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ACC	accusative
AFF	affectée
AG	agent
DAT	dative
DEPR	deprivée
DO	direct object
DOC	double object construction
eME	early Middle English
eModE	Early Modern English
GEN	genitive
IO	indirect object
lME	late Middle English
lModE	Late Modern English
ME	Middle English
PDE	Present Day English
PO	prepositional (indirect) object
POC	prepositional object construction
*prep*REC	prepositional recipient argument
*prep*TH	prepositional theme argument
OE	Old English
REC	recipient
TH	theme

'Nothing in [linguistics] makes sense except in the light of evolution'
(Theodosius Dobzhansky, 1973)

1. Introduction

This thesis reconstructs, describes, and attempts to explain the historical emergence of the so-called 'dative alternation' in English, which is illustrated in (1):

(1) a. John *gave* **Mary**$_{REC}$ a book$_{TH}$
b. John *gave* a book$_{TH}$ **to Mary**$_{REC}$[1]

What alternates in the alternation is the position and the syntactic encoding of the recipient-like argument (such as *(to) Mary*$_{REC}$ in the examples above). It can either be expressed as a noun phrase (*Mary*$_{REC}$) that precedes the theme (i.e. *a book*$_{TH}$) as in (1a), or as a prepositional phrase (*to Mary*$_{REC}$) that follows the theme as in (1b).

Inquiring into the past of this phenomenon is worthwhile for the following reason: the complementation pattern(s) occurring with ditransitive verbs such as *to give*, *to send*, or *to sell* in Present Day English have been studied extensively within the linguistic community. Among other things this is because they constitute "a popular test case for theories of argument structure and the syntax-semantics interface" (Colleman & De Clerck 2011: 186). While Present Day English (PDE) ditransitives have been researched exhaustively, however, the history of these verbs and of the construction(s) available to them has only rather recently begun to receive attention (cf. Allen 1995; McFadden 2002; De Cuypere 2010, 2015a, 2015c; Colleman 2011; Colleman & De Clerck 2011; Wolk et al. 2013; Yáñez-Bouza & Denison 2015; *inter alia*). In particular, a number of issues in the diachronic development of the forms, such as the range of verb classes associated with ditransitive constructions at earlier times, or the fate of non-prototypical ditransitive verbs, still need to be described on the basis of empirical data.

The present thesis attempts to do so by reconstructing and describing the development of ditransitives from a corpus of Middle English. For the purposes of explanation, it combines a construction grammar framework with an understanding of languages as essentially historical systems, whose consituents exist because they have been successfully transmitted among speakers and speaker generations. It thus takes an evolutionary approach to language and langue change, in which the notions of competition and cooperation between form-meaning mappings are of central importance. The main contribution of the thesis is that it furthers our understanding of the Present Day English dative alternation and its features by providing a historical explanation for it. It thereby demonstrates that taking a diachronic perspective to a synchronic phenomenon is in general highly fruitful.

[1]If not indicated otherwise, all examples were either invented or drawn from various corpora (PPCME2, COCA, BNC) by me. In all examples, the verb will be marked by italics, while the REC-argument is in bold, and the theme is underlined.

Furthermore, the thesis takes an innovative approach to language change in merging two theoretical frameworks and in applying two different methodologies, namely corpus analysis and evolutionary game theory.

1.1. The phenomenon

English ditransitives – defined here as constructions involving a verb and three semantic roles, namely an agent argument (AG), a recipient-like argument (REC), and a theme (TH) – are certainly among the most widely studied constructions in the linguistic literature, and there is a wide range of different approaches to various properties of the patterns. As already pointed out, the most prominent issue that is typically discussed is the dative alternation, i.e. the ability of most ditransitive verbs to appear in both a 'synthetic' double object construction (DOC) and an 'analytic' prepositional construction with *to*, as illustrated in (1a-b) above. As mentioned, the examples also indicate that the choice of construction types typically correlates with a choice of word order, in that the theme either follows the recipient or precedes it. While the former order is prototypically associated with the DOC (1a), the latter is the common order for the *to*-prepositional object construction (*to*-POC (1b). [2]

In this thesis, the emergence and establishment of the dative alternation in the history of English will be at the centre of attention. In general, the notion that the DOC and the *to*-POC are 'in alternation' is taken to imply a strong and transparent relation between them. As will be shown, this relationship is established by the fact that the correspondences between the constructions are highly systematic and that productivity and priming effects between the constructions seem to hold.

A similarly close connection has been observed to exist between the DOC and a prepositional pattern involving *for* (*for*-POC), as in (2). This phenomenon is usually referred to as the 'benefactive alternation' (Theijssen et al. 2010: 115; also Kittilä 2005). When reference to both alternations is intended, the superordinate term 'ditransitive alternation(s)' will be used in the present thesis.

(2) a. John *baked* **Mary**$_{REC}$ a cake$_{TH}$

b. John *baked* a cake$_{TH}$ **for Mary**$_{REC}$

[2]The terminology used in this thesis differs from that of some other accounts of ditransitives in PDE or earlier stages. For example, Goldberg (1995) and others following her, use 'ditransitive' to refer exclusively to the DOC, while leaving the *to*-POC unlabelled. A further term frequently used to refer to either the DOC, the *to*-/*for*-POC, or both, in PDE is 'dative' (cf. e.g. Bernaisch, Gries & Mukherjee 2014; Campbell & Tomasello 2001; Davidse 1996; Emonds 1993; Green 1974; Polinsky 1998; Wierzbicka 1986, among others). I prefer to avoid this, however, since "there [clearly] is no overt dative case in English [anymore]" (Jackendoff 1990: 195; cf. also Jespersen 1927: 278). My use of 'dative' is thus strictly limited to discussions of case morphology in earlier periods of English. Even then, however, dative cannot be equated with the semantic function of RECIPIENT, since this role could be expressed by various cases, and dative case was in turn not restricted to RECIPIENTS (within ditransitive constructions). A list of terms as used by various authors can be found in Gerwin (2014: 7-8, fn5).

The strong relationship between the members of the dative (benefactive) alternation distinguishes the *to*-POC (*for*-POC) from other prepositional paraphrases as well, whose association with the DOC is less systematic and much weaker, even though they also share the semantics of the DOC to a certain degree (cf. the alternative periphrases in [(*3*a-b]).

(3) a. John *cast* **Mary**$_{REC}$ a glance$_{TH}$ – John *cast* a glance$_{TH}$ **at Mary**$_{REC}$

b. John *asked* **Mary**$_{REC}$ a favour$_{TH}$ – John *asked* a favour$_{TH}$ **of Mary**$_{REC}$

These patterns are subsumed under the umbrella term 'prepositional object construction' (POC) in the present thesis; in analogy to the *to*-POC and *for*-POC, the specific preposition type involved is simply added to the term in cases where it is necessary and relevant to distinguish between the various prepositions. For example, (3a) illustrates an *at*-POC, meaning that REC is marked by the preposition *at*, while (3b) represents an *of*-POC. To refer to the PP alone, the label '*prep*REC' is used; the generic 'prep' can here again be substituted by the specific prepositions (e.g. *to*REC or *of*REC).

Although the evolution of these alternative POCs (whose frequency and semantic range were significantly greater in earlier periods than in PDE) will be shown to differ markedly and in many respects from that of the *to*-POC, however, the study of their fate is deliberately included in this thesis. This represents a major methodological difference to most extant work on ditransitives in English. As will be demonstrated, the inclusion of their development facilitates the understanding both of the diachronic development of the patterns and of the status of the alternation in PDE. In particular, it brings the specific status of the *to*-POC into sharp focus, and thereby helps to account for the phenomenon that represents the main focus of this thesis, namely the emergence and the history of the dative alternation in the narrow sense (i.e. the alternation involving the *to*-POC).

1.1.1. Ditransitives in Present Day English

Present Day English ditransitives have been frequently adduced in theoretical arguments and have been approached from various perspectives. Both their formal and their functional characteristics have received a great deal of attention. Among the issues most relevant to the present thesis are first and foremost the question of what the term 'dative alternation' actually refers to, and connected to this, the question of how large the functional/semantic overlap between the two constructions involved in it actually is. As will be shown below, these are also the main points of interest in constructionist accounts, where the DOC (and its prepositional paraphrase) feature prominently.

In general, one problem that has repeatedly and abundantly been discussed in the literature is the nature of the two arguments/objects involved in ditransitive events; here, it has been noted that apart from assuming different semantic roles, they also show striking asymmetries in their syntactic behaviour. For example, in the DOC the theme-argument is not usually accepted as the subject of a passive clause (4), in contrast to the recipient-argument. With the *to*-POC, on the other hand, the exact

opposite holds: while the TH-argument can felicitously be used as a passive subject in this case, the use of REC as a subject is markedly more awkward (5).

(4) a. **Mary**$_{REC}$ *was given* a book$_{TH}$

b. ?A book$_{TH}$ *was given* **Mary**$_{REC}$

(5) a. ?**To Mary**$_{REC}$ *was given* a book$_{TH}$

b. A book$_{TH}$ *was given* **to Mary**$_{REC}$

For this and other reasons, the arguments are typically said to fulfil different syntactic functions or grammatical roles in the clause: while the REC-argument takes the role of 'indirect object', the TH-argument functions as the 'direct object' of a verb.[3] Thus, the TH-argument in ditransitive constructions is usually taken to correspond closely to direct objects of mono-transitive verbs, whereas the REC-argument differs from them both syntactically and semantically (Huddleston & Pullum 2002: 250; cf. also Quirk et al. 1985: 727, n.[a]).[4]

Because of the syntactic (and possibly also semantic) differences between the REC-argument in DOCs and the prepositional recipient in the *to*-POC – such as the distinct ordering preferences, and the different degrees of passivisability as indicated above – it has also been debated whether they in fact qualify as alternatives of each other or not. This issue is of key relevance for this thesis, and importantly also ties in with the question whether the two constructions as a whole can be taken as roughly equivalent to each other. As will be shown below, my answer to this question is strongly affirmative: the first arguments in both constructions are argued to index the same semantic role, namely that of recipient, or a recipient-like participant. In addition, they are also assumed to serve the same syntactic role in the clause, i.e. that of indirect object. (The PP-recipients are nevertheless occasionally referred to as 'prepositional objects' (PO) in this thesis. This is, however, not intended as a statement on their status, but is only done in order to distinguish between the two types of REC-arguments where relevant). One of the major aims of this thesis is then to investigate whether this correspondence between the prepositional argument and the NP-argument in ditransitive constructions was always given, or rather only emerged at a certain point in the history of English.

Apart from the syntactic and semantic status of the individual parts of the constructions, the relationship between the members of the dative alternation, the DOC and the *to*-POC, has received much attention as well. While most accounts acknowledge that there is some link between the patterns, the precise nature of this link as well as the focus put on it differ quite substantially between

[3]Cf. Jespersen (1927); Quirk et al. (1985: 726-728); Barss & Lasnik (1986); Larson (1988); Jackendoff (1990); Hudson (1992); Polinsky (1998); Biber et al. (1999); Ozón (2009: 24, 39, 41-43); Huddleston & Pullum (2002: 249); Gerwin (2014: 10-11); among others.

[4]In the present thesis, I will largely stick to the practise of labelling semantic role instead of syntactic function, i.e. the first object of ditransitive verbs will consistently be referred to as the 'REC-argument' rather than as the 'indirect object', whereas the second object is mainly labelled 'TH-argument' instead of 'direct object'.

theoretical frameworks.[5] For example, functional or functionalist approaches have typically focused on investigating the discourse-pragmatic and semantic factors influencing or determining the choice of one construction over the other (Mukherjee 2005: 33). These studies suggest that the factors at play most prominently include the animacy or pronominality of the objects, their discourse-status or relative length (cf. De Cuypere 2015a: 227 for a comprehensive list of influential factors; also Gerwin 2014). While the DOC, for instance, is the preferred choice with animate, pronominal, given, definite etc. recipients, the *to*-POC is favoured when non-topical (inanimate, nominal, new, indefinite) recipients are involved. Although the specific factors that play a role in the choice between constructions as such are not investigated in this study, the fact that the DOC and *to*-POC therefore seem to stand in a complementary distribution in regard to discourse-pragmatic features is of great relevance to the argument that will be put forward.

In constructionist approaches, the members of the alternation are usually seen as independent, coexisting constructions, i.e. form-meaning pairs (e.g. Goldberg 1995). Although the constructions are supposed to be more or less semantically synymous, the relationship between them has long been considered an epiphenomenon of the large overlap in verbs found in the constructions. Accordingly, the alternation as such has long been paid little heed in this framework (Goldberg 1995: 89; cf. also Langacker 1991: 326; Goldberg 2002). More recent construction grammar accounts have, however, re-introduced a focus on the alternation and argue for a link between the constructions that is stronger than a mere partial paraphrase relationship (cf. e.g. Cappelle 2006; Perek 2012, 2015). As pointed out in the following, constructionist treatments of ditransitives are particularly interesting to the present thesis, since usage-based construction grammar constitutes one of its theoretical bases. I will here follow those constructionist accounts that emphasise the alternation in assuming an intimate connection to hold between the two constructions in Present Day English, and aim to explore when and more importantly how and why it came into being.

1.1.2. Ditransitives in the history of English

With regard to the historical development of the members of the dative alternation, the first thing to observe is that much has changed since the earliest attestations of English. Most significantly, the alternation was not yet present at all in Old English. It is of course true that certain ditransitive verbs and verb classes – such as dispossession verbs (*rob*) or communication verbs (*tell*) – could not only take two object NPs (typically in different cases), but could occur in prepositional constructions as well. However, no obvious and strong association between the DOC and the *to*-POC can yet be found in texts from this period (Cassidy 1938; De Cuypere 2013, 2015c). In addition, prepositional alternatives

[5]Cf. Mukherjee (2005: Ch.1) for an extensive overview of the treatment of ditransitives and the dative alternation in various frameworks.

to object noun phrases were not limited to *to* or *for* in Old English, but varied across and even within individual verb classes. This is evident from the examples in (*6*), which illustrate the use of a range of POCs other than *to* with verbs of dispossession such as *afyrran* 'take away' or *bereafian* 'steal, despoil'.

(6) a. *afyrde* **fram hire**$_{REC}$ […] <u>þa leohtnesse</u>$_{TH}$
'took the brightness away from her'
(Wærferth, Dial. Greg 288; Visser 1963: 633)

b. Ðu *afyrdest* **of Jacobe**$_{REC}$ <u>ða graman hæftned</u>$_{TH}$
'you took the troublesome captivity away of [from] Jacob'
(Ps. Th. 84, 1.; Bosworth-Toller, s.v. *a-fyrran*)

c. he him ageafe <u>þæt</u>$_{TH}$ he ær **on him**$_{REC}$ *bereafode*
'he restored him what he had before stolen on [from] him'
(Ors. 3, 11; S. 146, 30.; Bosworth-Toller, s.v. *be-reafian*)

The emergence of a clear and intimate link between precursors of the DOC and one particular prepositional periphrastic construction, namely that with *to*, is commonly set in Middle English. In this period, PP-patterns in general started competing with synthetic, i.e. inflectional, patterns and quickly increased in frequency (cf. e.g. Mustanoja 1960; McFadden 2002). Furthermore, the development is often seen as being linked to a number of other changes which took place around the same time (at the turn from Old to Middle English), such as the loss of case inflections and the gradual emergence of fixed word order. These major changes also strongly affected ditransitive constructions. Their impact becomes apparent if we compare Old English ditransitives to Present Day English ditransitives. Among the obvious differences are the following: first, not only one but various case frames or case patterns were still available for ditransitive verbs in Old English. Thus, REC and TH arguments could carry either genitive, accusative or dative case marking in a number of combinations. The sentences in (7) show some of these patterns, including the most frequent one, namely [DAT$_{REC}$-ACC$_{TH}$].

(7) a. *dældon* <u>heora æhta</u>$_{ACC\text{-}TH}$ **ealle þearfum**$_{DAT\text{-}REC}$
'distributed their belongings to all the poor'
(coaelive, ÆLS_[Basil]:54.479; taken from De Cuypere 2015a: 7)

b. Se Halga Gast **hie**$_{ACC\text{-}REC}$ <u>æghwylc god</u>$_{ACC\text{-}TH}$ *lærde*,
'The holy spirit taught them every good thing'
(Blickl. Homl. 12: 13121.1613; De Cuypere 2015a: 233)

c. **hine**$_{ACC\text{-}REC}$ <u>wædum</u>$_{DAT\text{-}TH}$ *bereafian*
'*to rob him his clothes'[6]
(ÆCHomI, 29 426.4; Allen 1995: 29)

d. and *forwyrnde* **him**$_{DAT\text{-}REC}$ <u>inganges</u>$_{GEN\text{-}TH}$
'and denied him the entry'
(coaelive, ÆLS_[Maur]:304.1673; De Cuypere 2015a: 232)

[6]Ungrammaticality will usually be marked with an asterisk (*) in this thesis, while questionable acceptability is indicated by a pre-posed <?>.

Similarly, the arguments of the prepositional construction featured a variety of case forms as well, although the most frequent frame was probably again [*prep*DAT_{REC}-ACC_{TH}], as in (8).

(8) & *sende* [. . .] <u>þis ærendgewrit</u>$_{ACC\text{-}TH}$ **him to**$_{DAT\text{-}REC}$,
'and sent this letter to him'
(coaelive, ÆLS_[Abdon_and_Sennes]:86.4777; De Cuypere 2015c: 8)

In contrast, in PDE there is no overt morphological case marking on the objects anymore, but both the DOC and the *to*-POC involve two uninflected NPs. Although traces of the old system are visible in the subject vs. object forms of personal pronouns (*he* vs. *him*), the indirect and direct objects of ditransitive verbs are not formally distinguished in any way. In other words, the general loss of inflectional morphology that hit the English language system at the turn to Middle English evidently affected the way in which ditransitive constructions could be expressed. It is plausible to assume that this may have triggered, or at least supported, the rise of prepositional patterns at the expense of the morphologically indistinct descendants of synthetic constructions such as the DOC (cf. e.g. Fischer 1992: 233; Allen 1995: 158; also Mustanoja 1960: 95).

Another difference reflects the fact that word order in Old English was generally freer than it is in PDE. That is to say, the order of the objects in the DOC was variable, with REC either preceding (9a) or following TH (9b) (cf. e.g. Fischer 1992: 370-382; Trips 2002).

(9) a. and þær *geoffrode* **Gode**$_{REC}$ <u>menigfealde lac</u>$_{TH}$
'and offered God manifold gifts there'
(Ælfric, AS Hom. 578; De Cuypere2010: 340)

b. Đu *cyðes*t […] <u>mildheortnysse</u>$_{TH}$ **ðinum ðeowan**$_{REC}$
'*you show mercy your servant'
(Ælfric, AS Hom. 146; De Cuypere2010: 340)

The same applied to the available Old English prepositional paraphrases, in which the PP-recipient could also take up practically any position in relation to the unmarked theme argument. While, for instance, the prepositional REC-argument in (8) above follows the theme, it precedes it in (10).

(10) min God **me**$_{REC\text{-}1}$ *asende* **to**$_{REC\text{-}2}$ sona <u>his engel</u>$_{TH}$,
'My God soon sent me his angel'
(coaelhom, ÆHom_11:343.1662; De Cuypere 2015c: 8)

Although PDE ditransitives of course still display variation concerning the constituent order, word order is now conditioned by the presence or absence of a relational (prepositional) marker on the REC-argument, instead of the arguments simply switching position. That is, the two members of the dative alternation are now complementarily associated with two different canonical orders. On the one hand, there is the DOC with a fixed [REC-TH] order (11a), and on the other hand, the *to*-/*for*-POC, where *prep*REC typically follows the nominal theme (11b).

(11) a. John *gave* **Mary**$_{REC}$ an apple$_{TH}$ vs. *John *gave* an apple$_{TH}$ **Mary**$_{REC}$

b. John *gave* an apple$_{TH}$ **to Mary**$_{REC}$ vs. *John *gave* **to Mary**$_{REC}$ an apple$_{TH}$

Despite the fact that they differ with regard to the order of the two objects within them, both constructions nevertheless show the same behaviour in respect to word order in the rest of the clause: both components of both constructions occur post-verbally and thus fit into the SVO order that has come to be fixed in English. This fixation of word order on the clause level and and with regard to object placement is also usually located in Middle English, and is similarly often related to the erosion of case morphology (cf. e.g. Allen 1995; De Cuypere 2010, 2015a, 2015c).

Finally, there are semantic differences that can be observed between Old English and PDE ditransitive constructions. In the case of the DOC, the Old English construction seems to denote a wide range of meanings that fall into the category of indirect affectedness. That is, the REC-argument typically refers to "an individual affected by a process or state which obtains in some part of his personal sphere" (Dąbrowska 1997: 68). This includes, for example, the semantic roles of addressee (communication verbs), but also those of deprivée (dispossession verbs) or affectée of a benefactive or malefactive action (cf. Colleman & De Clerck 2011; Rohdenburg 2007). Note that the label 'REC' is therefore also not limited to prototypical recipients in the earlier periods, but stands for the broad category of semantic roles involved here.

In PDE, in contrast, only some verb classes, such as verbs of transfer, intended transfer (9a above) or communication, are still perfectly acceptable in the construction, whereas the use of others, like verbs of dispossession (12a) or 'pure benefaction/malefaction' (12b-c), is ungrammatical.

(12) a. For dronkenesse *bireveth* **hym**$_{REC}$ the discrecioun of his wit$_{TH}$
'*for drunkenness robs him the discretion of his wit'
(CMCTPARS,316.C2.1212; M3)

b. *softe* **me**$_{REC}$ mi sar$_{TH}$
'*soften/alleviate me my pain'
(CMMARGA,62.120; M1)

c. *ibroken* **ham**$_{REC}$ þe schuldren$_{TH}$
'*broke them the shoulders'
(CMJULIA,114.303; M1)

Rather than expressing indirect affectedness of a participant, the prototypical PDE DOC refers, much more specifically, to the successful transfer of an entity to a recipient. This is also clear from the fact that it is most frequently instantiated by verbs like *give*, *sell*, or *hand* (Malchukov, Haspelmath & Comrie 2010: 2; also e.g. Goldberg 1995; Croft 2003; Stefanowitsch & Gries 2003).

We can therefore infer that in the course of Middle English and beyond, a noticeable reduction in the range of verb classes or meanings associated with the construction must have taken place, through which the DOC became more and more strongly linked to the concept of 'caused possession/ transfer'.

This decrease in associated meanings through the loss of (peripheral) sub-senses has recently been argued to constitute a case of constructional semantic narrowing. It is also thought to have been triggered by the loss of case marking at the transition from Old to Middle English, and by the rise of prepositional competitors to the older constructions (Colleman & De Clerck 2011: 183; cf. also Barðdal 2007; Barðdal, Kristoffersen& Sveen 2011).

The opposite development can be seen with the prepositional patterns: here, verb classes seem to have been added rather than lost (cf. e.g. verbs of refusal, which can be used in a *to*-POC in PDE, something they could not do in Old English). Thereby, the prepositions appear to have expanded in contexts of use and have taken on more general or wider meanings; for instance, *to* has come to index more abstract (animate) recipients in addition to spatial, concrete goals, while *from* now indexes abstract, animate deprivees as well as spatial sources.[7]

Thus, the establishment of the dative alternation as we know it from PDE seems to be closely related to a set of major changes that affected both the syntactic options and the semantics of ditransitive verbs. Although all of these changes were certainly already under way in Old English, they seem to have gained real momentum only in (early) Middle English. This is why the empirical focus of this thesis is on the Middle English period. Although the thesis is focused very specifically on the history of ditransitives and the emergence of the dative alternation, however, I hope to have shown that these phenomena cannot be seriously studied without taking broader developments in the English language into account, and without thereby reassessing them from a clearly defined perspective. The specific research questions the thesis attempts to answer are presented in the following section.

1.1.3. Research questions

The main research interest of this thesis is, as repeatedly mentioned, the diachrony of the dative alternation in English. That is to say, the most basic questions this thesis attempts to answer is when, how and why the PDE dative alternation came into being, and when, how and why its members came to have the particular formal and functional features they show today. This includes identifying which broader changes were involved in this development, and how they affected the constructions in question. This larger issue can be broken down into several smaller questions, namely the following:

i. When did the prepositional pattern appear, and how did it establish itself as an alternative to the DOC?
   - Which types of prepositional patterns (other than the *to*-POC) can be observed, and what role did they play in the development of the dative alternation?
   - Does the rise of the dative alternation correspond to the general increase of prepositional (and other analytic) patterns in the language in Middle English?

