, is supported by the results of the study. In addition, it was found that this applies especially to learners with a higher level of English proficiency. Finally, the exploratory analysis of hypothesis 5 suggests that many independent variables can have an impact on lexical learning. With regard to learner-related factors sex, school type, language background and stays in English-speaking countries are of significance according to the data, and of the music-related factors the catchy tune phenomenon emerged as relevant. Impact factors intrinsic to songs, lyrics and target words are overall song recognition, frequency of occurrence in the song, occurrence in the song title, phonological similarity to other target language words and orthographic similarity to German words, analysis of word parts, contextual clues provided by the lyrics and previous vocabulary knowledge. At this point it is crucial to emphasize once again, that these findings are of a very tentative nature and are only meant to provide first insights about possible influencing factors. Several aspects that could potentially have an impact on incidental learning have not been assessed in this study and limitations of method and sample size as well as the correlational research design make it impossible to draw more detailed conclusions.

## 7.2. Implications for learning and teaching English

Research question 3 is concerned with possible consequences of this study for teaching and learning practices in Austria. If incidental vocabulary acquisition from pop songs in out-of-school contexts can indeed be demonstrated the following question needs to be asked: which conclusions for English language learning and teaching can be drawn from the findings? Since the results of the quasi-experiment point to the fact that incidental vocabulary acquisition from pop songs actually occurs (see section 7.1.), this section presents some suggestions on how this learning effect could be exploited for language learning and teaching.

As has been discussed extensively in chapter 4, nowadays foreign language input, especially with regard to English, is not limited to school contexts anymore. A number of European research projects (cf. Berns et al. 2007; Grau 2009; Kuppens 2010; Verspoor et al. 2011) have shown that teenagers are exposed to a considerable amount of English language input outside school through the use of popular media. These experts further agree that out-of-school language input has beneficial effects on language learning, but that this valuable resource is currently not used in language classrooms (see section 4.2.). Berns, de Bot and Hasebrink (2007: 115) summarize the impact of the additional exposure to English outside school concisely in the following statement:

> The omnipresence of English in the lives of young people and the diversity of functions this language serves them has substantial consequences for language teaching. As has been shown very clearly in this study, school is but one source of contact with English – and at least for some groups not the most important one.

Grau (2009: 172) also concludes that

> [g]iven the great variety of uses of English in teenage youth cultures in Germany today, it is high time that educators acknowledge these as ways of achieving competencies in English, which may be taken up and refined in school.

In accordance with these experts I argue that teachers need to become aware of the beneficial effects of out-of-school English input and of ways to exploit it for language learning purposes. The findings of the empirical study presented in this thesis demonstrate that incidental vocabulary acquisition from English pop songs outside school does indeed occur and thus that intermediate language learners can already profit from out-of-school input. Admittedly, vocabulary gains from incidental learning are not usually very high, and neither are they in the present study, but as Nation

(2001: 238) points out: "Small gains become large gains if learners do large quantities of reading [or listening]" (my comment). Since most participants of this study reported to listen to pop songs almost every day and since most of the songs are English, learners are actually exposed to large quantities of English input. Moreover, the qualitative analysis of the results (see section 6.3.3.) indicates that pop songs are clearly not the only source of out-of-school English input and that students also learn from other media such as computer games, websites, television programmes or movies.

Vocabulary learning from pop songs and other English media can be encouraged and promoted in simple ways; exploiting pop songs for language learning purposes does not necessarily mean that they have to be taught at school, to which many teachers object because of limited class time (cf. Murphey 1992a: 8). Instead, teachers can raise the awareness about the amount of English words that we are exposed to on a daily basis by rendering the link between 'school English' and 'real-world English' explicit. For instance, they could connect new words to the titles of songs, movies or computer games, provide examples of the use of English words in everyday contexts in Austria, or ask students if they know what English words that teenagers frequently use actually mean.[59] A prerequisite for this type of awareness-raising activities is that teachers have a certain amount of knowledge of current youth culture. In many cases this is easier to achieve than most adults believe because almost everyone picks up pieces of information such as the title of the summer hit or of a particularly popular movie, but it is probably easier for younger teachers or those who are interested in such things. Yet, even if teachers do not possess the necessary knowledge to establish connections between current youth culture and new English vocabulary themselves, they can still simply let their students find them. For instance, learners can do simple homework projects such as collecting unknown English words in pop songs, movie titles, product names or advertising slogans and bring them to class. A 'word of the day' feature, for which the students have to take to turns in finding English vocabulary outside school, can be introduced or a class

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[59] These can be very simple examples, for instance almost every teenager in Austria has heard of the annual music festival called 'Frequency', but few of them actually know what the English word means. The same is most probably true for the internet platform 'Twitter' or other English words that are commonly used among adolescents.

vocabulary log for out-of-school vocabulary can be kept. Additionally, presentations about favourite pop songs including information on the lyrics and the artist could be used instead of book reviews for a change, or short activities such as looking at the current charts and finding out what the song titles mean could be incorporated in a lesson if there is time, particularly because many course books already include a thematic unit on pop music. The above list certainly does not make any claims to completeness, but it only serves to demonstrate that there are many simple ways and ideas to make students aware of the fact that nowadays English is all around us.