[7]This development has frequently been addressed in terms of grammaticalisation theory, with varying conclusions (Colleman & De Clerck 2009: 13).

ii. How did the loss of case marking affect the constructions in question, and is this process causally connected to the spread of prepositional ditransitives?

iii. Can we observe a semantic specialisation towards a basic meaning of transfer in the DOC in Middle English, and if so, can this development be linked to the other changes at hand, i.e. the loss of case marking, the increasing use prepositional patterns, and the emergence of the dative alternation?

iv. When, how and why did the complementary distribution of object orders in the dative alternation develop?

- How did the general fixation of clausal constituent order affect the members of the dative alternation?
- Are these changes related to the other processes at play around the same time, and if so, in what way?

Finally, the thesis attempts to answer whether and how the development of the dative alternation can be modelled in a joint framework of construction grammar and evolutionary linguistics, which I refer to as 'evolutionary construction grammar'. The two frameworks are introduced in the following sections, which will also give a brief outlook to the merged approach. – Since in contrast to evolutionary linguistics, no exhaustive general introduction to (diachronic) construction grammar will be included in the main parts of the thesis, the central principles of the latter approach will be discussed in some more detail already at this point.

1.2. Theoretical framework(s): construction grammar and evolutionary linguistics

Concerning theoretical framework, this study applies two distinct approaches to language and language change (and especially to changes in ditransitive complementation in the history of English), namely those of construction grammar and evolutionary linguistics. Usage-based construction grammar, as a bottom-up and decidedly data-driven approach to language, is used to identify and define the patterns in question. Regarding it as self-evident that the patterns which characterise or constitute languages are there because they have managed to replicate successfully, evolutionary linguistics is in contrast employed as an explanatory framework, in order to account for the emergence of variation and the success of individual variants. In the following sections, an outline of the main tenets of usage-based construction grammar and their implications for diachronic linguistics is given. Focusing first on the concepts of constructions and constructional networks, the chapter will afterwards briefly discuss the principle of usage-basedness. This is followed by a short introduction to evolutionary linguistics. The central aims in merging the two frameworks will be presented in the subsequent section (1.3).

1.2.1. (Diachronic) usage-based construction grammar

As Goldberg claims in the Oxford handbook of construction grammar, "the constructionist approach is the fastest growing linguistic and interdisciplinary approach to language" (2013: 30). It has generated

an already comparatively large body of literature on a variety of issues, including first/second language acquisition (e.g. Tomasello 2003; Ambridge & Lieven 2011; Diessel 2013; Ellis 2013), diachronic change (e.g. Hilpert 2013; Traugott & Trousdale 2013); morphology and syntactic theory (e.g. Fillmore, Kay & O'Connor 1988; Goldberg 1995, 2006; Croft 2001; Blevins 2001; Spencer 2001; Booij 2002a, 2005, 2013; Sag, Wasow & Bender 2003; Hoffmann 2013), as well as artificial intelligence research (e.g. Steels 1998, 2011b, 2012a, 2012b, 2013) and many others.

Most generally, constructionist approaches define themselves by delimitation from (mainstream) generative grammar. For example, they reject the assumption of an innate language faculty, and focus on language as reflecting domain-general cognitive processes (cf. Croft 2001; Goldberg 2006: 92, Ch.7, 9; 2013: 6, 23-25; Haspelmath 2008; Evans & Levinson 2009; Boas 2010; Traugott & Trousdale 2013: 3). Furthermore, language is considered to be non-componential, meaning that lexicon and syntax are not neatly separated, but rather form a continuum (Hoffmann & Trousdale 2013: 1; also Fillmore 1988; Jurafsky 1992; Goldberg 2003). In contrast to transformational or derivational grammars, the framework is also monostratal in that a distinction between surface/S-structure and deep/D-structure a là Chomsky (1981) is reputiated (e.g. Goldberg 2002, 2013: 20; Culicover & Jackendoff 2005; *inter alia*).

The most fundamental and most basic tenet of all constructionist approaches is that all linguistic units are "learned pairings of form and function", i.e. constructions (Goldberg 2013: 15-16). These constructions are assumed to be psychologically real entities, and are thought to be organised in a larger taxonomic network. A principle which is not followed by all construction grammar theories is usage-basedness, which stresses the importance of language use (and frequency in usage) and is closely linked to the framework of *exemplar theory* (as proposed by e.g. Pierrehumbert 2001; Bybee 2006, 2010, 2013).[8] Among the constructionist frameworks which explicitly adopt a usage-based approach are Cognitive Construction Grammar, Radical Construction Grammar, and Cognitive Grammar; some recent constructionist accounts emphasising this aspect include Traugott & Trousdale (2013), Hilpert (2014), Patten (2012) as well as Perek (2015). These are also the frameworks focused on in this thesis, since a bottom-up, data-driven account giving particular attention to the role of frequency in language representation and change is best compatible with the second framework chosen in this work, namely evolutionary linguistics. It also presents itself as the best choice considering the empirical approach taken in the project.

While construction grammar (in its many different versions) is a fairly well established framework in the theoretical linguistic landscape by now, applying constructionist ideas to historical linguistics and language change is a slightly more recent venture. However, diachronic construction grammar

[8]Goldberg (2013: 16) furthermore provides a list of "several additional tenets traditionally associated with Cognitive Linguistics", such as semantics being based on 'construals' of a situation by the speakers.

(DCxG)[9] has begun to prove increasingly productive in recent times. Even more so, the field "has experienced a dramatic explosion of interest" in the last two decades, as Traugott & Trousdale (2013: 39) assert. One of the earliest works to be mentioned in this context is Israel's (1996) explicitly constructionist account of the English *way*-construction, but since then, the field has been growing steadily and rapidly, with a large amount of publications on various theoretical aspects of the issue as well as applications to particular historical changes being found. An overview of work in diachronic construction grammar (even though certainly not exhaustive) is given in Traugott & Trousdale (2013: 39-40); some of the most recent additions to the body of literature include the relevant contributions in Bergs & Diewald (2008), Boogaart, Colleman & Rutten (2014) and Barðdal et al.'s (2015) edited volume *Diachronic Construction Grammar*. As will be briefly pointed out in the following, the main focus in this tradition has been on changes to parts of constructions (constructional change) and the emergence of new constructions (constructionalisation), as well as the relation between the latter and grammaticalisation and lexicalisation (cf. e.g. Noël 2007; Brems 2011; Patten 2012; Hilpert 2013; Traugott & Trousdale 2013: Ch. 3, 4).

In the next sections, I will give a short overview of the main principles of construction grammar and their implications for historical linguistics and diachronic change, starting with the concept of constructions, before moving on to constructional networks and entrenchment and productivity.

1.2.1.1. Constructions, constructional networks, and language change

1.2.1.1.1. Constructions and constructional networks

The most fundamental concept in construction grammar is the 'construction', which in this approach has an independent theoretical status, and is defined as a conventional and learned "form-meaning or a form-function pairing, with symbolic links found between the form and the meaning" (Barðdal & Gildea 2015: 8; cf. also Goldberg 2013: 17).[10] While the 'form'-part (often labelled 'SYN') comprises the phonological, morphological and syntactic properties of a pairing, the 'function'-part ('SEM') specifies the semantic and pragmatic features of a construction (cf. e.g. Croft & Cruse 2004: 258-261; Goldberg 2006: e.g. 10, 53). For instance, the PDE double object construction, which pairs a syntactic form of [NP_X V NP_Y NP_Z] with a meaning of [X causes Y to receive Z], also includes information about the morphological make-up of the individual elements. Furthermore, it identifies discourse-pragmatic features of the construction and its components, such as the fact that the recipient referent is typically discourse-given. While the definition of constructions was earlier restricted to form-meaning mappings that were in some aspect idiosyncratic or unpredictable, it has since been extended to fully

[9]The term 'diachronic construction grammar' is ascribed to Rostila (2004) and Noël (2007).
[10]This is not the case in e.g. generative grammar, as can be gleaned from Chomsky's (2000: 8) statement that "grammatical constructions are taken to be taxonomic artifacts, useful for informal description perhaps but with no theoretical standing".

compositional patterns – the only precondition is that they be frequent enough to be recognised and stored as patterns (cf. Goldberg 1995: 4 vs. Goldberg 2006: 5, 12-13; also Langacker 1988; Losiewicz 1992; Goldberg 1999; Barlow & Kemmer 2000; Bybee & Hopper 2001; Tomasello 2003; Thompson & Fox 2004; Diessel 2011; Hilpert 2014).[11] Similarly, although most attention in constructionist research has so far been given to complex constructions such as whole clauses, smaller-sized, more atomic units like single categories, words, morphemes or even phonemes are now typically included in the definition (e.g. Croft & Cruse 2004: 255; Traugott & Trousdale 2013: 11; Barðdal & Gildea 2015: 19-20). Neither idiosyncratic nor atomic constructions will, however, be at the centre of this thesis, since both the DOC and the *to*-POC constitute constructions with relatively predictable semantics, and are evidently complex rather than atomic. More specifically, both patterns represent 'argument structure constructions' in that they comprise a verb together with its syntactic arguments/semantic roles.

Apart from size and idiosyncrasy vs. generality, constructions are typically located on several other clines, among them the continua of phonological specificity (substantivity/ lexicality) vs. schematicity, and lexicality vs. grammaticality (type of concept). As to the first of these, constructions such as *book*, *-s* or *John gives Mary a book* are fully specified phonologically, whereas categories such as [NOUN], [-3rd ps. sg] or the abstract DOC [NP V NP NP] constitute highly schematic constructions. Partially lexically-filled or in-between constructions include e.g. [NOUN-*s*] or [NP *give* NP NP]. This cline from lexicality to schematicity also plays an important role in Croft's (2003) analysis of the DOC in PDE. His model, which distinguishes between DOCs on different levels of schematicity, ranging from verb-specific to verb-class-specific sub-constructions and to the abstract, underspecified DOC, will be applied in this thesis, and is therefore discussed in more detail in Chapter (2) below.

With regard to the second cline, the gradient distinction between 'lexical' or contentful components on the one hand and grammatical, 'procedural' concepts on the other hand draws on the varying degrees of referentiality of constructions. On the lexical end of the cline, we find nouns, verbs and adjectives, whereas fully procedural constructions have "abstract meaning that signals linguistic relations, perspectives and deictic orientation" (Traugott & Trousdale 2013: 11-13). Constructions are typically located on various clines at the same time: for example, the syntactic category of [NOUN] is atomic and contentful yet highly schematic, whereas the construction [NP *give* NP NP] is complex, partially filled, i.e. mostly, but not fully schematic, and mainly procedural. Furthermore, the clines are taken to be interdependent; an increased schematicity is e.g. typically associated with more procedural semantics (cf. Croft & Cruse 2004: 255; Barðdal & Gildea 2015: 21).

[11]As Traugott & Trousdale (2013: 11) argue, non-predictability is in fact no reliable indicator of construction status anyway, because "[s]ince the arbitrariness of the sign entails idiosyncrasy, idiosyncrasy is present in a construction by default". In a similar vein, Diessel (2015: 301) states that "there is evidence that even the most productive and most variable clause types, e.g., the transitive SVO, have holistic properties, i.e., properties that are associated with the entire structural pattern".

A second crucial tenet of construction grammar approaches is that they reject the generative view of language as a combination of a grammar (as a set of rules) and a dictionary. Instead, they follow Langacker (2008: 222) and other cognitive linguists in taking language to be "a **structured** inventory of conventional linguistic units" [original emphasis]. Thus, all constructions, whether lexical or grammatical, atomic or complex, specific or schematic, are assumed to be organised into networks and assemblies.[12] The networks of interconnected constructions, or 'constructional families', in which each construction constitutes a separate node, are stored in the so-called constructicon(s) (cf. Jurafsky 1992; Croft 2007: 463; Evans 2007: 42; Goldberg 2013: 21; Traugott & Trousdale 2013: 8-11, 50-51; Barðdal & Gildea 2015: 16).

As Boas (2013: 242-244) mentions, the basic constructionist assumption that language is not independent from other cognitive capacities is also reflected in that the particular structure of the constructional inventory as well as the existence of individual constructions are thought to be motivated by general cognitive principles such as iconicity or prototypicality (cf. also Goldberg 1995: 67; Goldberg 2006: 166-182; Diessel 2015: 302). For instance, both chairs and pianos can be conceptualised as part of the conceptual network of 'furniture items'; however, chairs arguably represent more prototypical, iconic category members than pianos (cf. e.g. Traugott & Trousdale 2013: 10; Diessel 2015: 302). Constructional networks are then taken to be organised in a similar way to conceptual networks, with their members differing in degree of prototypicality (Diessel 2015: 302). An example of such a network is presented in Figure 1 below, which features the DOC as one clause type in the middle. As indicated by the bold lining around [S *give* IO DO], DOC uses with *give* constitute more prototypical members of this construction, while DOC uses of *refuse* or *deny* are arguably less prototypical (cf. Goldberg 1995).

[12]By positing such networks, construction grammar aims to account for the entirety of language. This view is famously summed up in Goldberg's statement "It's constructions all the way down!" (2003: 223, 2006: 18), recently rephrased and extended as "It's constructions *all the way everywhere*" [original emphasis] by Boogaart, Colleman & Rutten (2014: 1).

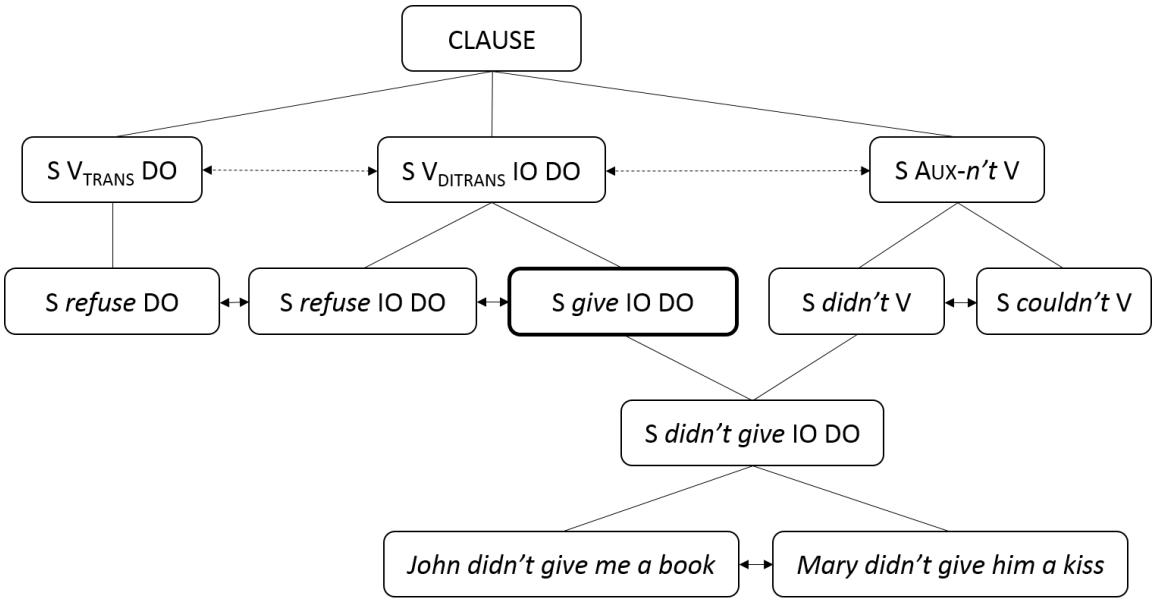

Figure 1 Network of argument structure constructions in PDE (loosely based on Croft & Cruse 2004: 264)

It should be noted that although systematic relations are supposed to hold between both form and meaning on various levels, it is often next to impossible to do justice to this multi-dimensionality of the network on paper (Goldberg 1995: 99; Traugott & Trousdale 2013: 51; Barðdal & Gildea 2015: 17). Depictions of constructional networks are therefore almost always to some extent simplified, and typically focus on one dimension only (e.g. either form or meaning). For example, the constructional family of the DOC in Figure 1 is based mainly on structural correspondences.

As to the links between the constructions in a network, a number of different types of relations are usually distinguished (cf. e.g. Goldberg 1995: 74-84; Croft & Cruse 2004: 264, 273-278; Traugott & Trousdale 2013: 59-61; van de Velde 2014; Diessel 2015; Barðdal & Gildea 2015: 20-21). Among these are taxonomic, or vertical links, which connect constructions on different levels of schematicity, and paradigmatic, or horizontal links, which relate constructions at the same level of abstractness.

The first type, namely that of vertical links, mainly draws on the lexicality-schematicity cline emphasised by Croft (2003), meaning that there is a hierarchy of constructions from the most substantive, item-specific constructions at the bottom (*John didn't give me a book*) to the most schematic, generalised knowledge such as [S V IO DO] or [CLAUSE] at the top (Goldberg 2006: 98). Lowest-level constructions are often referred to as 'micro-constructions', and are instantiated in use by 'constructs', i.e. actual token expressions. The term 'subschema' or sub-construction is by contrast used for individual type constructions at various degrees of schematicity like [S *give* IO DO] (cf. Croft 2003; Fried 2010; Boas 2013: 239). The most abstract, higher order representations, defined by Kemmer (2003: 78) as "essentially routinized, or cognitively entrenched, patterns of experience", are labelled 'schemas'. As will be pointed out below, in usage-based approaches such higher-level constructions crucially represent generalisations over different (sets of) lower level, more concrete

patterns which are identified as in some aspect similar (Traugott & Trousdale 2013: 13-14; cf. also Tuggy 2007; Barðdal 2008).[13]

Vertical links are also often referred to as 'inheritance relations', indicating that each construction inherits its specific features from the higher-level construction dominating it. Thus, the higher-level construction specifies or 'sanctions' the structure of its daughter constructions (cf. Croft & Cruse 2004: 264; Langacker 1987; Traugott & Trousdale 2013: 61).[14] Both the transitive construction and the DOC, for instance, get their subject-verb order specification from the highly abstract 'clause' (or 'Subject-Predicate') construction they are linked to (cf. Goldberg 1995: 109). Importantly, however, constructions are not restricted to inheriting from one single construction, but are usually linked to several higher-level constructions. This property, which Goldberg (2003) termed 'multiple inheritance', is illustrated by the example of [S *didn't give* IO DO] in the figure above: this construction has multiple parents (namely the DOC and the negative auxiliary construction) which contribute different aspects to its structure. In this case, the daughter construction inherits the structure associated with the auxiliary from the negative construction, while the presence of two objects is specified by the DOC (cf. also Croft & Cruse 2004: 264).

By contrast to vertical relations, horizontal links are defined as links between constructions at the same level of schematicity (van de Velde 2014: 147; Diessel 2015). In that, horizontal links between constructions, including more complex, syntactic ones, correspond to the well-established concept of paradigmatic relations between phonological or morphological elements (van de Velde 2014: 147). In Figure 1, such connections are indicated by double-arrowed lines, supposed to hold e.g. between different constructions the verb *refuse* can be used in [transitive and DOC], but also between different verbs (or verb classes) used in the same construction (e.g. *give* and *refuse* in the DOC).[15] Evidence for horizontal relations is found, among other things, in priming effects: closely related constructions (either formally or functionally) can 'prime' each other, meaning that the use of one increases the

[13]Other terms found in the literature (e.g. Traugott 2008a, 2008b; Trousdale 2008, 2010) include 'macro-' and 'meso-constructions'; this thesis will, however, stick to the terminology introduced above.

[14] Different versions of construction grammar disagree as to how precisely information is stored in the constructional taxonomy. Some accounts adopt a complete inheritance model, and assume non-redundant representation of information at the highest node possible, i.e. only once. In contrast, others, including cognitive, usage-based construction grammar approaches, presume a default or normal inheritance model. In the latter, "all of the attributes of a dominating higher-level construction will be inherited by the lower-level construction unless there is conflict" (Patten 2012: 19; cf. also Barðdal & Gildea 2015: 18). Accordingly, the default model, contrary to the complete inheritance model, is able to capture lower-level idiosyncrasies, as well as potential complexity or content mismatches (cf. Francis & Michaelis 2003). A sub-type of the default model is the full-entry model postulated by Goldberg (1995: 73-74). Here, information is represented redundantly at all levels in the hierarchy; rather than being inherited, it is specified at every node (cf. also Croft & Cruse 2004: 275-278; Patten 2012: 19-21). The present thesis remains largely agnostic on this particular issue, and the notion of inheritance does not play any particular role.

[15]Incidentally, horizontal relations are also mentioned in Traugott & Trousdale (2013: 51). In their approach, the links are restricted to the level of micro-constructions, though, and the idea is not elaborated any further.

likelihood of the other being produced in following discourse (Traugott & Trousdale 2013: 60). The notion of horizontal relations between constructions is particularly interesting for discussions of alternations such as the dative alternation, whose members can be thought of as related on the horizontal axis as well [DOC ↔ *to*-POC]. Such alternation relationships have until recently not received much attention in construction grammar; quite the contrary, the (semantic, pragmatic, or discourse-functional) differences between the variants are typically highlighted in support of their status as individual, independent constructions (cf. e.g. Goldberg 2002; Gries 2003). While Goldberg (1995: 91) does refer to 'S-synonymy' links holding between the members of the dative alternation, for example, the particular nature of these links is not specified, and little information is revealed about their role or emergence in the system (cf. also Perek 2012: 606). In this thesis, in contrast, the links between the alternating constructions and the alternation as such are at the centre of attention. More precisely, the thesis follows Cappelle (2006) and Perek (2015) in arguing for an intimate connection between the members of the alternation, and the existence of an 'alternation-based abstraction', i.e. a higher-level generalisation over formally distinct but semantically similar constructions. This 'allostructions'-model will be introduced in more detail in the first main part of the thesis below (Chapter 2).

Finally, but less relevant to the present work, several types of 'relational' links are often distinguished, identifying the semantic relations between different constructions: these include 'sub-part' and 'instance' relations, as well as 'metaphorical extension' links. For instance, the DOC uses of 'communication' verbs like *tell* are assumed to be related to 'transfer'-DOCs (e.g. *give*) through a specific metaphorical mapping, namely that of 'communication is information transfer'. Polysemy relations figure prominently in Goldberg's (1995) account of the DOC; this issue, and its relation to Croft's (2003) lexicality-schematicity hierarchy will be discussed at greater length at a later point.

1.2.1.1.2. Changing constructions and constructional networks

Change can then affect constructions and constructional networks in a variety of ways. Most basically, diachronic constructionist accounts differentiate between changes to parts of a construction (constructional change) on the one hand, and the creation of new constructions on the other hand (cf. e.g. Hilpert 2013; Traugott & Trousdale 2013; Barðdal & Gildea 2015). Constructional change can involve either alterations of the function/meaning of a construction, or include changes to the construction's form.[16] In both cases, changes can either impinge on one particular sub-part of a (larger) construction, or on the (complex) construction as a whole. Furthermore, both types of changes usually entail moving location along various clines, with constructions e.g. increasing in substantivity or

[16]It can also theoretically impact the link between the form and the meaning of a construction; however, this issue will not be dealt with here.

schematicity, or developing towards greater idiosyncrasy or generality (cf. Traugott & Trousdale 2013: 116; also Bybee & Beckner 2014: 510-511).

While constructional change concerns the internal dimension of a single construction only, constructionalisation is, by contrast, defined as "the creation of a $form_{new}$-$meaning_{new}$ pairing" (Traugott & Trousdale 2013: 22). Thus, it entails changes to both the semantics and the form of a construction. Nevertheless, constructional changes are involved in the creation of new constructions, in that they constitute necessary pre-stages of this process, and also typically impact the new construction after its emergence.[17] The emergence of a new construction is typically seen as proceeding via three stages: first, a change to the semantics of a construction occurs (e.g. pragmatic inferences become semanticised), which leads to two different meanings being linked to the same form (SYN_1 – SEM_1/SEM_2). The second step then sees the resolution of potential mismatches between the innovative meaning and the old form, meaning that the formal component is re-analysed. Observable evidence for this change only becomes available by the third step, when the new meaning and a new 'SYN'-component combine to form a new construction, which exists next to the old one (SYN_1-SEM_1 vs. SYN_2-SEM_2).[18] Most constructionist accounts furthermore distinguish between grammatical constructionalisation and lexical constructionalisation, which to some extent correspond to the notions of grammaticalisation and lexicalisation (cf. Traugott & Trousdale 2013: Ch.3, 4). As I will argue below, this step-wise model and the definition of constructionalisation as such are, however, difficult to combine with an evolutionary approach to language change, in which changes to any aspect of a unit result in the emergence of a new variant. Therefore, constructionalisation will in this thesis simply be used to refer to the formation of a new construction, regardless of the precise processes involved. An example of constructionalisation as conceptualised here is the emergence of the *to*-POC, i.e. the reanalysis of a *to*-GOAL to a *to*-RECIPIENT.