In addition, teachers should provide their students with listening and reading strategies to enhance comprehension of out-of-school input as well as with vocabulary learning strategies to promote incidental vocabulary acquisition. Schmitt (2000: 121) argues that "words not explicitly focused upon can be learnt incidentally from exposure, facilitated by the use of vocabulary learning strategies" and Kuppens (2010: 80) also points out that

> an important mission for teachers of English as a foreign language lies in providing pupils with skills, strategies and viewing behaviors that optimize their incidental language acquisition from media exposure outside the classroom.

Additionally, appropriate use of vocabulary learning strategies could prevent problems such as wrong inferences from context or incorrect translations because of orthographic and phonological similarities to other L1 or L2 words, which were found to be the source of frequent errors in the present study (see section 6.3.3.). Furthermore, students could be encouraged to actually collect new words once they have discovered their meaning because finding out what a word means does not entail that it will be remembered. In the present study only three learners reported to use follow-up strategies (see section 6.1.) and thus teachers could start working on this aspect together with their students. In brief, teachers should attempt to make their students aware of how much English they are exposed to and use on a daily basis, and how they can benefit from it concerning language and especially vocabulary learning.

One caveat that language teachers have to be careful about though is the fact that telling students to use their leisure activities for language learning purposes can also be counterproductive. Kuppens (2010: 80) stresses the fact that the association with 'fun' leisure activities is one of the reasons of adolescents' positive attitudes towards English, and thus warns that "when educators attempt to formalize incidental

learning, they might well inhibit it". Consequently, teachers must try not to take the fun out of incidental learning from out-of-school input by giving projects or pieces of homework related to English outside school a playful character, for instance. Pop songs and other popular media should not primarily be regarded as sources of vocabulary acquisition, but as students' pastimes which offer a chance to supplement regular English lessons with more enjoyable activities.

In her study among German teenagers Grau (2009) even found that some learners were absolutely against the idea of using topics from their free time in school. The arguments of this small group of students included their "distrust of teachers, who should not be allowed to know too much about their students' private lives" (Grau 2009: 169) and the generation gap between teachers and learners. In contrast, the participants of the present study who were opposed to the use of pop songs in school rather complained about the senselessness of such activities or a lack of interest in pop music. However, as in Grau's study, the majority of students would welcome the use of pop songs in school (see section 6.1.).

What the negative reactions of some of students show is that working with pop songs or other topics from their free time does not appeal to all learners. In fact, the use of English language media, which evidently include pop songs, is itself just one vocabulary learning strategy among others (cf. Schmitt 1997: 216 and section 2.2.3.), and as such it is not equally useful in every context or for every learner. Likewise, the effectiveness of learning with the help of music may vary between learners as well; for instance de Groot (2006) found that background music did not enhance learning for all students. Hence, the use of pop songs for language learning will not result in miraculously high gains in language proficiency or vocabulary knowledge, but it will work well for some learners and less well for others.

In conclusion, researchers agree that English input in out-of-school contexts can enhance language acquisition and the present study has shown that, for instance, listening to English pop songs can lead to incidental vocabulary learning. As a result, language teachers' awareness about the influence of this additional exposure to English outside school needs to be raised, even if they then decide not to use any of the media or topics in class (cf. Grau 2009: 171). Furthermore, teachers should make their students aware of these rather enjoyable learning resources and encourage them gently to use them. Of course, learners cannot be forced to use their leisure

activities for language learning purposes, and as has been argued above, this could actually have exactly the opposite effect. In addition, it has to be kept in mind that learning from pop songs and other popular media is not an equally suitable approach for everybody. Still, since learners of English as a foreign language have the advantage of receiving additional foreign language exposure outside school, their teachers should finally begin to use this out-of-school input for language and especially vocabulary learning and "construct bridges between pupils' contacts with English inside and outside the classroom, and thus between intentional and incidental language acquisition" (Kuppens 2010: 80).

# 8. Conclusion

The purpose of the empirical study presented in this thesis was to investigate incidental EFL vocabulary acquisition from pop songs in out-of-school contexts. Among the foreign languages commonly taught in Austria and other European countries English is in a privileged position because it is the only language to which students regularly have access outside school. In addition, pop music appears to be an ideal source of vocabulary learning because it connects foreign language input with learners' personal interests and enjoyment. Furthermore, songs combine music and language, which may aid the comprehension of verbal information and support its retention in long-term memory. Hence, the present study has attempted to ascertain whether incidental vocabulary acquisition from pop songs does actually occur outside school and whether any conclusions can be drawn for English vocabulary teaching practices. This chapter briefly summarizes the main findings of the study and their wider implications before commenting on the limitations of this research project. Finally, some suggestions for future research will be offered.

## 8.1.  Summary of main findings

The central concern of the present study was to investigate the following research question:

> Do Austrian EFL learners of intermediate proficiency acquire passive vocabulary knowledge incidentally by listening to and engaging with English pop songs outside school?

With the help of an elaborate research methodology combining a quasi-experiment using a repeated-measures design with no control group with a survey and a lexical analysis of song texts in a mixed methods approach, I have been able to answer research question 1 affirmatively.

Research hypothesis 1 states a necessary prerequisite for the occurrence of incidental learning from pop songs in out-of-school contexts:

> $H_1$: Intermediate Austrian EFL learners listen to English pop songs outside school.

The results of the questionnaire show that the 74 learners who participated in this research project spend a substantial amount of their leisure time listening to music. Furthermore, the largest proportion of the songs they listen to is in English. Therefore, hypothesis 1 is supported by the data and the precondition for accepting

the second hypothesis has been fulfilled. This second hypothesis constitutes the main hypothesis of the study:

> H$_2$: Intermediate Austrian EFL learners who listen to and engage with English pop songs and their lyrics outside school will be able to translate English lexical items which they have not been taught but which occur in English pop songs into German or provide a synonym for them.

The statistical analysis of the scores of the vocabulary pre- and post-test of the quasi-experiment revealed that there is indeed a statistically significant difference between the results of the two tests with the mean post-test score being significantly higher than the mean pre-test score. Since statistical significance was achieved even when controlling for possible confounding influences of the research methodology, hypothesis 2 has been accepted. Consequently, the main result of the present study is that intermediate Austrian students do in fact acquire vocabulary knowledge incidentally from pop songs outside school.

Having established that the phenomenon of incidental vocabulary acquisition from pop songs in out-of-school contexts does indeed occur, research question 2 then concerns potential impact factors:

> Which factors influence the incidental acquisition of vocabulary from pop songs?

Hypothesis 3 and 4 focus on two aspects that were expected to have a particularly great effect on incidental lexical learning from pop songs:

> H$_3$: There is a difference between intermediate Austrian EFL learners who listen to English pop songs and those who do not with regard to their vocabulary knowledge.
>
> H$_4$: There is a difference between intermediate Austrian EFL learners who engage with the lyrics of English pop songs and those who do not with regard to their vocabulary knowledge.

While hypothesis 3 is not supported by the present data because neither the liking of the charts nor the amount of time spent listening to music appear to influence incidental vocabulary acquisition from pop songs, hypothesis 4 presents a more difficult issue. The original expectation with regard to H$_4$ was that students who read transcriptions and translations of English pop songs would achieve higher vocabulary gains, but this expectation has not been confirmed by the data. Instead, the comprehension of the lyrics in the original sung version of the pop songs and the

effort to understand them have been found to correlate positively with the vocabulary test scores. Hence, a revised version of hypothesis 4 is proposed, which can be accepted on the basis of the data of the empirical study:

$H_4$: There is a difference between intermediate Austrian EFL learners who <u>actively</u> engage with the lyrics of English pop songs and of those who do not with regard to their vocabulary knowledge.

Lastly, hypothesis 5 is concerned with the exploratory analysis of additional impact factors:

$H_5$: There are several other independent variables which influence the incidental acquisition of passive vocabulary knowledge from pop songs by intermediate Austrian EFL learners.

Of the many factors that have emerged as having an impact on incidental vocabulary learning from pop songs, only the most salient ones will be mentioned here. With regard to learner variables a marked difference between the two school types HS and AHS has been found. This factor also appears to interact with the variables 'language background' and 'previous stays in English-speaking countries'. Of the music-related aspects only the catchy tune phenomenon seems to have facilitated incidental learning and many different intrinsic factors of songs, lyrics and target words appear to influence lexical learning. For instance, overall song recognition, frequency of occurrence in the song, occurrence in the song title, phonological and orthographic similarity to German and other target language words, contextual clues provided by the lyrics and previous vocabulary knowledge have been found to have an effect. These results are, however, only of a tentative nature and are meant to offer first insights about potential influencing factors.

Finally, research question 3 refers to wider implications of the results of the present study:

Which conclusions for English language learning and teaching can be drawn from the findings?

Several consequences of the outcomes of this study and of the omnipresence of English in out-of-school contexts have been discussed in section 7.2. and only the most important points will be reiterated here. The main conclusion to be drawn from the results of this and previous research projects is that English teachers need to become aware that the exposure to English outside school influences language learning. Adolescents regularly receive additional English input by listening to pop

songs or using other media during their leisure time and as the present study has shown, they can indeed incidentally learn vocabulary from these. However, only if teachers are conscious of such learning effects, can they encourage their learners to use these great resources and teach them appropriate strategies to enhance incidental learning from out-of-school input.

In conclusion, the empirical study presented in this thesis has shown that Austrian teenagers are exposed to a considerable amount of English through pop songs almost every day and that incidental vocabulary acquisition from pop songs is indeed possible. This finding has direct implications for the teaching and learning of vocabulary, which should focus more explicitly on the effects of out-of-school English input.

## 8.2. Limitations

The present study has attempted to fill an apparent research gap by investigating the previously overlooked phenomenon of incidental EFL vocabulary acquisition from pop songs in out-of-school contexts. Since there were, however, no previous studies that could be built upon, several limitations also have to be considered.

A research design combining a quasi-experiment, a survey and a lexical analysis of song texts has been devised especially for this project, but in retrospect several improvements could have been made with regard to methodology. The major issue here is the testing of oral word knowledge in a written form, which constitutes a problem because a recent study (Milton et al. 2010) has found that phonological and orthographical word knowledge may actually be stored in different mental lexica (see section 2.2.1.). Besides, a more practical consequence of this test format was that participants frequently confused target words with other orthographically similar words. In hindsight such problems could potentially have been avoided, if the target words had simply been read out during the experimental sessions because then learners would have been reminded of both their phonological and orthographic form.

Further limitations are due to two unusual features of the quasi-experiment because no traditional treatment phase and no control group could be used because of the nature of the phenomenon under investigation, as has been pointed out in section 5.1. As a result, a variety of independent variables cannot be controlled for and no direct comparisons can be made between an experimental group and a control group. Moreover, some aspects of learning could not be measured in the quasi-

experiment; for instance, the fact that some students already referred to the lyrics of the target pop songs in the pre-test is not mirrored in the quantitative figures (see section 6.3.3.).