Constructional changes and especially constructionalisation processes evidently also greatly impact the network as a whole, as any change to a part of the network might affect parts connected to it. Most relevantly for this thesis, new links between constructions can emerge, or existing links can decay. As I will propose below, the former process did, for instance, take place in the emergence of the dative alternation: with *to* coming to mark recipients through reanalysis, a horizontal connection develops between the *to*-POC and the DOC. I will also argue later that the emergence of new links can in turn lead to the emergence of new constructions, such as a cross-constructional higher-level generalisation over the DOC and the *to*-POC once they had become horizontally linked. By contrast, loss of links can be illustrated by the case of the DOC and verbs of dispossession; the link between the

[17]Cf. the distinction between pre- and post-constructionalisation constructional changes advocated by Traugott & Trousdale (2013: 27-28); cf. also Colleman (2015).

[18]Cf. e.g. Barðdal & Gildea (2015: 13-14); also Harris & Campbell (1995); Hopper & Traugott (2003); Rostila (2004, 2006); Noël (2007); Traugott & Trousdale (2013); Smirnova (2015); Traugott (2015).

abstract DOC and this particular sense supposedly faded and was eventually lost entirely in the history of English. Such changes to the structure of a network and the relations within it are captured by and discussed in detail in Torrent's (2011, 2015) 'Constructional Network Configuration Hypothesis'; see also Patten (2012) on changes in the constructional network of *it*-clefts in the history of English, and van de Velde (2014) on shifting links between formal strategies and specific functions in degenerate (many-to-many) systems. Connected to the issue of additions or losses of links, Torrent (2015) furthermore comments on constructional mergers, suggesting that previously unrelated constructions may come to converge either functionally, formally, or both ('Constructional Convergence Hypothesis'). Constructional splits, in contrast, would correspond to constructionalisation processes as just outlined.

To sum up, a major principle of constructionist approaches is that all grammatical knowledge is equivalently represented in the form of form-meaning pairings which only differ in respect to various clines (Croft & Cruse 2004: 225). These constructions are not stored isolatedly, but are linked to each other in a larger network, both vertically and horizontally. That is, constructions are organised hierarchically, ranging from item-specific, lexically filled constructions at the bottom, to highly schematic, abstract constructions at the top. Furthermore, paradigmatic, horizontal relations can hold between constructions at the same level of schematicity. The diachronic implications of these assumptions are that constructions (and their components) can change, and that new constructions can emerge or disappear. Moreover, the links between constructions in the network are subject to change, with new relations potentially forming while existing ones are lost.

1.2.1.2. Usage-based constructionist approaches (to language change)

1.2.1.2.1. Usage-based construction grammar

This thesis adopts a usage-based construction grammar approach to language and language change (cf. e.g. Diessel 2011, 2015; Patten 2012; Bybee 2013; Traugott & Trousdale 2013; Hilpert 2014; Perek 2015). The main tenet of this approach is, as Perek (2015: 6) contends, that "the cognitive representation of language emerges through, and is shaped by, language use" (cf. also Langacker 1987, 2000; Hopper 1987; Barlow & Kemmer 2000; Bybee 2006, 2010, 2013; Bybee & Hopper 2001; Bybee & McClelland 2005). In other words, constructions and the configuration of the constructional network result from linguistic experience: rather than being independent and static, language on this view hence constitutes a highly dynamic system whose constituents and the relations between them are emergent as well as flexible, gradient/fuzzy rather than strictly discrete, and constantly changing (De Smet 2010: 96; Bybee 2013: 49-52). A further principle of usage-based accounts is that language is grounded in and influenced by domain-general cognitive processes such as categorisation or cross-modal association, as well as neuromotor automation, analogy, chunking, and others (Bybee 2013: 49-

50; Langacker 1987, 2000; Lakoff 1987; Traugott 1989; Elman & Bates 1997; Tomasello 2003; Bybee & Beckner 2011). Categories, or abstractions in general, are viewed as based on concrete, actual tokens in language use, meaning that abstract linguistic structure (such as schematic constructions) emerges from the use and storage of concrete lexical tokens in a bottom-up manner. The process of abstracting a schema is dependent on schematicisation processes: features common to a range of concrete tokens are extracted, abstracted over, and associated with a larger construction (Perek 2015: 168; Bybee 2013). Once abstractions/ categorisations have come about, they are then stored alongside the more specific, lower-level representations rather than ousting them, as both the acquisition of particular instances and the generation of abstractions are cognitively beneficial (Traugott & Trousdale 2013: 53).

A crucial factor in language use and cognition is frequency, as categorisation, among other processes, fundamentally depends on elements being repeated (Bybee 2013: 50-51; also e.g. Ellis 2002; Diessel 2007). Frequency is also taken to determine the degree of entrenchment of a construction, commonly defined as "the strength or autonomy of representation of a form-meaning pairing at a given level of abstraction in the cognitive system" (Blumenthal-Dramé 2012: 4). This is because whenever a particular construction is used or perceived, it is activated. Frequent activation of a construction in turn means it can be more easily accessed and activated in the future, i.e. it becomes better connected and increases in 'linguistic strength' (Blumenthal-Dramé 2012; Traugott & Trousdale 2013: 54-55; Barðdal & Gildea 2015: 24-25).

While both type and token frequency are assumed to play a role in entrenchment, they do so on different levels of schematicity – while high token frequency leads to lexically-filled, lower level constructions being entrenched, high type frequency can result in the emergence and increasing entrenchment of a higher-level, more abstract construction (Langacker 1987: 59-60; Croft & Cruse 2004: 292-293, 308-320; Hoffmann 2013: 315). For example, low-level constructions such as *Give it me!* are presumably highly entrenched (in certain dialects) due to their frequent text occurrence (cf. e.g. Gerwin 2014). However, the degree of entrenchment of a higher-level, more abstract [V TH REC] construction is probably rather low, since the pattern is restricted in type frequency. Apart from being largely confined to uses with two pronominal objects, it is also presumably not attested with a large range of verb types (cf. e.g. ?*Refuse/forgive it me*!; Gerwin 2014). In contrast, the DOC as such (with a form of [V REC TH] is highly type frequent, being instantiated by a large number of different verbs and also verb class types, and is accordingly expected to be highly entrenched (Croft & Cruse 2004: 309-310; Hoffmann 2013: 315; Barðdal & Gildea 2015: 25).

Degree of entrenchment and schematicity, and consequently type and token frequency, also have an impact on the productivity of constructions. In usage-based approaches, productivity is commonly defined as a construction's success in attracting new elements, i.e. a construction's extensibility to

lexical items it has previously not been witnessed with (Barðdal 2008: 18-19; Barðdal & Gildea 2015: 26-27; Perek 2015: 167-169; also Bybee 1995, 2010; Goldberg 1995, 2006; Bybee & Eddington 2006; Perek 2014, 2016; Suttle & Goldberg 2011; Zeldes 2012; Zeschel 2012).[19] It is generally agreed upon that type frequency contributes to productivity, since a large amount of different types means more bases for analogical extension. This is, for example, clearly given in the case of the PDE DOC: the high number of types associated with the construction means that it can readily be extended to new verbs (such as the new communication verbs *skype*, *whatsapp* or *snapchat*). Individual types with low token frequency, e.g. formal giving-verbs like *bequeath*, are supposed to further add to the construction's productivity because their processing makes the activation of the more abstract representation necessary, thereby again increasing the strength of the construction (Bybee 2013: 62; cf. also Baayen 1993). In contrast, high token frequency (but low type frequency) is seen as disadvantageous, because if individual tokens are highly frequent, this in fact reduces the probability that the more abstract type is productive on its own (Barðdal & Gildea 2015: 25). For instance, if *give* was found highly frequently in the DOC, but very few other verb types were used with it, the more abstract schema would probably fade in favour of the more entrenched lower-level *give*-construction. Barðdal (2008, 2011, 2012) adds the 'degree of constructional coherence' as a further factor in determining productivity. Fully productive constructions are on this account taken to have a low degree of semantic coherence, and correlated to this, high schematicity and high type frequency. However, low type frequency and low degree of schematicity, i.e. a high degree of similarity between the members of a construction can also result in some productivity ('semi-productive' constructions) (cf. Barðdal 2008; Traugott & Trousdale 2013: 119; Bybee & Beckner 2014: 507-508). This thesis will then mainly determine productivity on the basis of type (and token) frequency, but also take up and investigate Barðdal's suggestions concerning semantic coherence.

1.2.1.2.2. Usage-based diachronic construction grammar

Assuming a usage-based constructionist perspective to language change implies that language constitutes a dynamic system which is subject to change through experience, and that constructions are also flexible rather than static (Bybee & Beckner 2014: 504). Variation and change are therefore constantly produced, in adult communication as well as in child language acquisition. Further principles of usage-based views on language change are that the locus of innovation is the construct/ micro-

[19]As Perek (2015: 168) points out, productivity in this sense "not only covers obvious cases of genuine syntactic creativity, whereby a verb is used in an unusual argument structure, but it is also meant to explain how children acquire a language under the well-warranted assumption that the input provided to them is inherently limited and does not necessarily contain all possible forms of the language".

construction level, and that change is gradual and incremental.[20] This follows from the basic assumption of such approaches that all experience, i.e. every single usage event (a 'construct' in Traugottian terms), is stored and thus has an effect on cognitive representation (Bybee & Beckner 2014: 503-504; cf. also Bybee 1985, 1995, 2006, 2010, *inter alia*; Bybee & McClelland 2005; Patten 2012: 21; Traugott & Trousdale 2013: 47-53). It is here assumed that in encountering tokens in usage, a 'best-fit' principle is applied, meaning that the token is compared to stored instances. In this process, mismatches can occur, and variation is produced. Such small-step, lower-level changes can then accumulate and become larger-scale changes, and affect higher-level representations. That is, while more schematic constructions are subject to change as well, such changes are epiphenomenal, and are caused by the accrual of lower-level changes originating in concrete tokens (cf. Hilpert 2013; Traugott & Trousdale 2013).

The strong emphasis on frequency of use in usage-based approaches means that frequency is also taken to be a crucial factor in language change, shaping the trajectories of change (Bybee & Beckner 2014: 404; cf. also e.g. Patten 2012: 21; Hilpert 2013: 15; Traugott & Trousdale 2013: 52-53). As to processes influencing frequency of occurrence, those most relevant to the present study are those of 'spreading activation', analogy, and reanalysis. The first of these refers to the mechanism of closely related constructions in a network being activated (near-) simultaneously in usage events, meaning that the activation of a particular pattern will also to a certain extent activate constructions that are vertically or horizontally connected to it (cf. also Hudson 2010: 95). Spreading activation is then also viewed as responsible for priming effects, since the possibility of preceding constructions having an impact on following ones requires the pre-activation of shared or closely related features of these constructions (cf. also Jäger & Rosenbach 2008).

Analogical extension means that a construction can come to be used with types or tokens it was previously not associated with, but which are in some aspect similar to its existing members (Traugott & Trousdale 2013: 35; cf. also Anttila 2003; Hock 2003; Fischer 2007; De Smet 2009; Gisborne & Patten 2011; Bybee & Beckner 2014). For example, the recently attested DOC uses of *provide* might be motivated by the verb's semantic similarity with other giving-verbs, which frequently occur in this construction. Thus, the type frequency of the DOC increases through analogical extension. Since increases in type frequency typically strengthen the cognitive representation of the higher-level construction, this may in turn lead to even more types being added.

Reanalysis processes, on the other hand, involve differences or mismatches between interpretations, such as when *to* was reanalysed from allative goal-marker to recipient marker, and

[20]Cf. e.g. Traugott & Trousdale (2013: 74): "A succession of small discrete steps in change is a crucial aspect of what is known as 'gradualness' […] a phenomenon of change, specifically discrete structural micro-changes and tiny-step transmission across the linguistic system".

thereby raised its token frequency (cf. Barðdal & Gildea 2015: 5; also Harris & Campbell 1995; Fischer 2007; De Smet 2009; Gisborne & Patten 2011; Traugott & Trousdale 2013; Bybee & Beckner 2014; among many others). While such new uses usually constitute non-prototypical, less entrenched instances of higher-level schemas in the beginning, they can develop into more central members over time. For example, the earliest *to*-prepositional recipients were probably highly marked in comparison to the NP-recipients, but became more regular in the course to PDE.

In general, marginal and non-prototypical constructions are more prone to loss, since infrequent (or lack of) activation bears the risk of decreasing entrenchment, meaning that the construction is also less readily activated in the future. This can in time lead to the construction fading and becoming obsolete: as will be shown below, this is precisely what happened in the history of the English DOC, when uses further removed from its prototypical meaning of transfer, such as verbs of dispossession, were ousted from the construction. The loss of more schematic constructions is typically the result of low type frequency (in terms of number of sub-constructions). While lower-level, more substantive constructs, which represent single types, might be highly token frequent, this will only serve to reinforce these particular constructions, but not be conducive to the entrenchment of a higher-level generalisation. As Patten (2012: 22) claims, "the entrenchment of individual instances is [consequently] often found occurring alongside a concomitant loss (or weakening) of the overarching schema, which is no longer type productive" (cf. also Bybee 1985; Traugott & Trousdale 2013: 55, 65; Bybee & Beckner 2014: 507). Such a development in turn often leads to the fossilisation of the token frequent subordinate instances, whereas less frequent specific instances associated with the schema might be lost entirely. For example, if the micro-construction of *give it me!* is very token frequent, but other types such as *tell it me / give this him / tell that her* are not, or only rarely used, this will probably result in reduced entrenchment and possibly loss of the infrequent types as well as the more general schema [V TH REC]. At the same time, *give it me* is reinforced, and survives as a fossilised use. Members of low type-frequency constructions are furthermore often attracted by more productive constructions; in the example just given, uses such as *tell it me* might e.g. change into *tell it to me*, instantiating a construction with higher productivity (Barðdal & Gildea 2015: 29-32). Nevertheless, infrequent use does not necessarily entail ousting, but constructions can remain stable, e.g. by developing specialised uses. The construction of [V TH REC] is, for instance, now associated with particular dialects, meaning that it has acquired socio-regional values (cf. also S. Hoffmann's 2005 discussion of complex prepositions). Furthermore, loss or decline typically does not affect all members of schemas at the same time or speed. Instead, there is normally great variability.

To conclude, usage-based constructionist approaches are fundamentally 'bottom-up' rather than 'top-down', presuming that language use affects (or indeed forms) linguistic structure. Crucially, language change therefore also originates in language use. What follows from this is moreover that

the analysis of linguistic usage data, and of frequency in usage, is essential in determining the nature of cognitive representations (cf. Bybee 2013: 50-51; Goldberg 2013: 16; Barðdal & Gildea 2015: 24). Such a 'what you see is what you get' view of language use and representation is particularly apt for the present thesis, as it is mainly based on an empirical analysis of ditransitive attestations and their frequency distribution in a corpus of Middle English, and takes these data to directly reflect mental representation.

1.2.1.3. Summary

To sum up, this chapter has given an overview of the main tenets of usage-based constructionist approaches to language: on this view, the language system constitutes a network of form-meaning pairings at various levels of schematicity, ranging from substantive/filled to highly abstract, encompassing atomic as well as complex constructions, and so on. These constructions are assumed to be related via different types of links, both vertical and horizontal. The diachronic implications of these assumptions are that both individual constructions and the connections between them can change; typically, diachronic constructionist accounts distinguish between constructional changes which only affect parts of a construction, and constructionalisation, which involves changes to both form and meaning of a construction, and leads to the formation of a new pairing (out of an older construction). Furthermore, the links between constructions are subject to change, meaning that new links can emerge, and existing ones can be lost.

The particular version of construction grammar used in this thesis is usage-based (diachronic) construction grammar: on this account, all linguistic knowledge and representation is crucially taken to be grounded in and emerging from usage. This entails, first, that change occurs at the construct and micro-constructional level. If such micro-changes accumulate, higher-order constructions in the network can be affected as well. Importantly, however, changes on more abstract levels are always epiphenomenal to lower-level alterations, i.e. are not directly caused by language use. Second, this means that frequency of occurrence and connected to this, entrenchment and productivity, are considered central factors in language representation and language change (e.g. Bybee 2006, 2010, 2013). This is particularly relevant for the present study, whose empirical focus is on attested patterns in a historical corpus. In the following section, the second framework applied in this study, namely evolutionary linguistics is very briefly presented – as will be seen, this approach clearly aligns with usage-based construction grammar in its emphasis on frequency.

1.2.2. Evolutionary linguistics

The second framework employed in this study, namely evolutionary linguistics, actually subsumes a number of approaches which differ in minor and not so minor ways, and itself constitutes a sub-theory of 'Generalised Darwinism', 'Universal Darwinism' or 'Complex adaptive systems theory' (cf. e.g. Croft

2000, 2006, 2013a; Ritt 2004; Rosenbach 2008; Beckner et al. 2009). The basic assumption here is that a variety of different systems, including biological and cultural ones, are subject to the same domain-general evolutionary mechanisms. Language change, as part of cultural evolution, is accordingly considered to be one specific manifestation of evolution, just like stock market movements or changes in immune systems (Rosenbach 2008: 25). This is because languages display the following features, characteristic of evolutionary systems:

First, languages are made up of constituents that are transmitted/replicated. Potential examples of such replicating units are words, but also morphemes or, most relevantly for this thesis, constructions such as the DOC or the *to*-POC. Second, variation is constantly produced in the population of linguistic constituents, as the replication process can be (and frequently is) unfaithful (Dennett 1995: 343). That is, copying mistakes can occur in each replication event. An example of such emergent variation would be the reanalysis of a prepositional goal-construction to encode a recipient-meaning. This new prepositional recipient-construction (the *to*-POC) counts as a variant of the DOC, and therefore enters into competition with it. Finally, the transmission/replication is differential – meaning that not all variants replicate equally well – and is subject to constraints that can be construed as environmental. These constraints include physiologically grounded factors, i.e. cognitive or physiological biases, factors grounded in the system of co-constituents, and factors grounded in socio-historically contingent factors, such as prestige or identity. Languages will then consist of those patterns which have replicated successfully under these locally given constraints. That is, replicators which are better adapted to these different types of factors will be more successful than other variants, and have the potential to oust them. An alternative scenario to loss of one variant in favour of the other is the development of a cooperative relationship in which both variants construct their own (e.g. functional or social) niches. Although social factors undoubtedly play an important role in language change, the present thesis will concentrate heavily on the first two types of factors, namely physiologically or systemically grounded pressures. As to cognitive-physiological factors, this includes issues such as expressivity or disambiguation power of linguistic constituents, as well as economy in production. For example, the DOC is clearly shorter and is thus arguably more economical than its *to*-paraphrase, which in turn can be thought of as more distinctive. Intra-systemic factors may in contrast be responsible for the greater success of an inflection-less DOC in a language where morphological case marking is not very salient and indicative of semantic role any more.

In sum, languages meet the criteria of consisting of replicating units, of showing continuous and abundant variation at all times, and of displaying signs of differential replication under specific linguistic and extra-linguistic constraints. They can therefore be taken to represent historical systems of constituents that need to be adapted to constraints on their transmission. This means that they can or indeed must be studied in terms of evolutionary theory. That this should be the case is increasingly

recognised in linguistic research, and evolutionary approaches to language and language change have recently begun to be applied more widely. Taking an evolutionary perspective also in this thesis seems highly appealing for a number of reasons, including the fact that it allows us to address questions concerning language change in general, and particular changes in the history of a language, in a very systematic and more enlightening way. By shifting away the focus from the speaker as an active, rational and intentional agent in language use and change, and instead taking the 'perspective' of the replicating patterns (so to speak), applying an evolutionary approach also forces us to take a more analytic, and less hermeneutic approach. Thus, evolutionary linguistics provides a better explanatory basis for linguistic investigations. Moreover, adopting an evolutionary framework, its terminology and conceptual inventory as well as methodology allows for interdisciplinary investigations, which can certainly yield interesting insights. – This will be illustrated by means of an evolutionary game theoretic account in this thesis, as pointed out below.

Importantly, the evolutionary approach also appears to be (intra-disciplinarily) perfectly compatible with a variety of more specific theoretical linguistic frameworks, especially cognitive, usage-based theories of language such as construction grammar. In the present work, it will be investigated to what extent this holds true, where potential problems might arise, and which specific assumptions a joint framework entails. The proposed innovative framework of evolutionary construction grammar will then be used to describe, analyse and explain the history of the Present Day English dative alternation. The more specific aims of the thesis are given in the following sections.

1.3. Aims and agenda

There are two major goals to this thesis: its first central aim is to investigate the diachronic development of ditransitive constructions in English, and to thereby help to explain the synchronic phenomenon of the dative alternation, including certain idiosyncratic features of the members of the alternation. It moreover strives to provide a sounder empirical basis for many assumptions that have been around in the literature for quite some time, but have so far not been adequately tested against actual language data. Within the broader agenda of investigating ditransitives in Middle English, the study focuses on four distinct aspects involved in the forms' development, namely, as already mentioned above, those of the rise of prepositional paraphrases and the emergence of the dative alternation, the loss of case-marking, the fixation of word order, and changes in the semantics of the constructions involved. This fourfold-ness of changes also forms the basis of the structure of various parts of this thesis. A major focus will then also be on the possible connections between these changes. The final discussion of the empirical findings on these developments should eventually result in a probable and as conclusive as possible scenario for the development of ditransitives in and around Middle English, modelled in evolutionary constructionist terms.

The gist of the proposal that I will put forward for the development of the dative alternation is that it constitutes a story of constructionalisation, competition, and cooperation, as well as co-evolution. As to the first, it will be shown that the diachrony of the dative alternation can be explained as a sequence of changes to a constructional network, including **constructionalisation** processes on various levels. Defined as the emergence of new constructions –either through mergers or splits of other constructions – such processes can be observed e.g. in the emergence of a higher-level schematic DOC through the loss of case marking, the development of a range of prepositional ditransitive patterns, as well as the establishment of a close link between the DOC and the *to*-POC, which is represented by an alternation-based generalisation (Perek 2012, 2015; also Cappelle 2006; Goldwater et al. 2011; van de Velde 2014). The emergence of new links between constructions constitutes a further important issue in this thesis.

The second crucial concept I will draw on is **competition**, both between variants in the constructional network, i.e. paradigmatic choices in language systems, as well as on the level of larger language strategies such as 'case', 'word order' or 'PPs' for expressing core semantic roles. One major point of interest here is the resolution of competition. I will argue that the history of the English dative alternation shows two possible pathways for such a resolution: either, one choice or strategy wins out, while the other is lost, or, a state of co-existence and **cooperation** is reached, with both variants constructing their own niches. The latter crucially holds in the case of the PDE dative alternation. While the DOC and the *to*-POC for some time competed against each other, they eventually came to form a cooperative, mutually beneficial relationship in which the two constructions stabilise each other and profit from being associated with each other. That the dative alternation is the result of competition for a similar function between formally distinct patterns, which has led to the emergence of symbiotic cooperation and a 'division of labour' situation, constitutes one of the central arguments of this thesis.[21] As to one variant succeeding at the expense of the other, it will be demonstrated that such a scenario can be observed e.g. in the loss of individual case frames, with [DAT_{REC}-ACC_{TH}] remaining as the only one. The ousting of the DOC with verbs of dispossession, with prepositional patterns taking over, also illustrates this pathway of competition resolution. In addition to investigating whether and where examples of such changes can be found in the history of ditransitives in English, I aim to explain why these changes took place in the particular cases.

Last, a major focus of this thesis is on the issue of correlation and causality in the history of ditransitives. In this context, the biological concept of **co-evolution** is of crucial importance. I will here argue that the emergence of the dative alternation can be seen as an evolutionary effect or an adaptive

[21]In biology, the term 'symbiosis' generally refers to any interaction between organisms or species, be it antagonistic, parasitic, predatory or mutualistic (cf. e.g. Moore & Cotner 2011: 281). In the present thesis, however, symbiosis is only used for the last of these, i.e. for cases of mutualism and cooperation.

response to system-wide changes, i.e. changes in parameters like case marking prominence and word order flexibility. Furthermore, I will claim that the establishment of the dative alternation also represents one of co-evolution and mutual adaption between the two constructions involved. That is, once the DOC and the prepositional pattern became associated with each other, micro-changes to one of the constructions (due to environmental factors and changes to them) could lead to the other construction responding with changes, which in turn could cause the first construction to react again. Such small, step-wise changes on both sides could eventually amount to larger-scale changes. For example, I will assess whether the semantic widening seen with POCs, which led to a closer and closer association between the the POCs and the DOC, triggered a semantic narrowing in the latter. I will maintain that the specialisation of the DOC is a clear piece of evidence that a link between the constructions has formed. Similarly adaptive changes took place in regard to clausal word order and object order in the constructions.