In addition, the quasi-experiment and the survey both rely on self-report data, which could potentially distort the results. However, surveys commonly use self-report data which cannot be verified by the researcher (cf. Berns et al. 2007; Grau 2009) and other studies have used self-report scores from the Vocabulary Knowledge Scale to measure vocabulary learning (cf. Vidal 2003 & 2011).

Finally, the result of the present study cannot be generalized to other learning situations because of the relatively small sample size and the small number of target words. Neither can they be transferred to other foreign languages because English is in a privileged position with regard to out-of-school input.

## 8.3. Suggestions for future research

The empirical study presented in this thesis has only been the first step in closing the research gap concerning incidental vocabulary learning from pop songs and other sources of oral input. More research projects are needed to evaluate popular beliefs about vocabulary learning from oral input and to analyse the factors that promote incidental learning in real-life contexts. With regard to these real-life contexts, research on the influence of out-of-school language exposure on foreign language acquisition appears to be a particularly promising area and could produce highly interesting results.

Generally, research on vocabulary acquisition would benefit from more sophisticated research designs for the testing of oral word knowledge and instruments that allow a more fine-tuned measuring of lexical knowledge would be desirable, but the design of such tools certainly presents a great challenge. Concerning vocabulary learning from pop songs a follow-up study to the present research project, which could incorporate the above suggestions for improving the research design and include a larger sample of students as well as more target words, could help to further investigate this intriguing phenomenon and to generalize the findings to a wider population.

Finally, applied linguistics research on incidental vocabulary acquisition from oral input or from exposure to English in out-of-school contexts also needs to take the practical implications of empirical studies into account. Therefore, action research projects on the implementation of findings in real-world school contexts could be of great value, for instance on methods of using out-of-school language input for EFL vocabulary teaching.

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# Appendices

## Appendix 1: Test booklet

Nummer: _____

# Forschungsunterlagen
# Diplomarbeitsuntersuchung
# Englisch
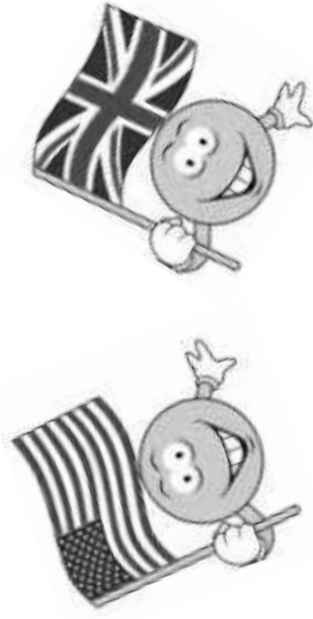
## Vokabelaufgaben

Liebe Schülerin, lieber Schüler!

Auf den folgenden Seiten befinden sich 14 Vokabelaufgaben, die genauso wie die Beispielaufgabe auf der nächsten Seite aussehen. Dies ist kein Test, die Ergebnisse werden nur für meine Forschung verwendet und haben keinen Einfluss auf deine Schulnote!

Für jedes Wort sollst du bitte ankreuzen, ob du es kennst und ob du weißt was es bedeutet. Wenn du Kategorie C, D oder E auswählst, dann fülle bitte auch die leere Zeile aus.

Bitte fülle die Aufgaben **sorgfältig** und **alleine** aus! Schau nicht was deine Nachbarin oder dein Nachbar angekreuzt oder hingeschrieben hat!

Damit alle gleich viel Zeit haben, werden wir immer gemeinsam umblättern. Ich bitte dich **nur dann umzublättern, wenn du das Glockensignal hörst!**

**Beispielaufgabe**

Hier steht das Wort, um das es geht!

| | Wort |
|---|---|
| A | Ich kann mich nicht erinnern, dieses Wort schon einmal gehört oder gesehen zu haben. |
| B | Ich habe dieses Wort schon einmal gehört oder gesehen, aber ich weiß nicht, was es bedeutet. |
| C | Ich habe dieses Wort schon einmal gehört oder gesehen und ich glaube es bedeutet: _____ |
| D | Ich kenne dieses Wort. Es bedeutet: _____ |
| E | Ich kann dieses Wort auch in einem Satz verwenden: _____ _____ *Wenn du hier einen Satz schreibst, fülle bitte auch Kategorie D gleich darüber aus.* |

**ACHTUNG:**
**Wenn du Kategorie E auswählst, dann fülle bitte auch Kategorie D aus!**

**Aufgabe 1a**

| | a blade |
|---|---|
| A | Ich kann mich nicht erinnern, dieses Wort schon einmal gehört oder gesehen zu haben. |
| B | Ich habe dieses Wort schon einmal gehört oder gesehen, aber ich weiß nicht, was es bedeutet. |
| C | Ich habe dieses Wort schon einmal gehört oder gesehen und ich glaube es bedeutet: _____ |
| D | Ich kenne dieses Wort. Es bedeutet: _____ |
| E | Ich kann dieses Wort auch in einem Satz verwenden: _____ <br><br> _____ <br><br> *Wenn du hier einen Satz schreibst, fülle bitte auch Kategorie D gleich darüber aus.* |

3a a clover
4a a blur
5a screwed
6ato skip
7a a price tag
8a breathless
9a a scar
10a an edge
11a a tone
12a bulletproof
13a to ricochet
14a to deny