I expect that the discussion and analysis of the history of the dative alternation in such terms, i.e. conceptualising the history of the patterns involved as one of constructionalisation, competition, cooperation and co-evolution, will be highly fruitful in explaining the synchronic features of the constructions and the relationship between them.

A second (meta-)goal of this thesis is to assess the benefits of taking an evolutionary linguistics approach to explaining language change in general, and specific changes in the history of English in particular. I furthermore attempt to demonstrate that evolutionary linguistics as a framework is compatible with other approaches, especially cognitive-functional theories such as (usage-based) construction grammar, and thereby aim to propose a new, merged framework of evolutionary construction grammar. As already mentioned, usage-based construction grammar as a data-driven, fundamentally bottom-up approach to linguistic systems, is chosen here as it presents itself as a suitable heuristic tool to identify and describe the patterns under investigation. This is because the relatively long research tradition and the amount of thinking that has gone into the conceptual theoretical basis of the framework, as well as terminology and other issues, make it a highly useful tool to describe and analyse the linguistic elements that are at the centre of this thesis. Furthermore, the validity of many assumptions in this theory is based on extensive neuro- and psycholinguistic research, and much effort has been taken to connect linguistic processes to mechanisms present in more general cognitive domains (cf. the contributions in Hoffmann & Trousdale 2013; Boogaart, Colleman & Rutten 2014; Barðdal et al. 2015; among others). The well-developedness of the field is also manifest in the considerable body of constructionist literature that deals with the double object construction and the dative alternation in PDE (cf. e.g. Goldberg 1995, 2006; Croft 2003; Kay 2005; Colleman & De Clerck 2008; *inter alia*). Construction grammar therefore provides us with a clear definition of what the synchronic variants and their components, as well as their relevant characteristics, are. More recent

accounts have furthermore also paid particular attention to the alternation as such. These approaches have proposed ways of dealing with close relationships between formally different constructions in this framework, as well as the implications that assuming a clear link has for issues such as cross-constructional productivity (cf. Perek 2015). Diachronic construction grammar accounts have also elaborated on the consequences of taking a constructionist approach to language change, and have thereby specified how precisely variation in a constructional network can be brought about (cf. Traugott & Trousdale 2013; Barðdal et al. 2015). The assumptions made in these treatments are also firmly grounded in the linguistic tradition in that well-known and much-discussed trajectories (or sets) of changes such as those typically addressed as 'grammaticalisation' are incorporated and re-assessed from a constructionist perspective. Among other things, this is evidently of help in e.g. addressing the development of prepositional alternatives to more synthetic constructions in the history of English. Although the constructionist framework is clearly still in need of refinement and discussion, this thesis does not represent an effort to find support for or refine the assumptions made within the construction grammar approach, though, but only uses it as a handy device to conceptualise certain issues.

Evolutionary linguistics, in contrast, is drawn on in order to come up with explanations for the presence of particular constructional variants at particular points in time. That is, the fact that the dative alternation in PDE looks the way it does, i.e. the fact that both the DOC and the *to*-POC are present in today's language will be explained in evolutionary terms. Thus, the PDE constructions are taken to have been the fittest of a variety of other variants that did not manage to persist until today. For example, the *to*-POC appears to have been more successful than competitors with other preposition types. On the other hand, the inflectionless DOC has evidently ousted case-bearing constructions. The selective fitness of units is taken to be determined by a range of factors such as explicitness, but also the surrounding environment that is the constructional network. In other words, a construction can be successful due to its inherent properties responding best to cognitive-physiological biases, but also because it is related to/ similar to another, highly successful construction in the network. If such pressures acting on variants are systematically taken into account in attempting to account for changes in the history of languages and linguistic constituents, we can potentially shed new light on open or problematic issues.

In sum, this thesis aims to provide a historical explanation for the synchronic phenomenon of the dative alternation, and the specific syntactic and semantic properties its members display. I intend to do so by applying an innovative theoretical approach to language change, merging the two frameworks of evolutionary linguistics and construction grammar. The main argument to be made is that the emergence of the dative alternation as a cooperation between the two constructions of DOC and *to*-POC constitutes an evolutionary effect of, or an 'adaptive response' to, system-wide changes such as the loss of case marking and the fixation of word order. In addition to providing a sounder empirical

basis for existing hypotheses about the development of the alternation (as outlined in the following section), this thesis therefore offers an original and new account of the history of this phenomenon, and contributes substantially to its understanding.

1.4. Data and methodology

In order to be able to address the question of how the dative alternation came into being, two different methods were applied in this thesis. The main part of the dissertation reports on an empirical investigation of ditransitives in a corpus of Middle English texts, namely the *Penn-Helsinki Parsed Corpus of Middle English, 2nd edition* (PPCME2). This corpus includes a total of approximately 1 million words in about 50 texts, and constitutes a reasonably representative sample of Middle English texts. The database of ditransitives drawn from the corpus contains tokens of DOCs, i.e. sequences of two NP objects, as well as POCs, that is to say, instances that involve a recipient-like argument marked by all possible types of prepositions. These were classified according to a number of extra-linguistic as well as language-internal criteria. The methods of analysis included compiling basic frequency lists concerning various aspects, which served as the input for statistical testing (typically chi-square tests). The tool of 'distinctive collexeme analysis' was used to detect distributional differences between competing constructions, and to investigate whether certain verbs showed preferences for one option or the other, and if so, how strong these preferences were (Gries & Stefanowitsch 2004: 97). Furthermore, an exploratory tool named 'hierarchical agglomerative cluster analysis' (HCA) was used, which allowed me to assess whether texts of the same dialect or genre also behaved similarly in respect to certain linguistic variables (Gries 2009: Ch. 6).[22]

In addition to the corpus study, which constitutes the main empirical component of the thesis, an attempt to model a specific aspect of development of ditransitives in English in terms of evolutionary game theory will be presented (cf. e.g. Benz, Jäger & Rooij 2006; Deo forthc.; Hofbauer & Sigmund 1998, 2003; Jäger 2004; Nowak 2000, 2006; Nowak & Krakauer 1999). I will thereby show that "methods that ha[ve] previously been tested and successfully applied in the natural sciences can enrich […] the study of cultural language transmission and thereby increase our understanding of the historical development of specific languages" (Ritt & Baumann 2014; cf. also Deo forthc.; Jäger 2007; Nowak 2006). In the particular language game included in this thesis, the hypothesis will be pursued that under universal pragmatic constraints such as end-focus (focused, non-topical elements typically

[22] It should be noted at this point that corpus linguistics is understood here as a method (of both data collection and data analysis) rather than a theory in its own right, and that the corpus data is used for the assessment, validation, refutation or refinement of particular hypotheses or theories (cf. e.g. McEnery & Hardie 2012: 6). This study thus takes a corpus-based rather than a corpus-driven approach. The results of a corpus investigation then nevertheless still need to be interpreted within (some sort of) a theoretical framework (cf. Gries 2009: 4-5; McEnery & Hardie 2012: 167). In my case, this is done within an evolutionary construction grammar framework as presented above.

being place late in a clause), changes to certain parameters can lead to strategy combinations. More specifically, I will address the question whether changing environmental conditions, such as a decrease in the salience of case inflections or a decrease in word order freedom, can lead to the emergence of a system in which a semantic role is either expressed by an NP or a PP, depending on its discourse-pragmatic status (cf. e.g. Steels 2012c). The application of this highly innovative methodology (and the framework it is associated with) in addition to the more traditional corpus analysis is one of the major merits of this thesis.

1.5. Limitations

While the investigation presented in this thesis can certainly shed light on some issues that have so far been not been dealt with in sufficient detail, it is clear that there are also limitations to this study. On the one hand, the discussion is entirely based on data from Middle English only, although the changes dealt with extend over a much larger time span from Old English (or even before) to Early/ Late Modern English and beyond. This issue can be resolved to a certain extent by drawing on data collected and analysed by other linguists (cf. above all Allen 1995; Colleman & De Clerck 2011; De Cuypere 2010, 2013, 2015a, 2015c; Wolk et al. 2013). Nevertheless, many suggestions and conclusions put forward in the thesis will have to remain speculative to a certain extent. Ideally, they will of course be tested in future research.

Furthermore among the questions that will not be addressed in detail in the project are the impact of genre and regional variation on the data, as well as the role of other constructions, e.g. patterns with a prepositional theme rather than a recipient (*John provided **Mary** with food, Mary asked **John** for food*). Concerning the former, the limitations of the study were mainly caused by the corpus design, as certain dialects and genres are greatly overrepresented at the expense of others, as well as the general restriction in amount of texts typically available for earlier states of languages. Issues of practicability also led to the exclusion of the alternative constructions as just mentioned, since searching for such patterns in the corpus as well as analysing them would have exceeded the scope of the study. The same holds in regard to the exclusion of clausal objects as well as passive ditransitive constructions, although the history of the latter would have been highly interesting especially for the question of word order fixation and the emergence of a prototypical subject/object slot in the diachrony of English. A closer investigation of these and other open issues is certainly desirable; they therefore represent interesting topics for future research.

Another issue that will not be investigated in this thesis is the likely influence of language contact on the development of ditransitives in English – it is, for example, often assumed that the income of French ditransitive verbs played a role in the rise of the *to*-POC, since the recipient was typically marked by *à* in the donor language (13). Borrowed together with their French argument structure (or rather,

in their construction), these verbs might then have influenced the behaviour of the native ditransitives and increased the frequency of PP-patterns (Gerwin 2014: 41).

(13) Jean *donna* le livre$_{TH}$ **à Marie**$_{REC}$
'John gave the book to Mary'

In addition to impact from French, Scandinavian is sometimes mentioned as an influencing factor in the development of ditransitives in English, both concerning the more general word order changes observable at the transition from Old to Middle English and in respect to regional idiosyncrasies in object ordering (cf. e.g. Trips 2002; Gast 2007; Gerwin 2014). Although language contact and other sociolinguistic factors certainly had a major influence on the development of the English language and should thus by no means be ignored, it will only be dealt with in passing in this thesis, however. This is largely due to personal interest, as I think that investigating possible system-internal reasons for change – i.e. the impact that (syntactic) constructions can have on related constructions in a network – is a much more stimulating undertaking. In general, however, the main focus of this thesis is not on the precise source of the constructions at hand, but rather on their establishment and stability in the system. This is also motivates the neglect of language contact in the discussion.

1.6. Structure of the thesis

This thesis is divided into three major parts: first, the phenomenon under investigation in the thesis is introduced, and the main empirical data analysis is presented. More specifically, this part is structured as follows: Chapter (2) shows how the synchronic phenomenon of the dative alternation is conceptualised in construction grammar, and explains why this theoretical framework is suitable for the task set up for the thesis. Chapter (2.1) comments on argument structure constructions, and in particular the DOC, as dealt with in this framework, including a discussion of the semantics of the Present Day English DOC. This chapter also lays the ground for subsequent analyses of the construction's semantics. Chapter (2.2) is concerned with the dative alternation in construction grammar, focussing on the conceptualisation and role of the alternation.

In Chapter (3), the diachronic development of ditransitives is considered in more detail, and previous studies on these issues are reported on. For that purpose, the history of ditransitives is embedded in a discussion of more general changes that are of relevance to their development are dealt with. The first part of this chapter (3.1) comments on the various changes in question one by one, since I regard the emergence of the dative alternation as an effect, or response to such system-wide changes: Chapter (3.1.1) provides information on the loss of case marking at the transition between Old and Middle English, followed by an account of how the dative alternation came into being (3.1.2), and a discussion of changes in the semantics of the construction(s) involved (3.1.3). Last, the phenomenon of word order fixation both on the clause level and concerning the order of the objects

of ditransitives is dealt with (3.1.4). The second part of the chapter then reviews proposals on possible correlations and causal relationships between the individual changes (3.2). On the basis of the literature overview, the last and data oriented chapter of this part (4) starts by establishing the explanatory structure of the present account, and introduces the main hypotheses. Chapter (4.1) then reports on the data and methodology used to address these hypotheses in the empirical investigation carried out in the course of the project, whereas (4.2) presents the results of said study.

The second main part of this thesis (Chapter 5) is concerned with evolutionary linguistics: in Chapter (5.1), the basic principles of an evolutionary theory of language and language change are discussed, and the advantages of taking an evolutionary approach to the history of the dative alternation are explained. Chapter (5.2) introduces the second main method employed in the study, namely evolutionary game theory, and presents the results of applying this model to the development of the dative alternation.

The third major part of the thesis includes the crucial discussion chapters of this work, and puts forward the key arguments (Chapter 6). In Chapter (6.1), the innovative framework of evolutionary construction grammar is presented; in this chapter, the two approaches of construction grammar and evolutionary linguistics are merged, and working solutions for various problematic issues are proposed. Chapter (6.2) then provides an evolutionary construction grammar account of the emergence of the dative alternation in English, attempting to come up with one coherent narrative of this development and investigating the various implications the empirical results of the studies have for the suggested hypotheses. This chapter is divided according to three main aspects: Chapter (6.2.1) concentrates on the main changes as envisaged in an evolutionary constructionist approach, while Chapter (6.2.2) comments on the issue of correlation and causality in this regard. In Chapter (6.2.3), competition between choices in language sub-systems is contrasted with competition on the level of language strategies, and possible gains to be had from such a distinction are reviewed. Chapter (6.2.4) then provides a summary and round-up of this discussion, presenting a conclusive scenario for the diachronic development of ditransitives in English.

Last, the main issues and findings of the present thesis are repeated and minor and major conclusions are drawn from this (Chapter 7). Chapters (8) and (9) will offer additional information such as a list of references and abstracts, as well as details on the author.

PART I

2. PDE ditransitives in usage-based construction grammar

The English double-object construction, as is clear from overviews such as Mukherjee (2005: Ch.1), figures prominently among the linguistic examples drawn on in theoretical approaches to argument structure (and the interface of syntax and semantics) of any kind. It is therefore hardly surprising that it is also often found in construction grammar accounts of such issues (cf. Colleman & De Clerck 2011: 186). Interestingly enough, however, the dative alternation, which is definitely among the most intensively studied alternation relations in English and also cross-linguistically, has not received much attention in constructionist literature until rather recently. Quite on the contrary, the existence of syntactic alternations in general has been disregarded to a great extent (cf. e.g. Goldberg 2002). This (deliberate) negligence, which has been heavily criticised accounts generally sympathetic to the constructionist enterprise (cf. e.g. Mukherjee 2005: 52-54), has been confronted in later construction grammar publications such as Cappelle (2006) and Perek (2012, 2015). In their accounts, alternations have an independent theoretical status instead of being viewed as a mere epiphenomenon. That is, the link between members of an alternation (e.g. the DOC and the *to*-POC) does not merely indicate rough synonymy due to the fact that the verbs instantiating the constructions largely overlap. Rather, the constructions are taken to be strongly linked to each other, and also generalised over, i.e. they are connected by a schematic construction, the 'constructeme'. These suggestions will be adopted in later parts of this thesis, and will be presented in more detail in the following sections. First, however, constructionist approaches to the DOC will be dealt with, starting with the question of what roles the verb and the (argument structure) construction play in determining the semantics of a clause (2.1.1). In other words, I will briefly discuss the relationship between verbal and constructional meaning, giving particular focus to Perek's (2015) theory of usage-based verb valency, and the lexical origin of constructional semantics. While this discussion is of course not restricted to the DOC, but pertains to argument structure constructions in general (or even constructions in general), the DOC will be used to illustrate the arguments made. In the subsequent section (2.1.2), varying constructionist approaches to the semantics of the PDE DOC, meaning the construction's prototypical and more peripheral sub-senses, will be presented. Finally, I will review differing constructionist approaches to argument structure alternations, starting with views against independently represented alternations (2.2.1). This is followed by an introduction of pro-alternation approaches, most importantly Cappelle (2006) and Perek's (2012, 2015) 'allostruction/constructeme' model (2.2.2). Chapter (2.2.3) will then briefly comment on distributional asymmetries in the dative alternation and possible explanations for these phenomena; furthermore, the concept of 'alternation-based productivity' will be introduced. Last, Chapter (2.3) will restate the most relevant points in taking a construction grammar approach to the dative alternations and its members in PDE.

2.1. Argument structure constructions and the DOC

This chapter will start by discussing the semantic contribution of verbs and constructions, respectively, in determining the meaning of a clause. While constructionist accounts have often focussed on the part played by the abstract schema, taken to specify the specific semantic roles and thus the arguments involved in a clause, it is clear that the input of the verbs instantiating the construction must play a role as well. The reasons for including this discussion in this thesis are as follows: first, the following chapter serves as a general (although of course not comprehensive) introduction to the main principles of construction grammar approaches to argument structure constructions, and to the DOC and the *to*-POC in particular. This is evidently relevant for the present study, since it is concerned with the history of these patterns, and providing a clear definition of the units dealt with and investigated is clearly of interest to this endeavour. Second, I will in this chapter advocate the particular framework of usage-based construction grammar: as will be argued, a framework which assumes linguistic representation to be essentially shaped by linguistic usage (and inversely, takes usage to directly reflect representation) is clearly useful for historical linguistic investigations as presented in this thesis. This is because the empirical focus in such studies (and also in the present project) is necessarily on the textual evidence that is available. Taking a bottom-up approach, which views units identifiable in texts as indicative of cognitive patterns is therefore certainly of advantage.

The second part of this chapter will then concentrate more explicitly on the semantics of the double object construction in Present Day English, briefly dealing with the different sub-senses that have been proposed for the construction. The main aim in this section will be to determine whether a basic meaning of 'transfer' is associated with the DOC, or whether its meaning is more diverse and idiosyncratic. Having a clear idea of what the semantics of the DOC in PDE entail is important for the present thesis in so far as changes to the meaning of the construction play a crucial role in the development of the dative alternation in the history of English, and constitute one of the major foci of this study. Finally, the section will close by relating the discussion of the beginning (verbs vs. constructions) to the semantics of the DOC: more precisely, it will be shown that the semantics of the PDE DOC can be captured in a lexicality-schematicity hierarchical network as proposed by Croft (2003), which is able to capture for both item-specific and more abstract knowledge.

2.1.1. Argument structure as a joint venture between verbs and constructions

In contemporary approaches to argument structure, the question of the precise role played by verbs in determining how many and which types of arguments are realised, continues to spark great interest. Essentially, there are two basic viewpoints on the issue, as well as an intermediate perspective. On the one side, there are so-called 'projectionist' or 'verb-centric' approaches, which emphasise the part of

the verb, and consider the realisation of arguments to represent projections of the constraints of the lexical items (Perek 2015: 16).[23] On the other hand, we find more recent constructionist approaches where much attention is paid to the contribution of schematic argument structure constructions, while the input of lexical verbs is restrained. Finally, accounts such as Perek (2015), *inter alia*, constitute mixed approaches, since although many assumptions underlying it are explicitly in line with a constructionist framework, the need for richer lexical knowledge and a 'division of labour' relationship between verbs and constructions is highlighted (cf. also e.g. Herbst 2011). Such a usage-based constructionist perspective on argument structure furthermore points out the importance of lexical material in the emergence of constructional meaning, thus stressing the interrelatedness of both sides of the coin even more. As will become clear in the course of this section, this thesis follows Perek (2015) in taking a usage-based, joint-venture approach to argument structure.

The central issue that lies at the heart of this debate is the fact that most verbs show the following characteristics: first, general patterns can be observed with similar verbs, i.e. there seems to be a systematic correlation between aspects of verbal semantics and syntactic behaviour (cf. the structure of the respective pairs in (14-(*16*]). Second, the same verb can appear in more than one pattern (cf. bake in the examples under [b] in (14-(*16*], instantiating an intransitive, transitive as well as a ditransitive structure).

(14) a. John *ran*
b. John *baked*

(15) a. John *made* a sandwich
b. John *baked* a cake

(16) a. John *gave* **Mary** a book
b. John *baked* **Mary** a cake

The main tenet of constructionist approaches to argument structure now is that the patterns observed with verbs are not determined by the verbs themselves, but rather constitute independent constructions. These are located on a rather abstract, schematic level, and are stored alongside more substantive verb-constructions. That is, 'skeletal syntactic constructions', which map a range of argument roles specified by an abstract event description onto morphosyntactic form (and functional categories) are recognised "as meaningful in their own right" (Goldberg 1995: 21). On this account, there is a schematic double-object construction involving three roles, namely agent, recipient and patient/theme in a scene of 'causing to receive'. The agent is then linked to (or realised as) the subject,

[23]Projectionist or 'lexicalist' accounts include e.g. Levin (1985, 1993); Levin & Rapoport (1988); Rappaport Hovav & Levin (1988, 1998); Gropen et al. (1989); Pinker (1989); Levin & Rappaport Hovav (1995, 2005, 2008); for an overview as well as critique of the main tenets of these approaches see Goldberg (1995: 9-23), Croft (2003: 50-53), as well as Perek (2015: Ch. 2.1.1); also Müller & Wechsler (2014) vs. Goldberg (2013, 2014); Boas (2014).

while the recipient and theme of the transfer event are mapped onto the first and second object, respectively (cf. Figure 2).

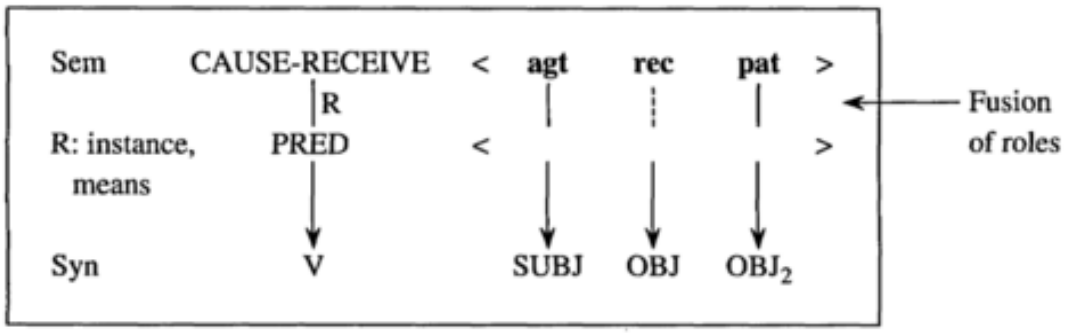

Figure 2 The schematic double object construction in Goldberg's model (1995: 50)

While a construction specifies particular argument roles, individual verbs have particular participant roles defined on the basis of their frame-semantic, relational meaning. If a verb occurs in an argument structure construction, the latter type of roles are said to 'fuse' or integrate with the former (Goldberg 1995: 50-52; Perek 2015: 24; cf. also Jackendoff 1990). This fusion is determined by two principles: the semantic coherence principle, as well as the correspondence principle, the first of which states that roles need to be semantically compatible in order to be fused (Goldberg 1995: 50). In more general terms, this means that the semantic frame that is associated with a verb needs to be congruent with the meaning of the abstract construction (cf. also Perek 2015: 24). The correspondence principle, on the other hand, is concerned with profiling of arguments in that lexical profiling and expression of a participant role necessarily entails fusion with a profiled argument/ semantic role that is specified by the construction (Goldberg 1995: 50).[24] If both principles are fulfilled, and there is perfect agreement between the constructional and verbal roles, we can speak of 'inherent compatibility' (Perek 2015: 28). In the case of the DOC, both semantic compatibility and correspondence of profiled roles are straightforwardly given with verbs that express giving events such as *give* or *hand*. This is because the meaning of the construction 'X causes Y to receive Z' is comprised (or elaborated) by the verbal semantics. Furthermore, there is a one-to-one correspondence between the profiled semantic roles of the construction, and the participant roles associated with the verb, which are then mapped onto the respective syntactic positions in a clause (cf. Figure 3).

[24]'Profiled' here refers to argument roles being highly prominent and always accessed (cf. Goldberg 1995: 44; also Langacker 1987).