**Aufgabe 2a**

| | to toss |
|---|---|
| A | Ich kann mich nicht erinnern, dieses Wort schon einmal gehört oder gesehen zu haben. |
| B | Ich habe dieses Wort schon einmal gehört oder gesehen, aber ich weiß nicht, was es bedeutet. |
| C | Ich habe dieses Wort schon einmal gehört oder gesehen und ich <u>glaube</u> es bedeutet: |
| D | Ich kenne dieses Wort. Es bedeutet: _____ <br> _____ <br> Ich kann dieses Wort auch in einem Satz verwenden: _____ <br> _____ |
| E | *Wenn du hier einen Satz schreibst, fülle bitte auch Kategorie D gleich darüber aus.* |

## Fragebogen

Liebe Schülerin, lieber Schüler!

Bitte beantworte die folgenden Fragen ganz **ehrlich**! Es gibt keine richtigen oder falschen Antworten, weil es um deine persönliche Meinung geht. Also fülle den Fragebogen bitte **alleine** aus und schaue nicht, was deine Nachbarin oder dein Nachbar angekreuzt oder hingeschrieben hat!

Kreuze bei den Fragen bitte immer **nur ein Kästchen** an, außer es steht dort, dass mehrere Antworten möglich sind! Bitte fülle auch die **offenen Fragen** aus!

Wenn du eine Frage nicht verstehst oder sonst irgendetwas unklar ist, dann **frag mich bitte**!

In diesem Teil kannst du **alleine umblättern**, aber bitte warte auf der letzten Seite, bis dass alle anderen auch fertig sind!

## 1. Angaben zur Person

**Geschlecht:** ☐ weiblich ☐ männlich

**Alter:** _____

**Muttersprache(n):** _____

**Andere Sprachen, die du sprichst:** _____

_____

**Warst du schon in englischsprachigen Ländern?**

☐ Ja ☐ Nein

**Wenn ja, wie lange und wo?** _____

_____

## 2. Musikkonsum

**2a. Hörst du gerne Musik?**

☐ Ja, ich höre gerne Musik, weil _____

☐ Nein, ich höre nicht gerne Musik, weil _____

**2b. Welche Art(en) von Musik hörst du gerne?**

_____

_____

**2c. Magst du die Musik, die derzeit in den Charts ist?**

☐ Ja  ☐ Nein

Warum (nicht)? _____

**2d. Wie oft hörst du Musik?**

☐ Fast jeden Tag  ➔  Wie lange? ca. _____ Stunden

☐ Mehrmals pro Woche  ➔  Wie oft? ca. _____ Mal

☐ Selten

☐ Fast nie

**2e. Wann und wo hörst du meistens Musik?**

_____

_____

**2f. Machst du andere Dinge während du Musik hörst?**

☐ Fast immer  ☐ Oft  ☐ Selten  ☐ Fast nie

**Wenn du Dinge nebenbei machst, was machst du?**

*Gib bitte Beispiele an!*

_____

_____

**2g. Hörst du Radiosender?**

☐ Fast immer  ☐ Oft  ☐ Selten  ☐ Fast nie

**Wenn du Radiosender hörst, welche?** _____

_____

**2h. Schaust du Musiksender im Fernsehen?**

☐ Fast immer  ☐ Oft  ☐ Selten  ☐ Fast nie

**Wenn du Musikkanäle siehst, welche?** _____

_____

**2i. Siehst du dir oft Musikvideos of Youtube an?**
☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

**2j. In welchen Sprachen hörst du Songs?**

*Bitte schreibe die Sprachen auf!*

_____

_____

**2k. In welchen Sprachen hörst du am häufigsten Songs?**

1. am häufigsten: _____

2. am zweithäufigsten: _____

3. am dritthäufigsten: _____

**3. Selbst Musizieren**

**3a. Ich singe gerne.**
☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

**3b. Ich singe mit bei Songs, die ich kenne.**
☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

**3c. Ich spiele Karaoke-Spiele (z.B. SingStar, We Sing, …)**
☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

**3d. Ich habe Songs im Kopf („Ohrwurm").**
☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

**3e. Spielst du ein oder mehrere Instrumente (oder hast du eines gespielt) ?**
☐ Ja, und zwar _____
☐ Nein.

**Wenn ja, hast du schon einmal Songs aus den Charts auf einem Instrument gespielt?**
☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

**4. Songtexte**

**4a. Wie wichtig ist dir der Text von Songs aus den Charts?**
☐ Sehr wichtig ☐ Ziemlich wichtig
☐ Nicht so wichtig ☐ Überhaupt nicht wichtig

**4b. Verstehst du englische Songtexte, wenn du Songs aus den Charts hörst?**
☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

**4c. Verstehst du einzelne Wörter in englischen Songtexten, wenn du Songs hörst?**
☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

**4d. Versuchst du die Wörter in englischen Songtexten zu verstehen?**
☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

☐ Ja, und zwar _____

**4f. Welche dir unbekannten Wörter, die in Songs vorkommen, versuchst du zu verstehen?**

*Bitte kreuze alle Antworten an, die auf dich zutreffen!*

☐ Wörter, die mir wichtig für den Inhalt des Songs erscheinen

☐ Wörter, die besonders oft in einem Song vorkommen

☐ Wörter, die mir bekannt vorkommen

☐ andere Wörter: _____

☐ gar keine

**4g. Liest du die Songtexte von englischen Songs aus den Charts?**

☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

**Warum liest du die Songtexte bzw. warum nicht?**

*Bitte kreuze alle Antworten an, die auf dich zutreffen!*

☐ Weil ich verstehen möchte, worum es in den Songs geht.

☐ Weil mir ein Song besonders gut gefällt.

☐ Weil ein Song von bestimmten Stars ist, die mich besonders

interessieren.

☐ Andere Gründe: _____

---

**Warum versuchst du Wörter zu verstehen bzw. warum nicht?** *Bitte kreuze alle Antworten an, die auf dich zutreffen!*

☐ Weil ich verstehen möchte, worum es in den Songs geht.

☐ Weil ich es schwierig finde, die Texte zu verstehen.

☐ Weil es mir zuviel Aufwand ist.

☐ Weil es mir egal ist, worum es in den Songtexten geht.

☐ Andere Gründe _____

**4e. Wenn du ein englisches Wort aus einem Song nicht verstehst, was machst du dann?**

*Bitte kreuze alle Antworten an, die auf dich zutreffen!*

☐ Ich schaue im Wörterbuch oder online nach.

☐ Ich frage jemanden, was das Wort bedeutet.

☐ Ich versuche das Wort aus dem Zusammenhang heraus zu verstehen.

☐ Ich überlege, ob ich ein ähnliches Wort kenne.

☐ Ich überlege, ob es in einer anderen Sprache, die ich kann, ein ähnliches Wort gibt.

☐ Ich mache meistens gar nichts.

**Wenn ja, machst du dann noch etwas mit diesen Wörtern (z.B. Aufschreiben, etc)?**

☐ Nein.

**4h. Liest du auch deutsche Übersetzungen von englischen Songtexten?**

☐ Fast immer ☐ Oft ☐ Selten ☐ Fast nie

**Warum liest du Übersetzungen der Songtexte bzw. warum nicht?**

☐ Weil ich verstehen möchte, worum es in den Songs geht und dies auf Deutsch einfacher ist als auf Englisch.

☐ Weil mir ein Song besonders gut gefällt.

☐ Weil ein Song von bestimmten Stars ist, die mich besonders

interessieren.

☐ Andere Gründe: _____

## 5. Popsongs in der Schule

**5a. Habt ihr schon einmal Popsongs im Englisch Unterricht verwendet?**

☐ Ja.

☐ Nein.

**5b. Sprecht ihr manchmal über Popsongs im Englisch Unterricht?**

☐ Ja.

☐ Nein.

**5c. Würdest du gerne Popsongs und ihre Songtexte im Englisch Unterricht behandeln?**

☐ Ja

☐ Nein

**Warum bzw. warum nicht?** *Bitte schreibe die Gründe auf!*

_____

_____

_____

# Bitte NICHT umblättern!

Bitte warte bis
alle fertig sind!

**Vokabelaufgaben**

Liebe Schülerin, lieber Schüler!

Auf den folgenden Seiten findest du wieder Vokabelaufgaben, die genauso aussehen wie die Aufgaben im ersten Teil.

Zusätzlich wirst du nun **kurze Ausschnitte aus englischen Songs** hören. Jeder Ausschnitt wird einmal angehört und du sollst kurz ankreuzen, ob du diesen Song kennst und ob du ihn magst. Diese Tabelle sieht immer so aus, wie die auf der nächsten Seite.

Damit alle gleich viel Zeit haben, werden wir nun wieder gemeinsam umblättern. Ich bitte dich **nur dann umzublättern, wenn du das Glockensignal hörst!**

**Song 1**

| **Kennst du diesen Song?** | |
|---|---|
| A | Ich habe dieses Lied noch nie gehört. |
| B | Ich kenne dieses Lied, aber ich weiß nicht wie es heißt |
| C | Ich kenne diese Lied, es heißt _____ und ist von _____ |

| **Magst du diesen Song?** | |
|---|---|
| ☐ Ja, sehr gerne | ☐ Ja, gerne. |
| ☐ Geht so. | ☐ Nein, gar nicht. |

**Aufgabe 1b**

| | a blade |
|---|---|
| A | Ich kann mich nicht erinnern, dieses Wort schon einmal gehört oder gesehen zu haben. |
| B | Ich habe dieses Wort schon einmal gehört oder gesehen, aber ich weiß nicht, was es bedeutet. |
| C | Ich habe dieses Wort schon einmal gehört oder gesehen und ich glaube es bedeutet: _____ |
| D | Ich kenne dieses Wort. Es bedeutet: _____ |
| E | Ich kann dieses Wort auch in einem Satz verwenden: _____ _____ *Wenn du hier einen Satz schreibst, fülle bitte auch Kategorie D gleich darüber aus.* |

**Aufgabe 2b**

| | to toss |
|---|---|
| A | Ich kann mich nicht erinnern, dieses Wort schon einmal gehört oder gesehen zu haben. |
| B | Ich habe dieses Wort schon einmal gehört oder gesehen, aber ich weiß nicht, was es bedeutet. |
| C | Ich habe dieses Wort schon einmal gehört oder gesehen und ich glaube es bedeutet: _____ |
| D | Ich kenne dieses Wort. Es bedeutet: _____ |
| E | Ich kann dieses Wort auch in einem Satz verwenden: _____ *Wenn du hier einen Satz schreibst, fülle bitte auch Kategorie D gleich darüber aus.* |

**Followed by items 3b-14b and extracts from the respective target songs**

→ Song 2
3b a clover
→ Song 3
4b a blur
5b screwed
→ Song 4
6b to skip
→ Song 5
7b a price tag
→ Song 6
8b breathless
9b a scar

→ Song 7
10b an edge
→ Song 8
11b a tone
12b bulletproof
→ Song 9
13b to ricochet
→ Song 10
14b to deny

# Vielen Dank für deine Mithilfe!

**Appendix 2: Information sheet**

Liebe Eltern!