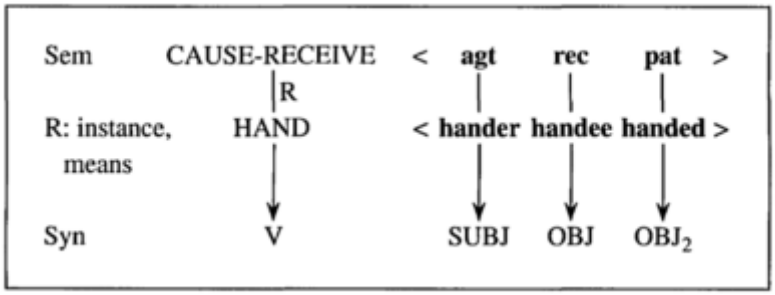

Figure 3 Composite fused structure of the DOC and hand (Goldberg 1995: 51)

As Perek (2015: 25) points out, the "stipulation that the participant roles of the verb must be *construed as*, though not necessarily *be*, instances of the argument roles of the construction, allows for some flexibility in determining semantic compatibility" [original italics]. Such imposed construals are, for example, responsible for the interpretation of goals as recipient arguments in clauses like *Joe sent Chicago a letter*. Similarly, the appearance of verbs of future transfer or communication in the DOC (cf. also Section 2.1.2 below) can be explained as metaphorical extensions or mediations of verbal meaning, with the communicated messages being construed as transferred objects. Other issues that can occur in the fusion of verbal and constructional roles are mismatches in profiling or number of roles (as well as other violations of constructional constraints). In these cases the construction may contribute 'unusual' or normally absent meaning aspects to a clause, thereby semantically enriching it. As to the first, consider the example of *mail*, which involves two lexically profiled participant roles ('mailer' and 'mailed'), and an unprofiled third role of 'mailee'. The DOC does, however, not show any asymmetry in profiling, as all argument roles are of equal salience. Therefore, the mailee is elevated to profiled status in a composite fused structure of DOC and verb. In other instances, a whole new meaning component might be added to a verb's meaning: for instance, the roles of 'kicker' and 'kicked' (or 'baker' and 'baked') are regularly associated with the semantics of the verbs *kick* (or *bake*). By contrast, the additional recipient argument in sentences like *John kicked Mary the ball*, which is not linked to an independently existing participant role, is provided by the construction itself (Goldberg 1995: 52-56; Croft 2003: 50-53; Boas 2013: 236-237; Perek 2015: 25-27). This phenomenon is often referred to as 'coercion' (cf. Michaelis 2005; Lauwers & Willems 2011).

In sum, construction grammar thus views argument structure as a joint venture between verbs and constructions, both of which contribute certain aspects of meaning of a licensed clause. In this, they stand in stark contrast to projectionist accounts, which place a strong focus on the verb, and account for multiple argument realisation by assuming verbal polysemy.

Although this perspective certainly has its merits, one intrinsic problem of the account is the question of how we can determine how many and which participant roles are in fact provided by the verb (or the construction, respectively). Particularly conspicuous in this context are verbs which are not clearly associated with one basic pattern, but instead regularly occur in different constructions,

each of which stresses distinct aspects of the 'conceptual import' of the verb (Perek 2015: 28; cf. also Fillmore 1977; Langacker 1987, 2008; Talmy 1996, 2000; Croft 2012). A case in point is the verb *sell*, which among other options can appear with both mono-transitive and ditransitive (DOC) syntax. These appearances differ in regard to profiling: in the former, only the onset of the transfer (*John sold a book*) is profiled, while the latter profiles the entire event of 'seller causes buyer to receive goods' (e.g. *John sold Mary a book*). Since both of these patterns are very frequent, two ways of conceiving of the basic valency of the verb are possible. One the one hand, it can be taken as a two-participant verb, with the DOC providing the additional component of recipient and indirect object argument in a three-participant construal. On the other hand, it can be assumed to inherently specify three participants. In the latter scenario, coercing the verb into a mono-transitive construction would involve the subtraction of an argument rather than adding meaning facets, which intuitivelty strikes one as awkward. Also, it seems that most verbs rarely express all possible participant roles associated with them (Perek 2015: 30-31, drawing on Langacker 2008). Therefore, assuming that the default situation is one of profiling the whole semantic frame, i.e. all roles, even though they will not be evoked in a majority of cases, seems counter-intuitive, and not too conducive to cognitive effectiveness.

In general, when taking into account the role of different construals of an event, the postulation of a single verb sense with much information contributed by the construction is difficult to maintain (cf. Perek 2015: 33; also Langacker 2009). This is further supported by the fact that many verbs show a considerable degree of idiosyncratic behaviour, which can hardly be captured by highly abstract constructions. This indicates that a large amount of item-specific knowledge needs to be stored alongside the schematic argument structure constructions (cf. Perek 2015: 33-37; also Boas 2003, 2005, 2008, 2013; Nemoto 2005; Iwata 2008; Faulhaber 2011; Herbst 2011).[25]

Based on these issues, Perek puts forward a usage-based account of argument structure, with the main tenet that a verb is not restricted to one particular construal of its semantic frame, but can be conventionally associated with a variety of them. This means that a verb can have more than one lexical entry with corresponding participant roles (Perek 2015: 43). However, and crucially for his approach, new entries are not established each time a verb is used in an innovative pattern, but everything is dependent on frequent usage. The number of entries for a lexical item therefore results from usage rather than being entirely arbitrary (Perek 2015: 43).[26]

[25]Cf. e.g. the unacceptable (or at least unusual) use of *donate* or *whisper* in the DOC, as discussed below.
[26]The main benefit of Perek's account (apart from the elaboration and refinement of a constructionist view on argument structure) is that he takes great care to ground his assumptions in empirical evidence. Conducting reaction time experiments coupled with corpus analyses, he tests the hypothesis that the cognitive status of valency patterns (that is, the frame of participant roles associated with a particular verb) is related to frequency of occurrence, finding that this indeed seems to be the case.

In sum, this perspective reduces the role of abstract constructions and foregrounds the part played by verbs to a higher extent than other constructionist accounts. Nevertheless, the fundamental principles of construction grammar are maintained. Incidentally, much of this discussion is reminiscent of and also implicitly or explicitly present in a number of constructionist approaches, namely those which rely on the postulation of a schematicity cline or hierarchy, able to capture both item-specific knowledge and generalisations (cf. Croft 2003; Goldberg 2006; Boas 2008; Traugott & Trousdale 2013; Barðdal & Gildea 2015). The specific assumptions that these approaches make will be discussed in the following section.

The usage-based approach to the relationship between verbs and constructions is then summed up nicely by Diessel (2015: 314) as follows:

> One can think of the relationship between lexemes and constructions as part of a probabilistic network shaped by language use. On this account, verbs (and other lexemes) and constructions are related to each other by connections with graded activation values that are determined by the combined effect of general semantic criteria and the language users' experience with particular lexical expressions and constructions.[27]

As already mentioned above, usage-based constructionist approaches furthermore view lexical material as essential in the emergence of constructional meaning, suggesting that speakers' experiences with concrete, 'fully filled' patterns provide the fundamental basis for linguistic structure (Diessel 2015: 312). The close relationship between the meaning of an argument structure construction and its usage, that is, its verbal distribution, is evidenced by a number of issues, including distributional as well as acquisition biases. For example, it has been noted that constructions are typically associated with specific words or even one single verb whose semantics very closely match the meaning of the construction (cf. Diessel 2015: 312; Perek 2015: 80; also Rostila 2007). Moreover, constructions tend to be used with verbs that are semantically compatible or at least connected in meaning to the construction as a whole. This is taken to indicate that the meaning of the argument structure construction is in fact abstracted from the verbs instantiating it.

Evidence for these assumptions comes from corpus studies, more precisely from collostructional analyses as introduced by Stefanowitsch & Gries (2003), and as also included in the present thesis (in a modified version, namely distinctive collexeme analysis). As they point out, such analyses can be used to "determin[e] the degree to which particular slots in a grammatical structure prefer, or are restricted to, a particular set or semantic class of lexical items" (Stefanowitsch & Gries 2003: 211). Taking collostruction strength as pointing towards the extent of semantic compatibility of a verb with a construction, they find that the verb most strongly attracted to the DOC in the ICE-GB corpus is, as expected, *give*, which can thus be considered a good prototype of verbs with the same structure (cf.

[27]Cf. also Croft (2003: 65): "Speakers are not exposed to verbs in isolation, nor are they exposed to schematic argument structure constructions without verbs in them".

Stefanowitsch 2006; Stefanowitsch 2013). Further verbs clearly associated with the DOC in Stefanowitsch & Gries' (2003) as well as Stefanowitsch' (2006) data include communication verbs such as *tell, ask* or *show* as well as other verbs of transfer (concrete transfer in the case of *send*, and intended/future transfer in *offer*). This supports the often found proposal that the meaning of the DOC is one of 'transfer' (cf. below; also e.g. Goldberg 2013: 19; also Green 1974; Erteschik-Shir 1979; Pinker 1989; Goldberg 1992; Goldberg, Casenhiser & Sethuraman 2005; Rappaport Hovav & Levin 2005). What is moreover interesting is that those collexemes that are strongly repelled by the DOC despite occasionally being used in it (such as *make*, *keep, do*, or *have*) evidently do not inherently express transfer. Also, most of them are restricted to fixed phrases (*do someone a favour*). Accordingly, the probability of them strongly determining the constructional semantics is relatively low (Stefanowitsch 2013: 294). Incidentally, however, the fact that verbs are capable of appearing in constructions that they are not typically associated with, does suggest that verbs and constructions are at least partly independent of one another (Stefanowitsch 2013: 5; cf. also Stefanowitsch 2006: 65).[28]

The idea that there are distributional biases in the use of constructions towards certain, semantically highly compatible, verbs also finds corroboration in studies on language acquisition. For instance, Goldberg (2006: 92) claims that "[t]he dominance of a single verb in the construction facilitates the association of the meaning of the verb in the construction with the construction itself, allowing learners to get a 'fix' on the construction's meaning". As to the DOC, Goldberg, Casenhiser & Sethuraman (2004: 298) find that the most frequent verb in this construction in a corpus of child-directed speech is again *give* (accounting for about 20% of all DOC tokens). Tests on the cue validity of the DOC as a predictor of transfer meaning further substantiate the assumption that constructional meaning is derived from the semantics of the verbs that typically appear in this construction. These verbs are consequently also essential in the acquisition of constructional meaning (cf. Goldberg 2006: 109-111, as well as Casenhiser & Goldberg 2005; Boyd, Gottschalk & Goldberg 2009 for similar studies). Such effects are not limited to child language acquisition, but are found in second language acquisition and adult speech in general as well: Perek & Lemmens (2010), among others, show that up to 50% of DOC tokens in the ICE-GB corpus in fact feature *give*. This corresponds to Stefanowitsch & Gries' (2003) results.[29] It is then assumed that from such highly-frequent, prototypical instances, speakers abstract more general, abstract constructions at various levels of schematicity, which may link to a number of semantically highly compatible, but also to less compatible verbs. These abstractions are stored and processed together with more substantive exemplars, rather than replacing them (cf. above; Stefanowitsch 2013: 9; Perek 2015: 111; *inter alia*).

[28]As will be discussed below, repelled items do include semantically compatible verbs such as *say* as well. The non-occurrence in or at least strong resistance to the DOC of such items requires explanation.

[29]Cf. also Tomasello's 'verb island hypothesis', stating that a child starts out with item-specific knowledge, and only gradually abstract over similar instances (cf. e.g. Tomasello 1992).

In the following section, the semantics of the DOC will be dealt with in still more detail, linking the preceding discussion to Croft's (2003) proposal of verb-specific, verb-class-specific and abstract constructions in the case of the DOC. Furthermore, idiosyncratic or unusual DOC uses will quickly be dealt with.

2.1.2. The semantics of the DOC

The precise semantics of the PDE DOC have received considerable attention so far in both non-constructionist and constructionist approaches. Within the latter, one of the best-known accounts is Goldberg (1995). In her view, the English DOC constitutes a prime example of constructional polysemy, meaning that "the same form is paired with different but related senses" (Goldberg 1995: 33). These different senses vary in degrees of prototypicality: the central sense is thought to be one of 'an agent volitionally and successfully causes a willing, animate recipient to receive an object'. In accordance also with the discussion above, *give* is assumed to be the verb most prototypically associated with the DOC. This is because its semantics correspond most closely to this basic meaning. Apart from verbs which inherently denote acts of giving, the central sense of 'successful transfer' also includes verbs of ballistic motion (*throw, kick*) and verbs of deictically specified direction (e.g. *bring, send*). Drawing on previous work on ditransitives such as Green (1974), Gropen et al. (1989), Pinker (1989), and Levin (1993), Goldberg (1995: 75) proposes the following additional sub-senses of the DOC. A further (sixth) sense is added in Goldberg (2002: 333):[30]

a) Conditions of satisfaction imply 'X causes Y to receive Z' (e.g. *promise, owe*)
b) 'X enables Y to receive Z' (e.g. *permit, allow*)
c) 'X causes Y not to receive Z' (e.g. *refuse, deny*)
d) 'X intends to cause Y to receive Z' (verbs of creation or obtaining, e.g. *bake, get*)
e) 'X acts to cause Y to receive Z' (verbs of future giving, e.g. *leave*, *bequeathe*)
f) 'X causes Y to lose Z' (e.g. *cost*)

All of these senses are linked to the central sense by so-called 'polysemy links', specifying the kind of semantic relation between them. Several other uses of the DOC are thought to relate to the central sense via metaphorical extension links, which define the nature of the metaphorical mapping between two constructions. That is, expressions such as *John gave Mary a kiss* or *John told Mary the news* constitute extensions from the central sense, the source domain (Goldberg 1995: 33, 75-77, 141-151). The first of these is, for example, licensed by the metaphor 'actions that are intentionally directed at another person are entities transferred to the person' (Goldberg 1995: 149). The latter, by contrast, is

[30]Cf. also Wierzbicka (1988: 359-387) and Hunston & Francis (2000). As Colleman & De Clerck (2011: 190) remark, "the majority of in-depth semantic analyses of the present-day DOC include a more or less fine-grained overview of double object verb classes as a crucial part of the overall analysis, regardless of their exact theoretical orientation". This means that the assumption of an inventory of verb-classes associated with the DOC is not restricted to constructionist thinking, but has been recognised for quite some time.

an instance of the 'conduit metaphor', which understands communicated messages as travelling towards and being 'received' by the listener (Reddy 1979). Similarly, John showing Mary a picture can be conceptualised as a perception moving towards the perceiving person (Goldberg 1995: 148). Cases that violate certain constraints of the DOC, namely that the agent be volitional, and the recipient animate (as in e.g. *John gave Mary the flue* or *The music lent the party a festive air*), can be explained as instantiating metaphorical extensions of 'causal events are transferred entities'. The latter instance furthermore illustrates coercion of inanimate elements into the construction (Goldberg 1995: 143-148).

Colleman & De Clerck (2008) follow Geeraerts' (1998) analysis of the Dutch DOC as involving semantic extensions from a source meaning of 'beneficial transfer of a material entity from an agent to an active recipient' along various dimensions like direction (towards or away from a participant), effect of the transfer on the animate participants (beneficial, maleficial, neutral) as well as nature of the transferred entity and ensuing possessional relation (concrete, abstract, communicative, or else).[31] Furthermore, they provide an elaborate account of how the seemingly idiosyncratic DOC verbs *forgive*, *envy* and *(not) begrudge* are linked to the construction's semantics (cf. also Colleman 2006). In contrast to Goldberg (1995: 131-132), who argues that the use of these verbs in the DOC is due to etymological reasons, with both verbs originally meaning 'give',[32] the authors argue that their use is motivated by a number of shifts (on more than one semantic dimension), including

> (i) a metaphorical extension from **material** to **abstract** transfers with (ii) a shift in direction from a transfer **towards** the indirect object to a transfer **away from** the indirect object and/or (iii) an extension from the **actual causation** of a possessional transfer to an **attitude** towards such a transfer [original boldface]. (Colleman & De Clerck 2008: 202)

A similar explanation is used to account for the continuing appearance of verbs of dispossession such as *cost* in the DOC (17). This occurrence implies, as already mentioned above, that John caused Mary to LOSE rather than receive a job, i.e. a possessive relationship is not established, but cancelled by the event. As pointed out by Colleman & De Clerck (2008: 204-206), the DOC use is untypical for verbs of dispossession in so far as the subject is not volitional and agentive, and does not necessarily come to actually possess the theme. Nevertheless, it is clearly dispossessive in that the animate object is caused to lose something (cf. Colleman & De Clerck 2009: 34; also Pinker 1989: 111; Goldberg 2002).

(17) John *cost* **Mary** her job

[31]Importantly, Geeraerts (1998) "advocates a representation with semantic extensions along various dimensions, each of which corresponds to a particular component of the construction's semantic core" rather than Goldberg's "radial set representation with a basic sense and a number of individual additional senses which are directly linked to this basic sense" (Colleman & De Clerck 2008: 201).

[32]While *forgive* earlier meant 'to give, to grant', *envy* denoted 'to give grudgingly' or 'refuse to give' (cf. OED, s.v. *forgive/envy*; Goldberg 1995: 132). It should be noted, however, that this sense of *envy* is in fact attested only rather late.

This sense could be considered as entirely idiosyncratic due to its great semantic distance to the central sense of transfer. However, it is to some extent expectable that a construction evoking frames of giving (or blocked giving as in the case of *deny*) may encode antonymic relations as well (Colleman & De Clerck 2008: 204-205).[33] The use of *cost* thus represents an extension of the basic sense of the construction along the dimension of directionality. Incidentally, *forgive* similarly involves the 'taking away' of an entity, since being forgiven can be construed as losing the burden of negative actions etc. one has to carry. 'Verbs of reverse transfer' such as *ask* in patterns *like John asked Mary the time/ a favour*, which express an inquiry or requirement towards the REC-argument pose a related issue (Colleman & De Clerck 2008: 196-198, 204-205, 2009: 34-36; cf. also Goldsmith 1980: 439; Goldberg 1995: 131-132; Geeraerts 1998).

Uses of this kind are clearly part of the semantic range of the DOC in (at least written formal British) English. Still, it should be noted that there is a striking difference in productivity and position in the semantic network of the DOC between such verbs and classes such as *giving*-verbs (Colleman & De Clerck 2008: 210; cf. also Mukherjee 2005). While the latter show a tight connection to the construction's core meaning – as demonstrated by e.g. Stefanowitsch & Gries' (2003) collostructional analysis – attitudinal verbs like *forgive* or *envy* are undoubtedly in the periphery of the network. Hence, they also have a higher probability to be affected by change.[34]

Apart from divergences in frequency, less prototypical verb classes also differ noticeably from more basic uses in respect to productivity: those DOC verb classes with low type frequency such as 'verbs of blocked transfer' (*deny*, *refuse*; (*18*a), attitudinal verbs (*forgive, envy, begrudge*) or dispossession verbs (*cost, fine, charge*,…?; (*18*b) are markedly less productive than verb classes more closely associated with the basic sense of transfer (or indeed unproductive).[35] This in line with Goldberg's (1995: 136) claim that a subclass that has a very low number of members (verb types) will be unproductive because there are too few instances to form a 'similarity class' (cf. also Barðdal 2008, 2009 on the role of type frequency for productivity).

(18) a. Sally *refused/denied/*prevented/*disallowed/*forbade* **him** a kiss (Goldberg 1995: 130)

b. Sally *cost/fined/charged/?lost/*robbed/*stole/*cheated/*stripped/*deprived* **him** £5

[33]See also Goldberg's (2002: 333) claim that "a concept and its antonym typically serve as strong associates for one another in psycholinguistic studies". Note that the use of *cost* in the DOC could also be motivated by a metaphorical interpretation of the event as 'X causes Y to receive the cost of Z'; cf. also e.g. *to charge so. an amount of money* as 'transferring so. the obligation to pay an amount of money'.

[34]Interestingly enough, privative *cost* is among the ten verbs most strongly attracted to the DOC in Stefanowitsch' (2006) analysis, with approximately 35% of a total of 65 tokens of the verb in the corpus (ICE-GB) appearing in the DOC. Even though this might be taken to point to a more central status of *cost* than expected, its frequency in the DOC is still significantly lower than that of other verbs, though (cf. e.g. *give*: 560 DOC tokens vs. *cost*: 23 DOC tokens, Stefanowitsch 2006: 64).

[35]According to Barðdal's (2008) approach to productivity, DOC uses of verbs of refusal should in fact be semi-productive, since they show low type frequency but high semantic coherence (= low schematicity). However, this does not seem to apply in this case.

A clear example of a highly productive class is the DOC sub-class of 'communicated transfer' or 'verbs of communication', as new lexical items emerging e.g. due to technological advances such as *to fax, e-mail, text, skype*, *whatsapp* or *snapchat* readily assume DOC syntax (19a-b; cf. also De Clerck et al. 2011; De Clerck, Delorge & Simon-Vandenbergen 2011; Bresnan & Nikitina 2009: 164-165).[36]

(19) a. I *WhatsApped* **him** the wee 'no phones' image (twitter.com; via Googlesearch)
b. she had *Snapchatted* **him** the naked selfie (viraltalktime.com; via Googlesearch)

Furthermore, more marginal uses are typically subject to regional and social variation concerning acceptability, and face greater (syntactic) constraints than other verb classes. The so-called 'derring-do' construction (*cry me a river*) is, for instance, more felicitous when used as a command, and with pronominal 'recipient'-arguments (Goldberg 1995: 150-151; cf. also Oehrle 1976). Last, a number of marginal verbs are frequently found only in fixed phrases, or show a clear predilection for light-verb, lexicalised strings, such as *do so. a favour* (cf. also Mukherjee 2005). Such strings, which are also often referred to as 'complex verbs' or 'complex predicates' typically have "a tripartite structure consisting of a verb of general actional meaning, most commonly *do*, *give*, *have*, *make*, and *take*, the indefinite article, and a deverbative noun" (Brinton & Akimoto 1999b: 2). Although many of these idiomatic combinations are transitives (*take a shower*, *make a decision*), a range of ditransitive verbs of this type can also be found.

An interesting case of high productivity plus constrained usage is the class of benefactive verbs or 'verbs of creation/preparation' (*bake, make, build, cook, sew, knit*, etc.). This sub-sense is sometimes treated as a separate category due to its paraphraseability by *for* rather than *to* (e.g. Kay 1996, 2005). However, it is in fact perfectly in line with the basic sense of transfer posited for the DOC, and can therefore be subsumed in the larger class of 'verbs of intended transfer' (e.g. Goldberg 1995).[37] Geeraerts (1998: 196) suggests that the benefactive DOC in fact evokes two sub-events, one of preparation or creation, and second, the transfer event of the outcome to a recipient (cf. Colleman 2010a: 205-206; also Fillmore 2007; Colleman 2010b). While these events can be extended to metaphorical preparation and transfer as in the case of other transfer-senses, the benefaction events denoted by the DOC are importantly restricted to recipient-benefaction. The construction therefore excludes deputatitve/substitutive benefaction, i.e. events in which a participant benefits but without receiving anything (Van Valin & La Polla 1997; Kittilä 2005; cf. also Colleman 2010b). Verbs associated

[36]A much discussed issue in this context is a number of dispreferences of the DOC concerning a range of verbs such as *donate*. These verbs, despite being semantically compatible with the construction, and part of productive sub-classes, are prevented from entering it. Typically, they are at the same time restricted to the prepositional paraphrase with *to*; therefore, the issue will be dealt with in the subsequent chapter.
[37]Its rather central place in the semantic network of the construction is also signalled by a number of verbs of creation/obtainment figuring prominently among the verbs most strongly associated to it in Stefanowitsch & Gries's (2003) analysis.

with such acts of pure or plain benefaction, where no transfer (whether actual or virtual) is involved, are prohibited from entering the DOC – consider the ungrammaticality of the examples in (20).

(20) a. *Can you *hold* **me** the door, please

b. *Sue *fixed* **Bill** the radiator (Colleman 2010b: 225)

This limitation of the benefactive DOC to certain verbs or events, namely those where the beneficiary is projected to receive the theme, is commonly referred to as the 'intended reception constraint' in the literature (Colleman 2010a: 194; cf. also e.g. Allerton 1978; Wierzbicka 1988; Jackendoff 1990; Langacker 1991; Wechsler 1995; Goldberg 2002; Nisbet 2005).[38] Although this constraint seems to hold generally, it is to some extent fuzzy: as Colleman (2010b: 195) points out, "whether a given event can be construed as involving intended causation of reception is a matter of degree rather than kind". The blurry boundaries between recipient benefaction and substitutive benefaction are nicely illustrated by the case of an idiosyncratic sub-type of benefactives often labelled 'derring-do' constructions. In sentences such as (21), the agent clearly does not transfer an entity, but instead acts in a courageous or in some way remarkable way, with the aim to impress and please another person observing the action or its outcome (Colleman 2010a: 226; cf. also Green 1974: 95; Fawcett 1987: 149; Van Valin & La Polla 1997: 383-384; Takami 2003: 211-212).

(21) a. *Crush* **me** a mountain (Goldberg 1995: 150)

b. They're going to *kill* **Reagan** a hippie (Green 1974: 95)

Goldberg (1995: 150-151) attempts to explain these uses by positing a metaphorical extension of the central sense of transfer along the lines of 'actions performed for the benefit of a person are objects transferred to the person' (but see Takami [2003: 208-209] for a critique of this proposal).

In sum, there is clearly a great deal of variability in the semantics of the DOC, both concerning the definition of the categories themselves, as well as inter-/intra-speaker acceptability judgements. At the same time, however, the construction is consistently and intimately associated with a meaning of transfer, with verb classes denoting events of physical or metaphorical giving displaying distinctly more prototypical features than other, more marginal and decidedly less frequent uses. Less clearly

[38]It should be mentioned, however, that there is again great variation (both regional and stylistic) concerning the strictness of this constraint. This means that we can observe a continuum of acceptability of benefactives, with the cut-off point varying between individual speakers and varieties (Colleman 2010b: 240). For example, instances such as *Open me the door* are reportedly perfectly acceptable in Yorkshire English (Petyt 1985: 236; referred to in Colleman 2010b). In contrast, uses like (i), which serve to stress the agentivity of the referent of the subject, are common in southern American vernacular speech (cf. Webelhuth & Dannenberg 2006: 36; Colleman 2010b: 227).

(i) Ima *drink* **me** some beers (twitter.com; via Googlesearch)

For an overview and detailed discussion of benefactives in PDE and other languages see Colleman (2010a, 2010b).

connected senses such as the 'derring-do' construction, although present, are certainly located at the periphery of the network, and are typically highly marked in some way, either regionally, syntactically, or else (cf. also Oehrle 1976; Goldsmith 1980; Gropen et al. 1989; Goldberg 1995).

Disregarding the question of how many and which particular sub-senses should be assumed for the PDE DOC, there is broad agreement on viewing narrowly defined sub-senses and verb classes as an integral part of studying the construction. A distinction between various senses moreover seems to be warranted considering empirical evidence such as Hay & Bresnan's (2006), who find that the vowel of the verb *give* is more centralised when used in a DOC expressing abstract, metaphorical transfer (as in *give a chance*) than with concrete giving events (*give a pen*); cf. also Bybee (2013: 57).

As to the question of how to analyse or represent these distinct sub-senses in a constructionist framework, this thesis follows Croft's (2003) lexicality-schematicity model, which represents a counter to Goldberg's (1995) polysemy model. As already mentioned above, Goldberg (1995: 38) treats the DOC as a prime example of constructional polysemy, and assumes a formally rather schematic construction radially linked to a number of senses One of these senses is the prototype meaning of transfer; other senses included are e.g. verbs of refusal, which clearly differ in their degree of centrality in meaning. That is, in Goldberg's approach the same form [S V OBJ1 OBJ2] is paired with different sub-senses, which are related through polysemy links. Croft (2003: 53-65), among others such as Kay (2005), vehemently argues against this approach. As he lays out, the variation that can be observed in the semantics of the construction is very different from polysemy as in the case of lexical items. This is because the sub-senses are systematically and clearly associated with (or indeed determined by) specific, mutually exclusive verb classes (Croft 2003: 56):[39]

> If the ditransitive construction were truly polysemous, one might expect that the verb *bring*, for example, would be found with ditransitive sense F [i.e. intended transfer], resulting in a meaning like 'X brings Z with the intention of causing Y to receive Z', or *kick* could also occur with ditransitive sense C [blocked transfer], resulting in a meaning like 'X kicks Z causing Y not to receive Z'. But we do not. Instead, it seems that the different 'senses' of the ditransitive construction are very closely tied to the verb classes that each 'sense' occurs with.

Instead of Goldberg's 'one abstract form - many meanings' representation, Croft therefore proposes a multi-level account with 'verb-class-specific constructions'. These sub-constructions include schematic slots for the arguments of the construction, yet delimit the range of verbs to those compatible with the meaning of the sub-construction. The subsidiary, lower-level generalisations involve particular semantic constraints concerning the verb slot, which emerge from and parallel the specific verb classes that are associated with them. This results in a modulated version of the basic transfer-meaning of the

[39]A similar discussion surrounds Goldberg's 'metaphorical extension' links (e.g. Boas 2003: 94-97, 2013: 250, n11; Kay 2005).

DOC (Perek 2015: 113). The difference between Goldberg and Croft is illustrated in the representation of the two sub-senses given in (22a-b) and (23a-b), respectively (cf. Croft 2003: 56-57).

(22) a. [[SBJ VERB OBJ1 OBJ2] / [actual transfer of possession]]
b. [[SBJ VERB OBJ1 OBJ2] / [enabling transfer of possession]]

(23) a. [[SBJ GIVING.VERB OBJ1 OBJ2] / [actual transfer of possession]]
b. [[SBJ PERMIT.VERB OBJ1 OBJ2] / [enabling transfer of possession]]

In addition to these verb-class-specific generalisations, Croft (2003: 58-60) posits an even lower level of verb-subclass-specific constructions and verb-specific constructions, on which irregularities such as the infelicitous use of *prevent* and *forbid* in the DOC (in contrast to *refuse* and *deny*) are stored. However, lower-level verb(-class-)specific constructions do not exclude the possibility of a highly general, superordinate DOC, which specifies the common denominators of all sub-constructions (Croft & Cruse 2004: 274; cf. also Croft 2003: 59-60). The DOC then represents a collection of constructions at various levels of schematicity, from verb-specific to schematic, via possible verb-subclass-specific and verb-class-specific constructions. This multi-layered, hierarchical network is illustrated in Figure 4 (cf. Croft 2003; Barðdal, Kristoffersen & Sveen 2011; Barðdal & Gildea 2015).

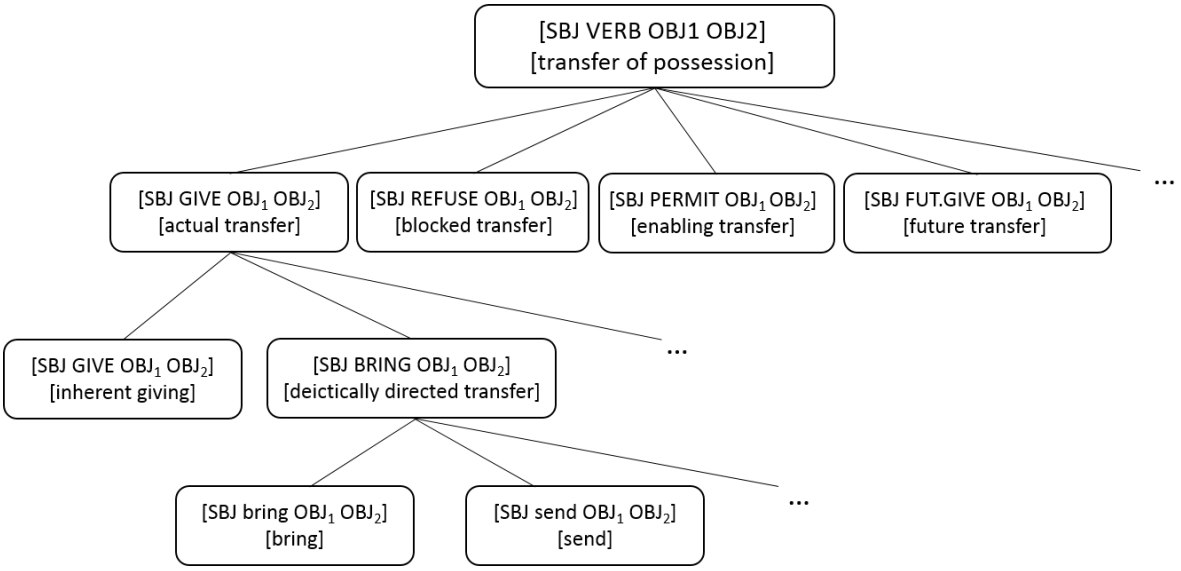

Figure 4 Constructional network of the DOC and its sub-constructions (cf. Croft 2003; Barðdal, Kristoffersen & Sveen 2011)

As can be seen, at the top of the network there is the abstract DOC, unspecified in regard to type of verb, and expressing a general meaning of 'transfer'. Below this, there are verb-class-specific constructions such as 'actual transfer', 'blocked transfer' or 'future transfer'. In contrast to the more general DOC schema, these sub-constructions specify the range of verbs able to appear with them. One level further down, we find verb-subclass-specific constructions; for instance, actual transfer can be divided into 'inherent giving' and 'deictically directed transfer', among other things. The specific verbs associated with these sub-sub-constructions then represent a limited sub-set of those in the

more abstract construction. Finally, verb-specific constructions are located at the bottom of the network, these constructions are item-specific and have a very narrow meaning, directly linked to the verb instantiating them. Although Croft does not explicitly integrate prototypicality into his account, the various sub-constructions can be assumed to differ in terms of entrenchment, frequency, productivity and prototypicality, along the lines discussed above.

To conclude, this chapter has confirmed that the Present Day English double object construction is reliably associated with a meaning of transfer. This is reflected in, or indeed results from the fact that the verbs which are most frequently found in the construction and which are acquired earliest, are verbs evoking events of transfer. The verb most prominently associated with the construction is *give*, indicating (concrete, physical) successful transfer from a volitional agent to a willing recipient. Apart from this core sense of giving, a number of other senses can be found, including transfer-related meanings such as creation (*build*, *bake*) or verbs of intended transfer (*offer*, *promise*). Furthermore, the DOC is found with more peripheral senses such as refusal (*deny*) or mentality/attitude (e.g. *forgive*, *envy*) – these can be viewed as metaphorical extensions along different dimensions. Although the DOC is therefore not limited to transfer, but also comprises senses quite removed from it, it is clear that these senses are less productive, and less central to the construction.

The PDE double-object construction is therefore seen as a schematic category associated with a core meaning of 'transfer' in this thesis. The different sub-senses, extensions of the basic transfer sense, constitute more specific, lower-level sub-constructions associated and hierarchically related to this abstract schema. On an even lower level, verb-sub-class-specific constructions and additional verb-specific constructions can be posited. This allows us to account for a number of idiosyncrasies and non-semantically motivated restrictions, while at the same time acknowledging that more specific uses are likely to be abstracted over. In general, the network of constructions such as the DOC is taken to be organised in a bottom-up way, with the meaning of higher-level schemas resulting from abstractions over specific verbs (and verb-classes, etc.) found with the same form.

The main reason for taking such an approach in this thesis is that the empirical focus of the present project is on textual attestations, meaning patterns which we can identify on the surface. If we take usage to fundamentally shape and determine cognitive representations in a bottom-up approach, and assume that frequency of linguistic constituents in usage plays a crucial role in representation and change, this enables us to draw conclusions about the competence level on the basis of actually attested data. That is, I will in the following work on the assumption that the the range of verbs found in the constructions at hand as well as their relative frequency in the historical corpus used in this study directly reflects how the constructions (and its components) are cognitively represented.

The following chapter will deal with the issue of alternations in construction grammar. This matter is clearly highly relevant for the present thesis, which focuses on the dative alternation in the history of English. The main point of debate in this regard is the status ascribed to the alternation: as will be shown, I subscribe to the view of Perek (2015), among others, in emphasising alternations as independent categories rather than superficial phenomena resulting from partial semantic overlap.

2.2. Argument structure alternations (and the dative alternation)

As already mentioned several times before, the dative alternation describes the ability of most ditransitive verbs to choose between two distinct patterns – the DOC on the one hand, and a prepositional paraphrase involving *to* or *for*, on the other hand (24-(*25*).

(24) a. John *gave* **Mary** a book
b. John *gave* a book **to Mary**

(25) a. John *baked* **Mary** a cake
b. John *baked* a cake **for Mary**

Depending on the framework, these constructions are typically seen as either entirely synonymous, partly synonymous, discourse-pragmatically distinct, or derived from each other. Furthermore (or related to this issue), the alternation as such is variedly considered as either merely epiphenomenal, or as having an independent theoretical status. In the following, I will briefly discuss some constructionist approaches to syntactic alternations in general, and the dative alternation in particular. Most notably, Goldberg's (1995, 2002) account will be compared to Cappelle (2006) and Perek's (2012, 2015) usage-based construction grammar view on alternating argument structures. Overviews of the dative alternation in various other theoretical frameworks can be found e.g. in Levin & Rappaport Hovav (2005: Ch.7), Mukherjee (2005: Ch.1), Ozón (2009: especially Ch.2), as well as Gerwin (2014: Ch.2). The wide range of (mostly) functionalist studies carried out on the semantic and discourse-pragmatic factors influencing the choice of one construction over the other will only be dealt with in passing in this chapter; they will, however, be mentioned in the subsequent chapter on the choice between order of objects and correspondingly, choice of construction, in the history of English (3.1.4; for a list of references see De Cuypere 2015a: 227). The present chapter will loosely follow Perek (2015) in starting with an introduction to alternations in (Goldbergian) construction grammar (2.2.1) before moving on to a more usage-based model which sees alternations as an integral part of the constructional network (2.2.2). Last, some observable distributional biases and possible explanations for these phenomena, as well as the concept of 'alternation-based productivity' will be dealt with (Chapter 2.2.3).

2.2.1. Constructionist views contra alternations/ contra the 'dative alternation'

Mainly as a reaction to earlier transformational and projectionist accounts, which tended to place a strong focus on alternating structures and their relationship to each other, many constructionist accounts have argued against 'overplaying' the relevance of paraphrase relations, and have downright denied or at least largely passed over any possibility of generalisations over formally distinct constructions. This is particularly evident in the following quotes by Goldberg, the second of which is a formulation of her so-called 'surface generalization hypothesis':

> The question that arises, on the account presented here, is not whether verbs are allowed to undergo a lexical or syntactic rule that alters their semantic structure or subcategorization frame, as it is typically taken to be. Rather, the question becomes: How are the semantics of the independent constructions related such that the classes of verbs associated with one overlap with the classes of verbs associated with another? (Goldberg 1995: 89)
>
> There are typically broader syntactic and semantic generalizations associated with a surface argument structure form than exist between the same surface form and a distinct form that it is hypothesized to be syntactically or semantically derived from. (Goldberg 2002: 329)

On such an account, the alternation is seen as merely an epiphenomenon of the fact that verbs associated with the respective constructions evoke similar semantic frames.[40] Despite this (seeming) semantic overlap, however, both argument structure constructions are considered to be independent of each other, and an independent analysis of the constructions is thought to be preferable. Rather than conceding a central role to alternations, the advice is thus to not make too much out of the possible paraphrase relationship between them (cf. Goldberg 2002: 329; also Michaelis & Ruppenhofer 2001: Ch.3; Perek 2015: 148-149). As Perek (2015: 149) points out, Goldberg's account accordingly privileges 'vertical' relations between a construction and its instantiations, in that different tokens of a construction (involving different verbs) are taken to be more alike than instances of the same verb in different argument structure constructions, related through 'horizontal' links. The relevance of the latter relations are in general greatly downplayed.

As to the representation of the DOC paraphrases (regardless of their relationship), the *to*-POC is analysed as a daughter of the 'caused-motion'-construction, which expresses a central meaning of 'X causes Y to move Z' and also licenses instances such as those in (26). In distinguishing between a 'caused-motion' analysis of the *to*-POC and a 'caused-possession' meaning of the DOC, Goldberg is in line with a wide range of other approaches stressing that in the *to*-POC, the trajectory of a path is

[40]One consequence of this approach is also that the DOC is viewed as one unified constructions regardless of the possible paraphrases, as discussed above. This goes against accounts such as Kay (1996), who distinguishes between those DOC uses paraphrased by *for* (the benefactive DOC) and those paraphrased by *to* (the recipient DOCs).

profiled, while the DOC emphasises the possessive relationship (cf. e.g. Langacker 1991: 13-14; but also Pinker 1989; Pesetsky 1995; Panther 1997; Harley 2002; Krifka 2004).

(26) a. Joe *kicked* the bottle **into the yard**
b. They *sprayed* the paint **onto the wall**
c. Frank *sneezed* the tissue **off the table**
(examples taken from Colleman & De Clerck 2009: 11)

The precise account is, however, slightly more complex, because some uses of the *to*-POC are claimed to represent a metaphorical extension ('transfer of ownership as physical transfer') of the larger caused-motion construction. The relationship between the caused-motion construction and the paraphrase, labelled 'transfer-caused-motion cxg' is illustrated in Figure 5 (Goldberg 1995: 90). Crucially, this metaphorical extension does not account for *to*-POCs denoting a scene of actual, physical transfer as but only for more abstract transfer events (cf. Goldberg 1995: 89-97; cf. also Colleman & De Clerck 2009: 16). In other words, examples such as *John gave an apple to Mary* constitute simple instantiations of the caused-motion construction, while *John showed an apple to Mary* expresses a metaphorically extended caused-possession sense. Since it is only the transfer-caused-motion construction that is semantically similar to the DOC (indicated by the modified meaning of CAUSE-RECEIVE rather than CAUSE-MOVE in the box on the bottom), it is consequently also only metaphorical transfer events which are linked to the DOC by a synonymy-link; cf. Goldberg (1995: 91): "The semantic extension (via metaphor) is S(emantically) synonymous with the ditransitive construction [i.e. the DOC]".

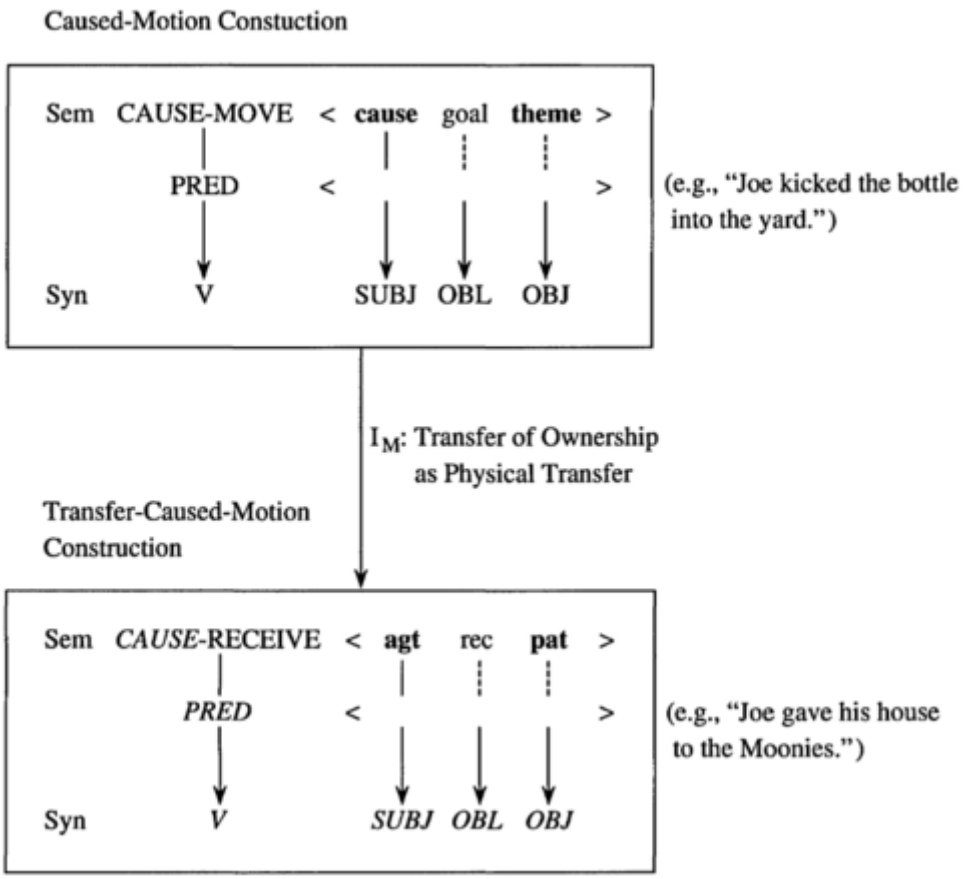

Figure 5 Representation of the caused-motion construction and its metaphorical extension (transfer-caused motion); cf. Goldberg (1995: 90)

What follows from this two-fold analysis is that pairs such as those in (27) are semantically non-synonymous, with the first example denoting 'caused possession' in contrast to (b) expressing 'caused motion'. The sentences in (28), on the other hand, share the same meaning, since metaphorical transfer rather than concrete transfer is evoked. (As will be shown below, this division is rejected in the present thesis, i.e. both concrete and metaphorical *to*-patterns are taken to be synonymous to the DOC).

(27) a. John *gave* **Mary** an apple
b. John *gave* an apple **to Mary**

(28) a. John *gave* **the Moonies** his house
b. John *gave* his house **to the Moonies**

As to the issue of synonymous constructions, synonymy is taken to be strongly dispreferred in general on Goldberg's account – see the principle of no synonymy, which states that syntactically distinct constructions need to be semantically or pragmatically distinct. Therefore, it is assumed that the constructions (the DOC and *to*-POC instantiating abstract transfer) differ in aspects pertaining to

information structure, stylistics, or the like (Goldberg 1995: 67, 91; cf. also Goldberg 2002: 347).[41] [42] This assumption is, as pointed out below, perfectly consistent with contemporary functionalist investigations of the factors guiding the alternation. That is, several studies have shown that the two constructions typically differ in regard to the discourse-pragmatic status of the object arguments: while the DOC usually involves a given, topical recipient, the recipient in *to*-POCs is mostly discourse-new.

The *for*-POC, in contrast to the *to*-POC, is analysed as a combination of the transitive construction together with the 'benefactive adjunct construction' in Goldberg (2002: 333-336, 344-347). Thus, instances such as (29a), which constitutes a paraphrase for the DOC *Mina sent Mel a book*, form part of a larger group including patterns like those in (29b-c).

(29) a. Mina *sent* a book **for Mel**
b. Mina *sent* a book **for the library**
c. Mina *sent* a book **for her mother's sake**

Although this issue is not dealt with in more detail, the *for*-POC is furthermore implied to differ from both the DOC and the *to*-POC in involving a traditional adjunct rather than an argument (cf. e.g. *Mina bought a book yesterday for Mel* vs. ?*Mina sent a book yesterday to Mel* vs. **Mina bought/sent Mel yesterday a book*; Goldberg 2002: 331, 345).

The conclusion Goldberg finally draws in regard to the *to*- and *for*-POC is that "the only thing that the respective paraphrases share with the ditransitives [i.e. the DOC] is the quite rough paraphrase relations themselves" (2002: 333). This is not to say that alternations are entirely ignored in Goldberg's account. As just discussed, S-links are posited to hold between the constructions, and "[p]araphrase relations [are also claimed] to be relevant to online choices made in production" (Goldberg 2006: 44). Nevertheless, these relations are clearly not the focus of the investigation. This disregard for systematic and regular correspondences between formally distinct patterns has been challenged by a number of constructionist or construction grammar-sympathetic accounts including Mukherjee (2005: 53). It has also sparked the emergence of alternative approaches lending more importance to alternations (cf. e.g. Iwata 2005, 2008; Cappelle 2006; Boas 2010, 2011; García Velasco 2011; Perek 2015). In doing so, these accounts attempt to meet the constructionist tenet of doing justice to languages in their entirety – assuming of course that alternations are in some way or the other part of the linguistic system (Kay & Fillmore 1999: 1). The most elaborate proposal for integrating alternations into a constructionist framework so far, namely Cappelle's (2006) 'allostructions model', extended and substantiated by empirical evidence in Perek (2012, 2015), will be presented and discussed in the following section.

[41] Cf. Colleman & De Clerck (2009) as well as Perek (2015: 155-156) and Chapter (3.1.2.3) below for a discussion of the degree of grammaticalisation of the *to*-POC, and possible traces of its spatial origins.
[42] Goldberg (2002) also comprises a discussion of the paraphrase relations in terms of profiling differences.

As will be shown, the allostructions model is highly relevant for the present thesis, which also places a strong focus on the dative alternation as such, and aims to investigate its emergence in the history of English. I also aim to show that the establishment of the alternation had an effect on its members. That is, I hope to adduce historical evidence to support the cognitively reality of the 'alternation'.

2.2.2. Constructionist views in favour of alternations: the 'ditransitive allostructions' model

The Goldbergian account of ditransitive constructions as well as other 'alternations' has frequently been found too restrictive and counter-intuitive, or rather, ignorant of data which suggest that generalisations over formally different yet semantically similar structures are present in the minds of speakers. For example, Cappelle reviews different treatments of particle verbs and the two alternative orderings available to them in PDE (*pull up one's socks* and *pull one's socks up*), and argues that considering such alternating idioms as two independently stored constructions "without there being a level of representation at which the two versions are perceived to be semantically identical lacks psychological plausibility" (Cappelle 2006: 13). The solution Cappelle presents for accounting for such correspondence links between constructions is an 'allostructions' model, with allostructions referring to formally different variants of a partly underspecified construction (Cappelle 2006: 18). That is, structurally distinct yet semantically (near-)synonymous patterns are linked to a more schematic generalisation, which only captures the shared elements of the constructions. As Perek (2015: 153) points out, the postulation of such allostructions together with an alternation-based abstracted super-category or 'constructeme'[43] is superior to other representations because:

> [t]he constructeme and the inheritance links to each allostruction capture the fact that the constructions are similar and indicate at which level, and the allostructions themselves may include further syntactic and semantic/pragmatic details as to how they differ from one another.