Ich heiße Marlene Schwarz und studiere Lehramt Englisch und Italienisch an der Universität Wien. Im Rahmen meiner Diplomarbeit möchte ich ein wissenschaftliches Experiment mit Schülerinnen und Schülern der 4. Klasse durchführen. Zu diesem Zweck wird die Klasse Ihrer Tochter oder Ihres Sohnes von mir Aufgaben zu Vokabeln und einen Fragebogen bekommen. Diese sind anonym und die Ergebnisse der Untersuchung werden ausschließlich für meine Forschungsarbeit verwendet. Dies bedeutet, dass die Resultate keinerlei Einfluss auf die Schulnoten Ihres Kindes haben werden.

Durch die Teilnahme leistet Ihr Kind einen wichtigen Beitrag für eine wissenschaftliche Untersuchung und ich bitte daher auch Sie um Ihre Unterstützung. Sollten Sie nicht mit der Teilnehme Ihres Kindes einverstanden sein, so vermerken Sie dies bitte schriftlich und teilen Sie es dem Klassenvorstand mit.

Herzlichen Dank für ihre Unterstützung!

Mit freundlichen Grüßen,

Marlene Schwarz

## Appendix 3: Subsidiary analysis of the Austrian charts

| Charts | English | German | French | Portuguese | unknown | |
|---|---|---|---|---|---|---|
| **07.10.2011** | | | | | | |
| Top 10 | 8 | 1 | | | 1 | |
| 10-20 | 5 | 3 | 1 | 1 | | |
| 20-30 | 8 | 2 | | | | |
| 30-40 | 10 | | | | | |
| **Sum** | 31 | 6 | 1 | 1 | 1 | 40 |
| **%** | 77,5 | 15 | 2,5 | 2,5 | 2,5 | 100 |
| **14.10.2011** | | | | | | |
| Top 10 | 7 | 2 | | | 1 | |
| 10-20 | 7 | 1 | 1 | 1 | | |
| 20-30 | 7 | 3 | | | | |
| 30-40 | 7 | 2 | 1 | | | |
| **Sum** | 28 | 8 | 2 | 1 | 1 | 40 |
| **%** | 70 | 20 | 5 | 2,5 | 2,5 | 100 |
| **13.01.2012** | | | | | | |
| Top 10 | 9 | 1 | | | | |
| 10-20 | 7 | 2 | | 1 | | |
| 20-30 | 8 | 2 | | | | |
| 30-40 | 9 | 1 | | | | |
| **Sum** | 33 | 6 | 0 | 1 | 0 | 40 |
| **%** | 82,5 | 15 | 0 | 2,5 | 0 | 100 |
| **20.01.2012** | | | | | | |
| Top 10 | 8 | 1 | | 1 | | |
| 10-20 | 8 | 2 | | | | |
| 20-30 | 8 | 2 | | | | |
| 30-40 | 6 | 4 | | | | |
| **Sum** | 30 | 9 | 0 | 1 | 0 | 40 |
| **%** | 75 | 22,5 | 0 | 2,5 | 0 | 100 |
| **Total sum** | **122** | **29** | **3** | **4** | **2** | 160 |
| **Total %** | **76,25** | **18,125** | **1,875** | **2,5** | **1,25** | 100 |

## Appendix 4: Abstracts and curriculum vitae

## Abstract

There is a common belief among teachers and researchers that a large part of the vocabulary that students need to know in order to achieve fluency in a foreign language is acquired through incidental learning. Empirical work in this field has concentrated strongly on the effects of extensive reading and there is surprisingly little research on incidental vocabulary acquisition from oral input. This study constitutes an attempt to bridge this apparent research gap by investigating incidental vocabulary learning from a previously overlooked source of oral input: English pop songs. Adolescents in Austria and elsewhere are exposed to a substantial amount of English input through pop music during their leisure time and this additional foreign language exposure may have a positive impact on vocabulary learning. Furthermore, the learning of verbal text in combination with melody has been shown to have beneficial effects on speech comprehension and verbal memory and therefore the combination of music and language in pop songs may further promote language learning. The study presented in this thesis empirically investigates whether Austrian EFL learners acquire vocabulary knowledge incidentally by listening to and engaging with English pop songs outside school. The research methodology, which was devised especially for this project, combines a quasi-experiment using a repeated-measures design with a survey and a lexical analysis of song texts in a mixed methods approach. 74 students attending the 8th grade in either a Hauptschule or Gymnasium participated in this study. Results show that all participants like listening to music and that English is the most frequent language of songs. Moreover, a significant difference was found between the vocabulary pre-test and post-test scores in the quasi-experiment, which indicates that incidental vocabulary acquisition in out-of-school contexts does indeed occur. These findings suggest that English input through popular media such as pop songs can enhance vocabulary learning and should thus be considered more centrally in English teaching in Austria.