Furthermore, according to Cappelle's discussion (2006: 21-25), allostructions and constructemes as part of constructional networks are 'fully expected' and in many ways related to Langacker's 'categorising relations' (1987; cf. also Tuggy 1981). They are moreover easily combined with assumptions about horizontal links between constructions at all levels, as mentioned in e.g. Traugott & Trousdale (2013), Diessel (2015), and developed in more detail in van de Velde (2014).[44]

[43]The term is introduced in Perek (2012: 629), but was reportedly coined by Cappelle.

[44]Cf. above. Van de Velde (2014) links his hypotheses to the biological concept of 'degeneracy', indicating a many-to-many mapping between different strategies for expressing semantic relations. Arguments in favour of an allostructional model (over horizontal, construction-to-construction links) are given in Perek (2015: 153) – it is, however, unclear whether Perek includes lower-level horizontal links, or restricts such relations to higher-level schemas.

Applying this model to the dative alternation, whose members constitute distinct formal realisations of a particular meaning, i.e. encode the same event type, Perek (2015: 156) proposes an under-specified schematic construction with a meaning of 'X causes Y to have Z'. This abstract category is linked to the two allostructions of DOC and *to*-POC (ditransitive and *to*-dative in Perek's notation); cf. Figure 6 below.[45]

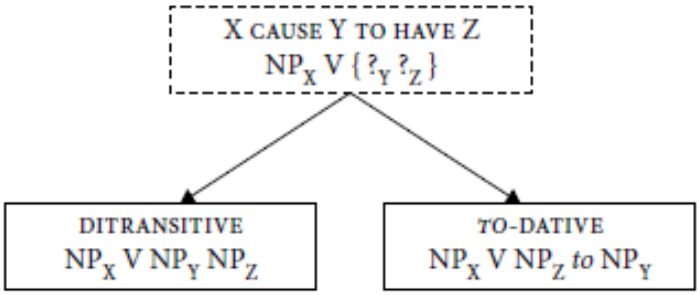

Figure 6 The dative constructeme and its allostructions (Perek 2015: 156)

Despite the allostructions expressing more or less the same meaning, they nevertheless differ in syntagmatic order of the objects. Furthermore, they show substantial differences in respect to various discourse-pragmatic features such as givenness and discourse accessibility of the objects, as well as length, among others (cf. De Cuypere 2015a: 227; Bresnan 2007; Bresnan et al. 2007; Theijssen et al. 2013, *inter alia*). These factors restrict the scope of usage of the respective constructions, meaning that they determine the choice of one variant over the other (cf. Perek 2015: 158). As will be dealt with in some more detail below, and as suggested in Perek (2015: 158), it appears that in addition to these object-related properties, certain verb-specific biases can furthermore be observed in that e.g. *sell* shows a preference for the *to*-POC, while *teach* is more prone to DOC use. These biases could be accounted for by verb-specific allostructions (alongside more schematic allostructions and constructemes), which vary in salience of the above-mentioned contextual factors (Perek 2015: 158). The allostructions model will be adopted in this thesis, and its applicability to the history of the English dative alternation will be explored in later chapters.

In general, the allostructions model is well supported by a number of general phenomena as well as experimental studies.[46] First, there is clear evidence of verbs being coerced into the alternation. This means that the occurrence in one pattern enables the occurrence in the other pattern, even if this construction was unavailable to the verb before, or is in fact in opposition with the semantics of the construction. For example, *provide*, which is typically found in prepositional patterns (most frequently

[45]The assumption that the constructions' semantics are near-synonymous is also supported by Stefanowitsch & Gries' (2004) collexeme analysis of the *to*-POC, in which *give* (and related verbs) figures prominently among those verbs strongly attracted to the construction.
[46]An overview of the latter is presented in Perek (2015: 163-167).

with a *for*-recipient, or a *with*-theme, followed by a *to*-POC), is at least marginally attested in a DOC in American English now (cf. (*30*; Quirk et al. 1985: 1210; Mukherjee 2001: 299; Mukherjee 2005: 13; De Clerck, Delorge & Simon-Vandenbergen 2011).

(30) But we're also immediately p*roviding* **them** food and shelter and clothing
(2004; M. Brown; COCA)

That is, the presence of *provide*-DOCs, despite the verb's clear general dispreference for this construction, could be caused by analogy to other alternating verbs, along the lines of 'if you can use a verb in one of the patterns, you can use it in the other, too'. It is of course clear that these DOC uses could also be triggered by the great semantic similarity of *provide* with other verbs of giving, meaning that the DOC tokens of *provide* could be formed in analogy to other transfer verbs rather than indicating coercion into the alternation. Nevertheless, both options are at least equally plausible, and in fact, both processes might be at play at the same time.

An even more interesting phenomenon is the coerced use of verbs such as *deny* and *refuse* as well as *cost* in the *to*-POC, which is somewhat unexpected considering the spatial/allative connotations that the preposition probably still carries. Accordingly, the *to*-POC for such uses is clearly marked, and DOC uses are certainly predominant. This is supported by Colleman & De Clerck (2009: 24), who find that only about a fifth of *refuse* and *deny* tokens are found in the prepositional pattern in the BNC (cf. (*31*a-b; also Goldberg 1992: 69; Panther 1997; Krifka 2004).[47] With *cost*, the *to*-POC is decidedly 'awkward', as Colleman & De Clerck (2009: 36) put it; their query for combinations of *cost* and *to* in the BNC only yielded two tokens. Still, a quick google search for strings like 'costs billions to the' (on US sites) produced a considerable number of hits, including the example given below (32).

(31) a. Mesmerised, Kate shook her head, unable to *deny* **to him** the truth of his words
(1993; Kristy MacCallum, *Driven by love*; BNC)

b. Last week six of the nuns locked themselves in a hen house and *refused* access **to a ministry vet** […]
(1985-1994; *Independent*; BNC)

(32) Graffiti taggers *cost* millions **to the @CityofSeattle** (twitter.com)

These correspondences are certainly highly conspicuous (see also the discussion of alternation-based productivity below).[48]

Apart from noting cases of coercion, the question of alternation relationships has also been tested in more systematic ways, offering empirical and experimental support for the existence of allostructions and constructemes in the minds of speakers (Perek 2015: 163). The studies involved

[47]Colleman & De Clerck's (2009) study was carried out on a random sample of 3,000 instances of the verbs in question in the BNC.

[48]It is clear that this argumentation is slightly problematic in that it runs the risk of circularity/illogicalness if, as discussed below, the occurrence of verbs of blocked transfer in the *to*-POC is taken as evidence for the high degree of grammaticalisation of the construction.

include priming as well as sorting task experiments (Goldwater et al. 2011; Vasilyeva & Waterfall 2011; Perek 2012).

As to the first, it has been shown that processing a (linguistic) stimulus influences or facilitates response to a later stimulus, i.e. a structure that has been heard or produced before, has a high likelihood of being processed (or repeated) more readily afterwards (cf. e.g. Chang, Bock & Goldberg 2003; Gries 2005, 2007; Gries & Wulff 2005, 2009; Szmrecsanyi 2006; Eddington & Ruiz de Mendoza Ibáñez 2010, *inter alia*). Most typically, priming effects are found with similar syntactic structures. Cases in point are e.g. the passive in (33a) priming a locative as in (33b), or the prepositional locative in (34a) priming the *to*-POC in (34b) but not the DOC in (34c).

(33) a. the construction worker was hit *by the bulldozer*
b. the construction worker was digging *by the bulldozer* (Traugott & Trousdale 2013: 54)

(34) a. The wealthy widow drove an old Mercedes *to the church*
b. The wealthy widow gave an old Mercedes *to the church*
c. The wealthy widow gave *the church* an old Mercedes (Chang, Dell & Bock 2006: 249)

Structural (or syntactic) priming of this kind therefore typically involves constructions overlapping in formal structure, but not encoding the same events or semantic relations – these constructions are accordingly taken to be related in some way. In contrast, a relation between the non-priming constructions, i.e. between constructions which are formally distinct but share a semantic relation through the third pattern (e.g. between the *to*-goal pattern and the DOC), is not confirmed. What this means, then, is that syntactic priming crucially results from competition between variant sequences of semantic roles, i.e. variant constructions. Consequently, the priming of one construction happens at the cost of the other (cf. Bock & Loebell 1990; Chang, Dell & Bock 2006; Goldwater et al. 2011). In the case of the DOC, the *to*-POC and the *to*-goal pattern, for instance, the latter prime each other at the expense of the DOC, meaning that the likelihood of using a *to*-POC instead of a DOC increases when the speaker has before been confronted with a *to*-goal pattern.

However, and highly relevant for the present thesis, Goldwater et al. (2011) find that priming can also take place between semantically related but formally distinct constructions. Based on experimental evidence, they show that the two members of the dative alternation also prime each other. More specifically, they provide evidence that the probability of both ditransitive allostructions, the DOC and the *to*-POC, to be used in subsequent discourse increased equally if the participants were primed with one of the alternants before (Goldwater et al. 2011: 166). With semantic-structure-priming, the use of both of the alternating constructions therefore increases. This means that both allostructions benefit from the use of the other, and consequently benefit from being associated with each other (Goldwater et al. 2011: 159). Similar influences are found in Vasilyeva & Waterfall's (2011) study on transitive active and transitive passive in Russian. In line with Perek (2015: 167), this qualifies

as support for the assumption that higher-level generalisations over alternating constructions with shared meaning components (constructemes) exist. Furthermore, I take this confirmation that there is some profit for the constructions in linking themselves to each other.

Additional evidence for the independent existence of alternations comes from a sorting task experiment conducted by Perek (2012). Here, participants were presented with a range of sentences instantiating three constructions, including the DOC, the *to*-POC, and a *with*-applicative. Asking the subjects to arrange the sentences into two classes according to their meaning, it was then expected that they would classify *to*-POCs with verbs that are ambiguous between a locative and a recipient meaning (such as *throw*) as either part of a larger caused-motion group (together with *with*-patterns), or part of a dative alternation group (together with the DOC). The results of the experiment, namely that the majority of subjects tended to sort according to the latter option rather than the former – suggesting that the semantic similarity between different occurrences of the caused-motion construction is perceived as less salient than the semantic similarity of alternating constructions – again supports the idea that the two constructions are strongly associated, and (I take it) the postulation of a constructeme (cf. Perek 2015: 164; also Bencini & Goldberg 2000).[49]

In sum, there thus appears to be convincing evidence that structurally different constructions which encode similar event types are abstracted over, and that these generalisations are stored as well (Perek 2012: 609). More importantly, there is clear support for the assumption that the members of the dative alternation (or ditransitive 'allostructions') are closely connected, and are perceived as encoding the same type of events. That this is the case is suggested by priming experiments, but also by cases of coercion, where the use of a verb with one ditransitive allostruction enables it to be used with the other allostruction as well. The following section will explore this concept of 'alternation-based productivity' in some more detail, and also comment on observable distributional asymmetries.

2.2.3. Distributional asymmetries and 'alternation-based productivity'

It has often been noted that despite being closely associated, the members of the dative alternation display certain "puzzling lexical (dis)preferences" (Gries 2009: 4). In other words, not all verbs readily alternate between the two variants, with some exhibiting slight distributional biases, while others are near-categorical in their preferences towards one or the other (cf. e.g. Levins 1993 for an overview).[50]

[49]Perek (2015: 165) adds the disclaimer that these results do not yet count as evidence that the generalisations are in fact stored, since they could also represent 'ad hoc'-categories formed in the experimental context. While there are good arguments to assume that the latter is not the case, additional support is certainly needed.

[50]Although it has often assumed that these (dis)preferences are absolute (cf. e.g. Goldberg's [1992: 69] claim that *deny* and *refuse* "cannot occur with prepositional paraphrases"), it can be shown that they are not so much strict constraints but rather statistical tendencies which can be overridden by information structure requirements, among other things (cf. Gries 2009: 4; also Stefanowitsch 2006, 2011).

This is, however, hardly surprising – in fact, a complementary distribution is to be expected considering other allo-relationships. For instance, the allomorphs of the past-tense morpheme clearly do not appear in random variation, but are rather complementarily distributed, depending on their phonological environment. In a similar way, the ditransitive allostructions are predicted to show certain complementary verb-specific (or verb-class-specific) preferences.

Examples of constructional (or allostructional) biases include the following: Gries & Stefanowitsch's (2004) distinctive collexeme analysis of the dative alternation in the ICE-GB suggests that verbs of continuous motion like *bring*, *take* or *pass*, as well as verbs expressing commercial transactions such as *sell*, *supply* and *pay* have a high predilection for the *to*-POC. Verbs traditionally taken to denote concrete or metaphorical caused reception (*give, offer, tell, show*), in contrast, are more clearly associated with the DOC. A number of other verbs including *lend*, *send*, *write* and *get*, show an approximately equal distribution.

Verbs that are typically mentioned as examples of very strong biases towards the DOC are *deny* and *refuse*, as well as *cost*. Although 'counter-examples' can be found, these verbs nevertheless tend to avoid the *to*-POC. Furthermore, near-idioms involving complex predicates (e.g. *give so. a kick, give so. a headache, ask so. a favour/ the time, do so. a favour/harm*) are almost never found in a *to*-POC.[51] On the other hand, there is a number of verbs which are judged as inacceptable or highly marked if used in the DOC, and are largely restricted to the *to*-POC. Among these are verbs of communication such as *say* (cf. ex. (*35*a-b), as well as verbs of manner of communication like *whisper*, *mutter* or *yell* (35c-d; but see Bresnan & Nikitina 2009: 164-165 for some exceptions).

(35) a. John *said* goodnight **to Mary**
b. *John *said* **Mary** goodnight (Stefanowitsch 2011: 110)
a. John *whispered* goodnight **to Mary**
b. *John *whispered* **Mary** goodnight

The DOC-incompatibility of a relatively large group of verbs including *donate*, *announce*, *provide*, *supply*, *confess*, *reveal, explain* (and others), has frequently been ascribed to the words' origin, as all of them were borrowed into English from Latin or French. Accordingly, the dispreference is often labelled the 'Latinate restriction' (cf. e.g. Green 1974: 77-79; Oehrle 1976: 121-125; Pinker 1989: 118-119; Harley 2007; Coppock 2009). While the assumption that speakers actually possess etymological knowledge about verbs has by now been largely discarded, the constraint is commonly attributed to certain exceptional morphophonological features of these verbs such as their stress patterns. However, it is difficult to maintain this claim considering that other verbs excluded from the DOC, such

[51]See Goldberg (1995: 92) and also Colleman & De Clerck (2009: 37), whose google search for 'asked a favor/favour to you' did not yield any hits.

as *say*, do not exhibit such properties. On the other hand, many verbs sharing a Latinate origin and stress pattern with this group in fact do allow for (and are frequently found in) the DOC; cf. e.g. *assign*. Therefore, various proposals have been put forward to account for the asymmetries observed in the dative alternation in a different way. A semantic explanation is, for instance, given in Goldberg (1992: 69, 1995: 92), who states that verbs of blocked transfer are incompatible with the *to*-POC due to their lack of 'caused motion'-semantics. The restriction of light verb constructions (*give a kick*) to the DOC, on the contrary, is thought to be due to the focus lying on the action expressed by the theme (*to kick*) rather than on the recipient. In general, many biases have been explained by profiling differences as well as other semantic-pragmatic factors (cf. e.g. Wierzbicka 1986; Gropen et al. 1989, 1991; Pinker 1989; Goldberg 1995; Ambridge et al. 2009; Coppock 2009). However, these explanations can hardly account for all idiosyncratic verb preferences, and sometimes seem to be formulated rather ad-hoc in order to account for problematic cases. Furthermore, they do not provide clear indications on how these idiosyncrasies are acquired (cf. also Boyd & Goldberg 2011: 58).

The issue of learnability and entrenchment in this context has been addressed in a number of studies, an overview of which, together with a discussion of challenging issues, is provided in Boyd & Goldberg (2011). Although there is evidence that higher token frequency and thus a higher degree of entrenchment of a verb with one construction has an impact on the usage of these verbs, this would also predict that high frequency verbs cannot be used creatively in new contexts – a prediction which is certainly not born out. In contrast, there is some indication that negative entrenchment, or statistical pre-emption plays a role in language acquisition, and can possibly account for the non-availability of a construction to certain verbs (cf. e.g. Pinker 1981; Bates & MacWhinney 1987; Clark 1987; Di Sciullo & Williams 1987; Goldberg 1993, 1995, 2006; Marcotte 2005; Foraker et al. 2007; Stefanowitsch 2008, 2011; Boyd & Goldberg 2011; Goldberg 2011; Hoffmann & Trousdale 2013). In brief, the concept of statistical pre-emption refers to blocking effects in language learning; in Stefanowitsch' (2011: 115) words, it is:

> a simple but powerful mechanism based on the idea that children assume that exact synonyms do not exist and therefore take the existence of a particular form in the input as evidence against the existence of a particular form in the input as evidence against the existence of synonymous forms that could be derived by a particular rule or set of rules.

For instance, when confronted with a wide range of regular past forms of the type *walked* or *danced*, a child might acquire a general past tense construction 'V-*ed*/PAST', assuming that this will apply to verbs such as *go* as well. However, input containing the form *went* might then lead to this construction/rule being blocked (cf. Stefanowitsch 2011: 115; also Clark 1995, among others).[52]

[52]As already pointed out above, and as mentioned by Hoffmann & Trousdale, preemption is also supposed to play a role in the diachronic development of constructions:

As discussed in Stefanowitsch (2011), as well as Boyd & Goldberg (2011), pre-emption in the acquisition of larger syntactic constructions might work slightly differently, though, as most verbs typically appear in more than one construction (in contrast to inflectional patterns). On the basis of Pinker (1984: 400), as well as Goldberg (1995: 124), Stefanowitsch therefore argues for 'pre-emption by contextual mismatch' rather than the standard notion of pre-emption as just presented. He proposes that if a construction is used in a context that is typically associated with the other variant, this alternative is pre-empted/blocked (2011: 117). This can be illustrated by the following examples: the large majority of ditransitive verbs would disfavour a structure as in (36a) due to discourse-pragmatic reasons (pronominal recipients strongly tending to appear in the DOC). The fact that *explain* is nevertheless used in this context (36b) might therefore be interpreted as evidence that the alternative option is unavailable with this particular verb.

(36) a. #John *told* the problem **to me**

b. John *explained* the problem **to me**

Although the role of statistical pre-emption in acquiring constructional restrictions seems to be supported by a number of studies, others notably argue that there is little clear substantiation (cf. e.g. Boyd & Goldberg 2011; Goldberg 2011 vs. Stefanowitsch 2011). Further research is thus certainly needed to validate either assumption.

The phenomenon that a greater number of verbs appears to be restricted to the *to*-POC than the other way round, i.e. the type frequency of non-alternating *to*-POC verbs is significantly higher than the number of non-alternating DOC verbs, figures prominently in Perek's usage-based account of alternation-based productivity.[53] He focuses on the question whether the occurrence of a verb in one member of an alternation has an impact on the productivity of the other member, arguing that alternation-based productivity exists in addition to construction-based productivity. The latter is influenced by the semantic compatibility of a novel verb with the constructional meaning, which is in turn determined by the verbs used in the construction. That is, new verbs are added to a construction

> [I]f on a particular occasion one construction is used instead of a possible alternative, then the hearer will assume that this choice reflects a functional difference between the two structures. Ultimately, this will lead to the functional differentiation of the two alternatives (that is, the minimisation of constructional synonymy). (2013: 10-11)
>
> [I]f preemption leads to the functional diversification of two (or more) variants, then each single usage event can trigger or reinforce contextual associations, which in the long run will affect the statistical probabilities of each variant in particular social and linguistic contexts. In other words, preemption encourages originally synonymous constructions to be interpreted as contextually-determined variants. Preemption, then, is inherent in socially and linguistically governed variation, which in the long run can result in diachronic change. (2011: 6)

[53]This conclusion can impressionistically be gathered from the literature, and has been empirically tested on the ICE-GB by Perek (2015: 199-205).

based on analogical extension from previous experiences of that constructions (Perek 2015: 169; cf. also Bybee 1995; Bybee & Thompson 1997; Barðdal 2008; Suttle & Goldberg 2011; Wonnacott et al. 2012; Zeschel 2012; Perek 2014, 2016). Alternation-based productivity, in contrast, is claimed to act on the basis of "*a paradigmatic analogy* between an existing use of a verb in a given allostruction and a productive use of that verb in another allostruction" [original italics] (Perek 2015: 169). The occurrence of a (largely) infelicitous overgeneralisation such as *Don't say me that* would accordingly be due to a child having encountered this verb in a *to*-POC before, as well as a number of other communication (or other ditransitive) verbs in both the *to*-POC and the DOC. From this, the child may conclude that the constructions express the same meaning, and that the default option is for verbs to alternate.

As Perek points out, the concept of alternation-based productivity finds its match in accounts such as Pinker (1989) or Marcotte (2006), the latter of which refers to a process of 'analogical paradigm completion' which children engage in, taking notice of the various constructions specific verbs can occur in (Marcotte 2005: 219). Perek pursues this hypothesis, i.e. that productivity is positively influenced by alternation relationships by conducting an experiment on the dative and locative alternation with adult native speakers, following an experimental study by Conwell & Demuth (2007) on alternation-based productivity effects in child speech (cf. also Wonnacott, Newport & Tanenhaus 2008; Perek & Goldberg 2015).[54] The experiment shows that concerning the dative alternation, there is a clear asymmetry in the productivity of the DOC and the *to*-POC, respectively.[55] That is, both with verbs of physical transfer and communication verbs, subjects presented with a DOC model consistently and frequently produced a *to*-POC in the sentence completion tasks, while those trained on a *to*-POC mainly stuck to this construction. This suggests that there is an impact on the productivity of the *to*-POC by previous encounters with the DOC, but not vice versa.[56]

The usage-based explanation Perek (2015: 197-206) puts forward for the observed productivity asymmetry then relies on differences in type frequency between the two constructions, as already mentioned above. Relating the issue to the allostruction model presented in the previous chapter, it is argued that in the case of allostructions, productivity is determined by the type frequency of the super-

[54]The 'locative alternation', also often labelled the '*spray/load* alternation' refers to the relation between the caused-motion construction (*John loaded hay onto the truck/ John sprayed paint onto the wall*) and the with-applicative (*John loaded the truck with hay/ John sprayed the wall with paint*); cf. Perek (2015: 158-163).

[55] The study included verb recall tasks, meaning decision tasks, and sentence completion tasks based on short stories with selected novel ditransitive as well as locative verbs in 'model' and priming conditions (viz. the respective constructions involved in the alternation).

[56]As Perek (2015: 189-193, *inter alia*) demonstrates, a number of factors potentially influencing the asymmetry (such as the constructions' semantics, discourse-pragmatic factors, or priming) cannot be held responsible for the phenomenon as such, although they possibly exert a reinforcing impact. Perek's findings in general are in line with results by Conwell & Demuth (2007), who find a similar bias in the use of the dative alternation with children.

ordinate constructeme in addition to the type frequency of the variants as such. The higher the number of alternating verbs in a language is, the higher the likelihood is that newly encountered verbs are used with both alternants as well. A great number of non-alternating verbs, on the other hand, should lead to conservative use of novel verbs in either one or the other construction (Perek 2015: 198; cf. also Wonnacott, Newport & Tanenhaus 2008; Perek & Goldberg 2015).

Both issues appear to apply to the dative alternation: on the one hand, there is a reasonably large group of verbs that do alternate, determining the alternation-based productivity effects seen with the DOC. As Perek & Goldberg (2015: 125) demonstrate, this group of verbs occurring in both constructions merely needs to reach a certain threshold of type frequency: a 'minority' of verbs witnessed to be alternating suffices to trigger the extension of verbs which have previously been observed in one construction only to the other allostruction (cf. also Wonnacott, Newport & Tanenhaus 2008). On the other hand, the dative alternation also shows that this relation is not symmetrical, as the higher type-frequency of non-alternating *to*-POC verbs, also including many more hapax legomena than the (non-alternating) DOC, leads to a productivity bias towards the former.