## Zusammenfassung

Unter SprachforscherInnen und LehrerInnen ist die Annahme weit verbreitet, dass ein Großteil des für flüssigen Fremdsprachengebrauch notwendigen Wortschatzes durch inzidentelles Lernen erworben wird. Empirische Studien in diesem Forschungsfeld haben vor allem den Einfluss von extensivem Lesen untersucht, doch gibt es erstaunlich wenige Forschungsprojekte zu beiläufigem Wortschatzerwerb von auditivem Input. In der vorliegenden Studie wird versucht, diese Forschungslücke zu schließen, indem eine bisher nicht erforschte Quelle auditiven Inputs untersucht wird: englische Popsongs. Viele Jugendliche in Österreich und anderen Ländern beschäftigen sich in ihrer Freizeit regelmäßig mit Popsongs und sind daher einer beträchtlichen Menge an zusätzlichem Englisch-Input ausgesetzt, was einen positiven Einfluss auf ihr Vokabelwissen haben könnte. Überdies haben neurokognitive Forschungsprojekte gezeigt, dass das Lernen von verbalem Text in Verbindung mit einer Melodie sowohl das Sprachverständnis fördern, als auch die Behaltensleistung für verbalen Text erhöhen kann. Aus diesem Grund kann die Verbindung von Musik und Sprache in Popsongs als zusätzlich unterstützender Faktor für den Spracherwerb angesehen werden. Die vorliegende Studie untersucht empirisch, ob österreichische SchülerInnen durch das Anhören von und die Beschäftigung mit englischen Popsongs außerhalb der Schule beiläufig Vokabel lernen. Die Forschungsmethode, welche speziell für dieses Projekt konzipiert wurde, kombiniert ein Quasi-Experiment mit Messwiederholung in derselben Versuchsgruppe mit einer Befragung und einer lexikalischen Analyse von Popsongtexten im Rahmen des Mixed-Methods-Ansatzes. 74 SchülerInnen, die die achte Schulstufe in einer Hauptschule oder in einem Gymnasium besuchen, nahmen an dieser Studie teil. Die Ergebnisse zeigen, dass alle teilnehmenden SchülerInnen gerne Musik hören und Englisch die häufigste Sprache von Popsongs ist. Außerdem wurde ein statistisch signifikanter Unterschied zwischen der durchschnittlichen Punktezahl des Pretests und des Posttests des Quasi-Experiments gefunden, was bedeutet, dass inzidenteller Wortschatzerwerb von Popsongs außerhalb der Schule tatsächlich stattgefunden hat. Diese Ergebnisse zeigen, dass Input durch englische Medien, wie zum Beispiel durch Popsongs, einen positiven Einfluss auf das Vokabelwissen der SchülerInnen ausüben kann und daher verstärkt im österreichischen Englischunterricht berücksichtigt und eingebunden werden sollte.

# Curriculum vitae

| | |
|---|---|
| **Angaben zur Person** | |
| Name | **Marlene Christiane Schwarz** |
| Staatsangehörigkeit | Österreich |
| Geburtsdatum | 09.01.1989 |
| **Ausbildung** | |
| Zeitraum | Seit Oktober 2007 |
| Bildungseinrichtung | Universität Wien |
| Studienrichtung | **Lehramtsstudium Unterrichtsfach Englisch und Unterrichtsfach Italienisch** |
| Schwerpunkte | Applied linguistics (Second language acquisition, English language teaching), Sociolinguistics (language attitudes) Linguistica e glottodidattica italiana |
| Vorträge | Präsentation im Rahmen der 3. Österreichischen Studierendenkonferenz der Linguistik (ÖSKL) (Dezember 2010): "Attitudes of Austrians towards gender-inclusive language forms in written German" |
| | Präsentation im Rahmen der 4. ÖGSD Nachwuchstagung (Mai 2012): "Learning by listening – Incidental vocabulary acquisition from pop songs" |
| Zeitraum | September 2009 - Februar 2010 |
| Bildungseinrichtung | Università di Bologna, Italien |
| Studienrichtung | Erasmus Auslandsstudienaufenthalt |
| Schwerpunkt | Studium der italienischen Linguistik, Literatur und Kulturkunde |
| Zeitraum | September 2003 - Juli 2007 |
| Bildungseinrichtung | Adalbert Stifter Gymnasium, ORG der Diözese Linz |
| Schwerpunkt | Allgemeines Oberstufengymnasium mit musikalischem Schwerpunkt |
| **Relevante Berufserfahrungen** | |
| Zeitraum | Seit September 2011 |
| Beruf oder Funktion | Studienassistentin am Institut für Anglistik und Amerikanistik, Universität Wien |
| Name des Arbeitgebers | Institut für Anglistik und Amerikanistik, Universität Wien |
| Zeitraum | Juli - August 2010 und 2011 |
| Beruf oder Funktion | Campbetreuerin und Englischlehrerin auf Englisch Sommercamps |
| Name des Arbeitgebers | English For Kids®, Köstenbauer OG |
| Zeitraum | November 2010 – Jänner 2011 |
| Beruf oder Funktion | Englischtrainerin im Rahmen eines Englisch Auffrischungskurses (Erwachsenenbildung) |
| Name des Arbeitgebers | Institut EWI, Wien |
| Zeitraum | Oktober 2007 - Februar 2009 |
| Beruf oder Funktion | Nachhilfelehrerin für Englisch und Italienisch |
| Name des Arbeitgebers | Schülerhilfe Enns |