2.3. Conclusion: The PDE dative alternation as an allostructional network

To conclude, it seems fair to say that the dative alternation is a highly "multifaceted phenomenon", which has unsurprisingly occupied many linguists for quite some time now (Colleman 2009: 602). This chapter has attempted to provide some basic information on how the members of the dative alternation, as well as the alternation itself have been treated in constructionist accounts, and in particular in usage-based constructionist approaches. The main assumptions the rest of this thesis will work with are then the following: both constructions involved in the alternation express a basic meaning of 'successful transfer'. This includes events of concrete, physical transfer as well as abstract, metaphorical transfer events, regardless of the range of irregularities and semantically peripheral uses that are still found. Following a usage-based approach to the relation between verbs and constructions, this thesis assumes that the meaning of constructions develops in a bottom-up manner. This means that the semantics of the more abstract construction (e.g. the DOC) represent a generalisation over verbs and verb meanings that are frequently used in the construction. In the case of the DOC (as well as the *to*-POC), the most prototypical verb is *give*, a fact which determines the basic transfer-semantics of the schematic DOC. In line with Croft (2003) and others, the different sub-senses associated with the DOC (and the *to*-POC) are thought to represent verb-class-specific constructions that are located at a lower level of schematicity in the constructional network and inherit from the more general, underspecified DOC. These verb-class-specific constructions are taken to be related to a range of yet less schematic constructions (verb-sub-class-specific and verb-class-

specific) – these lower-level constructions again shape and determine the semantics of the more general constructions above them in an essentially bottom-up way.

As to the relationship between the DOC and the *to*-POC, I have argued that there is a clear and intimate connection between them, and that the constructions are perceived as fundamentally synonymous. Even more so, the DOC and the *to*-POC represent 'allostructions' of each other, and are linked by an overarching ditransitive constructeme, rather than being merely superficially related by the fact that the verbs found in them largely overlap. This constructeme is taken to be independently stored in the minds of speakers; the alternation therefore receives and independent theoretical status. That this should be the case, i.e. that the two constructions should be strongly linked in an alternation-relationship, is supported by priming experiments, showing that the use of one allostruction increases the likelihood of the other being expressed in subsequent discourse. Furthermore, there is good evidence that the patterns are perceived as more systematically and more closely related to each other than other constructions (cf. Perek's sorting task experiment). It has also been shown that the alternation is productive, in that verbs found in one construction can typically also be used in the other. The effects of such alternation-based productivity in child language acquisition has been empirically tested by Perek (2015). Its impact is also seen in instances of constructional (or alternation-based) coercion: verbs that have previously been used in only one of the allostructions, have come to occur in the other construction, too, over time. Finally, I have argued that distributional asymmetries in the dative alternation, with certain verbs showing (more or less strong) preferences for either one or the other allostruction, are expected in an allostruction relationship. If two constructions show a complementary distribution concerning discourse-pragmatic features (such as topicality of the objects), a complementary distribution concerning verbal semantics can be seen as a further indication of a close relationship between the patterns.

The next chapters will approach the dative alternation and its members from a historical viewpoint, providing some background information on the DOC and the *to*-POC in earlier stages of English as well as on their diachronic development from Old to Present Day English. These changes will moreover be related to more general developments that took place in the history of English and which were of great consequence to the whole linguistic system.

3. Ditransitives in the history of English

The present thesis starts from the assumption that a diachronic perspective can be of great help in explaining synchronic phenomena. It therefore attempts to provide a historical answer to the question why the dative alternation in its present form is there in PDE. In order to be able to so, the following chapters will give an overview of the major changes that affected the members of the dative alternation in the history of English. Essentially, these changes can be divided into four sets. First, a specific modification in the morphosyntactic options for ditransitives will be outlined – more precisely, I will discuss the role which the system-wide loss of case marking played in the development of the complementation patterns of ditransitive verbs (3.1.1). Second, the rise of prepositional alternatives, that is, the increasing ability of prepositional phrases to encode core semantic roles such as the recipient in ditransitive events, will be dealt with (3.1.2). This change had an effect on both the form and the function side of the patterns involved, in that the semantics of the PPs widened, and collocational as well as syntactic restrictions were lost. Third, we will look at changes in the meaning/function of the DOC, which has undergone a process of semantic narrowing in the history of English (3.1.3). Finally, some information on the fixation of word order is given, in order to account for the differences in object ordering between the members of the PDE dative alternation (3.1.4). Since it can be assumed that these (sets of) changes did not occur in a completely independent manner, but were causally connected, various hypotheses that have been put forward in this context will briefly be presented after this (3.2). Whenever possible, reference to notable constructionist linguistic publications on these issues will be made (cf. Barðdal 2007, 2008, 2009, 2011; Barðdal, Kristoffersen & Sveen 2011; Colleman 2010a, 2011; Colleman & De Clerck 2011).

3.1. Important changes in the history of English ditransitives

3.1.1. Loss of case marking with ditransitives

The system-wide loss of case-marking distinctions can be considered one of the most influential changes in the history of English, figuring prominently in discussions of the differences between Old and Middle English. Although there is disagreement as to the precise dynamics between various changes at that time, it is generally taken to have had profound consequences for the entire language system, including the complementation patterns of ditransitive verbs. In the following, I will first provide some very basic information on case marking in Old English, before moving on to the large-scale loss of case-marking that characterises the transition of Old to Middle English. Potential causes of this change will be addressed in more detail in the last section of this chapter, although no attempt is made to cover this discussion in more detail (3.2).

3.1.1.1. Case marking in Old English ditransitives

In Old English, the nominal inflectional system inherited from Germanic was, at least in comparison to Present-Day English, still largely intact, featuring four productive cases (nominative, accusative, dative, and genitive), two numbers (singular and plural), as well as three grammatical genders (masculine, feminine, and neuter). However, as Lass (1992: 103) points out, case syncretism was already relatively advanced at this point as well, and "it was virtually impossible for any single noun form to be uniquely marked for all three" of these dimensions. In fact, many inflectional classes did not distinguish formally between various categories; for instance, nominative-accusative syncretism was widespread especially in the plural. Although many inflectional suffixes were therefore highly ambiguous in regard to their precise function, some endings still exclusively expressed a single category. In addition, much less overlap was given in the adjectival and pronominal paradigms. This leads Allen (1995: 163) to conclude that despite significant reductions in the case marking system, no category distinctions had been lost yet in OE.[57]

As to the function of case forms in the clause (especially in regard to verbal arguments), it has been noted that the nominative most commonly marked subjects/agents, while accusative marking is most frequently found with direct objects of transitive verbs, i.e. NPs expressing patients or themes of an event. Certain regularities also seem to have held for the other cases, whose occurrence was regularly correlated with particular semantic relations. Genitive case, for instance, was reportedly preferred for the source of an emotion or mental state such as neglect, care, or enjoyment, in contrast to the dative, which most commonly denoted experiencers as well as recipients (Traugott 1992: 203). As Allen (1995: 25) remarks, "the case-marking possibilities of a given verb [thus seem to have been] to a large extent related to the semantics of that verb". Nevertheless, idiosyncrasies did exist, and there was considerable variation in the case frames in which individual verbs appeared. For example, the animate experiencer of verbs such as *lician* 'to cause or feel pleasure' or *ofhreowan* 'to cause or feel pity' was variably marked with dative, accusative or nominative, while the cause/stimulus could be nominative or genitive (37); cf. e.g. Mitchell (1985: 449-464); Allen (1995: 25, Ch.3); Barðdal (2009).[58]

(37) **him**$_{DAT}$ *ofhreow* <u>þæs manne</u>s$_{GEN}$
'the man caused him pity/ he pitied the man'
Ælc.Th.I. 192.16 (taken from Allen 1995: 68)

[57]For a more detailed overview and discussion of the morphological case system of Old English, see Mitchell (1985); Lass (1992); Allen (1995); Campbell (2001); Hogg (2002, 2008); Quinn (2005); and Baker (2003-2012).
[58]Barðdal (2009: 138) provides a list of case constructions in earlier Germanic. However, this list is based entirely on historical Icelandic; whether the same case frames were in fact present in Old English as well is not guaranteed. A tentative list of OE verbs and their 'rections' is given in Mitchell (1985: 455-464). His inventory does not specify the case marking options for agent or experiencer arguments, though, but focuses on themes/patients of transitive verbs.

Discrepancies can furthermore be noted in the marking of the NP complements of prepositions: the same preposition can be found with different cases in various dialects or even texts. At the same time, two prepositions with highly similar meaning could be used with different cases. The latter situation is e.g. observed in passive constructions, where the oblique agent was usually marked by dative if introduced by *fram* 'from', but accusative if used with *þurgh* 'through' (Traugott 1992: 202; cf. also Mitchell 1985: 497-498; van Kemenade 1987: 81; Lundskær-Nielsen 1993: 19-24; Alcorn 2011: 143-151).

Importantly, this variability in case marking is also found with the DOC and the POCs available at this point. In regard to the former, ditransitive verbs were not restricted to one particular case frame for marking the two object arguments in OE, but could occur in a total of five different patterns (Table 1).

Table 1 Case frames for ditransitives in Old English (taken and adapted from Allen 1995: 29)

	RECIPIENT	**THEME**	**Example**
1.	Dative	Accusative	*giefan* 'give'
2.	Dative	Genitive	*forwyrnan* 'forbid'
3.	Accusative	Genitive	*bereafian* 'deprive'
4.	Accusative	Accusative	*læran* 'teach'
5.	Accusative	Dative	*bereafian* 'deprive'

Of these patterns, [DAT_{REC}-ACC_{TH}], i.e. the one which included a recipient-like argument marked with dative alongside an accusative-bearing theme (38a), was clearly prevalent, and appeared with a wide range of different verbs (Allen 1995: 29, 2006: 205-208; De Cuypere 2015a: 232).[59] The less prominent combinations of genitive themes with dative or accusative recipients (or rather, recipient-like arguments) are illustrated in (38b-c). The clause in (38d) provides an example of [ACC_{REC}-DAT_{TH}], with the accusative in this case denoting the deprivée of an action, whereas (38e) features two accusative-marked arguments. This pattern, i.e. [ACC_{REC}-ACC_{TH}], appears to have been the least frequent, available only to a small number of verbs (De Cuypere 2015a: 232). More examples as well as information on the (in)frequency of different patterns can be found in Visser (1963: 607-637); Mitchell (1985: 455-464); Allen (1995: 28-29), as well as De Cuypere (2015a: 231-233).

(38) a. *dældon* heora æhta$_{ACC\text{-}TH}$ ealle þearfum$_{DAT\text{-}REC}$
'distributed their belongings to all the poor'
(coaelive, ÆLS_[Basil]:54.479; taken from De Cuypere 2015a: 231)

b. and **him**$_{DAT\text{-}REC}$ mancynnes$_{GEN\text{-}TH}$ *benæmde*
'and took mankind away from him'

[59]Although this frame is repeatedly mentioned as the most 'common' pattern in OE, no detail is given on the specific distributions in the relevant literature (with the exception of Visser 1963); neither do the authors always specify whether this statement refers to type or token frequency. The former is implied in e.g. Allen (1995: 28), who states that "[t]he majority of ditransitive verbs in OE selected for a dative Recipient, Source, or Goal, and an accusative Theme" (cf. also De Cuypere 2015a: 231).

((*COE*) ÆCHom I, 31 460.8; taken from Allen 1995: 28)

c. and *bereafode* **Godes templ**$_{\text{ACC-REC}}$ goldes and seolfres$_{\text{GEN-TH}}$
'and stole gold and silver from God's temple'
(coaelive, ÆLS_[Maccabees]:6.4838; taken from De Cuypere 2015a: 232)

d. **hine**$_{\text{ACC-REC}}$ wædum$_{\text{DAT-TH}}$ *bereafian*
'to deprive him of his clothes'
(ÆCHom I, 29 426.4; taken from Allen 1995: 29)

e. Se Halga Gast **hie**$_{\text{ACC-REC}}$ æghwylc god$_{\text{ACC-TH}}$ *lærde*,
'The holy spirit taught them every good thing'
(Blickl. Homl. 12: 13121.1613; taken from De Cuypere 2015a: 233)

Other possible case combinations such as [DAT-DAT] or [GEN-GEN] expressing a ditransitive relation of some sort are not attested, according to De Cuypere's (2015a) investigation of the *York-Toronto-Helsinki Parsed Corpus of Old English Prose* (YCOE). Clauses which do feature a double genitive or double dative have to be interpreted differently; for example, in (39a) the second GEN-NP expresses an adjunct rather than an argument, while in (39b) we are dealing with a 'split', discontinuous phrase (cf. De Cuypere 2015a: 233).

(39) a. se þe þæs$_{\text{GEN}}$ his wylles$_{\text{GEN-ADJUNCT}}$ *gyrnð*
'who yearns for this with his will'
(cochdrul, ChrodR_1:67.1.885; taken from De Cuypere 2015a: 233)

b. Ne *scealt* þu hwæþre þæs andgites$_{\text{GEN-1}}$ *bedæled beon* þisses eadigan mannes lifes$_{\text{GEN-2}}$ Equities.
'You shall not be imparted of the wisdom of the life of the blessed man Equity'
(cogregdC, GD_1_[C]:4.33.12.365; taken from De Cuypere 2015a: 233)

As to the semantics of the different case frames, some do seem to have been common with specific verb classes; however, they were typically not restricted in their scope. Many verbs and verb classes furthermore readily changed between the frames. A good case in point are genitive combinations such as [DAT$_{\text{REC}}$-GEN$_{\text{TH}}$], which often occur with verbs of privation or 'taking away' like *bereafian* 'deprive', but are at same time also found with *(ge)unnan* 'grant' or *(ge)tiþian* 'allow', among others. On the other hand, verbs of privation did not necessarily involve a genitive, since the theme could also be marked by dative, i.e. the verbs regularly appeared in an [ACC$_{\text{REC}}$-DAT$_{\text{TH}}$] frame (Visser 1963: 621; Mitchell 1985: 453; De Cuypere 2015a: 232). This means that although certain tendencies can be discerned, the case frames were not clearly associated with individual verb classes or senses. Mitchell even claims that "anyone who tries to erect these tendencies into elaborate and rigid schemes of classification will not get far" (1985: 453; cf. also De Cuypere 2015a: 231).

The idiosyncratic preferences of verbs in Old English have been taken to reflect lexical case assignment rather than structural case assignment in much of the (generative) literature (e.g. van

Kemenade 1987; Allen 1995; Quinn 2005).[60] This view is challenged by Barðdal in her recent paper on 'Lexical vs. structural case: a false dichotomy' (2011), in which she presents a constructionist approach to case frames on the basis of Icelandic data. On this account, all case marking of verbal arguments in Icelandic is taken to be lexical, and the different case frames care captured by different argument structure constructions at various levels of schematicity (Barðdal 2011: 651). As will be taken up in Chapter (6.2.1.1) below, I argue that such an analysis also suggests itself for the Old English situation: the OE double object case frames constitute different constructions which are linked to each other as well as to a more schematic DOC, which is formally underspecified in regard to case marking. The abstract DOC is on the other hand connected to various sub-senses, instantiated by specific verb classes. These semantic sub-constructions do not fully correspond to the formal sub-constructions, even though some (stronger or weaker) links between them might be present.

The availability of different case constructions was most probably also given with those prepositional ditransitive patterns that were present in OE already. For example, in the case of the Old English *to*-POC, the most frequent case frame was [*to*DAT_{REC}-ACC_{TH}] (cf. De Cuypere 2015c). In general, as Mitchell (1985: 497-498) shows, many prepositions selected for dative marking on their NP-complements – a tendency which certainly also held for ditransitives. It can also be expected that the various case frames similarly overlapped in meaning, and that no systematic correspondence between frame and meaning held. The specific number of types of ditransitive prepositional case constructions in Old English and their frequency distribution and semantics has, however, not been established yet.

3.1.1.2. Case marking in Middle English ditransitives

It is commonly agreed upon that from late Old English onwards, what had been left of the formal case marking system increasingly disappeared, leading to a largely non-inflectional state of the language by the end of the Middle English period. It is clear that this change was gradual rather than sudden in all aspects: first, it proceeded at different speeds in different dialects, with most changes being more advanced in the North, while Southern texts tended to be more conservative. This phenomenon has often been attributed to the greater impact of Scandinavian in the northern parts of England; but even though language contact might have contributed to the faster spread of the change, it did not necessarily trigger it in the first place (Mustanoja 1960: 67-68; Fischer 1992: 207-208; Lundskær-Nielsen 1993: 19-24; Allen 1995: 212). Second, the loss of case marking was not a unified process which affected all categories and forms simultaneously, but rather represents a conglomerate of individual

[60]Structural case refers to a dinstiction in marking between 'subject' (typically nominative) and 'object' (typically accusative), meaning that case is assigned based on a sentence's structure. In contrast, lexical case assignment indicates that individual verbs idiosyncratically select for case marking on their arguments, with for example the OE verb *(ge)helpan* 'help' taking a genitive or dative direct object rather than an accusative one (Allen 1995: 25).

changes taking place over an extended period of time. As mentioned above, the distinction between nominative and accusative had for example already been lost in many classes in Old English times, although it was maintained for other classes. Allen (1995: 165) shows that this particular instance of syncretism then further progressed during Middle English (cf. also Quinn 2005: 13).

From 1100 onwards, the English inflectional system was hit with the following changes (not necessarily in that order), which greatly blurred the boundaries between the different case categories (cf. Allen 2005: 230-231):

- Genitive-marked objects of verbs disappeared.
- Dative/accusative distinctions both in the pronominal and nominal systems disappeared.
- Case agreement morphology on modifiers (determiners, quantifiers, and adjectives) disappeared.

As to the first of these sub-changes, genitive-marked object arguments of transitive and ditransitive verbs were increasingly replaced by dative, accusative or prepositional objects (e.g. *yearn*+ GEN vs. *yearn+after*) from late OE onwards (Fischer 1992: 225-232; Allen 1995: 217-219; 2005: 227-242). By the end of the 12th century then, genitive marked objects were virtually absent from the language.[61] Importantly, this change does not represent a loss of formal case distinctions between genitive and other object cases, since genitives were generally more distinctly marked than other cases (at least in the most frequent masculine *a*-stems).[62] Rather, the functional space of genitives was narrowed in favour of other means of expression, i.e. other case forms and PPs. Barðdal (2009: 17-18) ascribes this development to differences in type frequencies of the constructions involved, arguing that constructions with genitive arguments were lost due to the higher type frequency and accordingly greater productivity of other case-constructions which had very similar semantic functions (cf. also Croft 2000: 121-124).

The loss of category distinctions between dative and accusative was completed by the early/mid-12th century in the North, while its definite end was delayed until the end of the 13th century/ early 14th century in the South. Even in these dialects, however, differential marking of dative and accusative had been largely optional for some time before that. Occasionally but inconsistently dative was marked by a 'new' common dative marker *-e*; however, its presence or absence appears to have been mainly regulated by metrical-stylistic factors and it thus did not represent a real category marker (Lass 1992: 110; cf. also Pinsker 1959: 159; Baugh & Cable 2002: 160; Haselow 2011: 252). As to prepositional phrases, dative temporarily became the default option for marking the NP complements, i.e. prepositions lost variability concerning the case of their NP roles for some time before the categories were merged (Lass 1992: 110; Lundskær-Nielsen 1993: 120-124; Allen 1995: 185-195; Allen 2005: 233).

[61]A detailed account of the loss of various types of genitive constructions can be found in Allen (2005).
[62]Cf. Weerman & De Wit (1999).

In the pronominal system, individual pronouns were again affected at different times, with e.g. syncretism of dative and accusative case found much sooner in the first and second person than in the third person. Interestingly, we do not find large-scale confusion between the pronominal forms. Instead, according to Allen (2005: 233), we see an "encroachment of one form into the functional territory of another". While the 3rd person sg. pronoun *hine* was e.g. restricted to accusative contexts, i.e. where accusative markers would have been used before, dative *him* was used both in dative and accusative function. It is assumed that only once the originally accusative *hine* disappeared, the category distinction between dative and accusative was lost (Lass 1992: 108-112, 116-121; Allen 1995: 213-217; Polo 2002: 136; Quinn 2005: 14-17). After this change was completed around 1300, the morphological system of the language was more or less the same as it is in PDE now (Allen 1995: 210). The only inflectional suffixes retained in PDE are possessive *-s* and the plural marker *-s*, both of which derive from the most common masculine *a*-stems.[63] A distinction between nominative and object case, or rather, between 'subjective' and 'objective' or oblique case is maintained only in the pronominal system (cf. *he* vs. *him*, also the increasingly unpopular *whom*-interrogative).

What did all these changes mean for the double object construction then? Already in the earliest Middle English texts, genitive objects of ditransitive verbs were infrequent or (in some classes) difficult to distinguish from dative and accusative forms, which presumably added to the prevalence of the [DAT_{REC}-ACC_{TH}] pattern and generally decreased the number of ditransitive case frames. This was furthered in the course of the period, when the formal differences between dative and accusative were increasingly obscured. The (late) Middle English double object construction is thus best described as involving two inflection-less, unmarked (or ambiguously marked) NPs which fulfilled the functions of recipient and theme. Identifying and distinguishing between the semantic roles of the two arguments accordingly became more and more reliant on context and animacy asymmetries instead of case marking (Fischer 1992: 379). This is illustrated by the sentence in (40) – contextual rather than formal evidence would have led ME speakers to conclude that it Joseph who was being sold to the merchants and not the other way round.

(40) *Wolle* we *sullen* losep$_{OBJ/TH}$ **þis chapmen þat here come**$_{OBJ/REC}$?
'Shall we sell Joseph [to] these merchants that have come here?'
(Jacob&J. 118; taken from Fischer et al. 2000: 74)

Similar processes took place in the case of prepositional competitors: with the *to*-POCs, for instance, the case frame of [*to*DAT_{REC}-ACC_{TH}] probably increased at the expense of others, before an unmarked [*to*REC-TH] emerged with the convergence of the two categories.

[63]As is well known, there is in fact considerable disagreement as to the status of possessive *-s* as a morphological case marker (cf. e.g. Huddleston & Pullum 2002: 479-481).

Although determining the semantic relations in a sentence was not made impossible by the loss of morphological case marking, it is nevertheless clear that it represented a major change for the English language, and had considerable consequences for the entire system. Among other things, the change likely played a role in the increase of more analytic means of expression as well as the growing fixation of word order in the course of Middle English (cf. also section 3.2). The triggers of the demise of case are traditionally thought in phonological erosion due to stress shift to the first syllable, with unstressed final syllables becoming weakened and eventually lost (cf. e.g. Fischer 1992: 222; Lass 1992: 105; Barðdal 2009: 123-125, 142; also Allen 1995; Blake 2001; Quinn 2005; Harbert 2007; Barðdal & Kulikov 2009; Kulikov 2009; Boas 2009). Even without stress shifts, however, the OE system of case marking would have been "ripe for analogical remodelling", as Lass points out (1992: 103).[64] That is, the great deal of formal ambiguity already present in Old English, and the (universal) trend towards eliminating or avoiding synonymy/semantic overlap between formally distinct case constructions, could have led to to the convergence and eventual disappearance of case distinctions (Barðdal 2009: 140-141; cf. also Luraghi 1987; Croft 2000). Van Trijp (2013) further more shows that paradigmatic simplifications may be driven by the communicative needs and constraints of language users, suggesting that language systems tend to develop towards greater efficiency for processing, pronunciation and perception (by e.g. reducing case markers). This is beneficial for the speakers as long as disambiguation of utterances is still possible, or enabled by other strategies (van Trijp 2013: 127-129).

To conclude, it is an undeniable fact that although a substantial syncretism was already present in the case marking system of Old English, it saw an increasing and sweeping reduction at the transition from Old to Middle English and during the course of Middle English period. As to the causes of this change, it is safe to assume that it was the "result of a complex interplay of several mechanisms" rather than the product of one single process (Barðdal & Kulikov 2009: 474). The main consequences of the change for ditransitives were as follows: first, less frequent case constructions were lost, and there was a move towards one single case frame (involving a dative recipient and accusative theme). Second, an unmarked DOC with a form [V NP NP], and correspondingly, prepositional patterns of the type [V *prep*NP NP], emerged in early Middle English.

In the following sections, the second major change affecting ditransitives in the history of English, namely the rise and increasing frequency of prepositional paraphrases to the double object construction, will be introduced in some more detail. This change is arguably the most important one for the present thesis, since it fundamentally shaped the PDE dative alternation in bringing about its second member. In contrast, the loss of case marking and the fixation of word order influenced both

[64]Cf. also Bertacca (2009).

synthetic and analytic constructions equally, and can therefore be regarded as changes to the factors influencing the choice of one or the other construction (DOC and POC) rather than the constructions themselves.

3.1.2. The rise of prepositional ditransitives and the dative alternation

It is a well-known fact that English moved (or rather, is still moving) from a predominantly synthetic language, which relied mostly on morphological structures to express grammatical relations, to a system dependent more on analytic, i.e. periphrastic, structures (cf. Szmrecsanyi 2012: 654).[65] Among other things, constructions with function words, in particular prepositional paraphrases, greatly increased at the transition from Old to Middle English, at the expense of the resident, more synthetic case constructions (cf. e.g. Baugh & Cable 2002: 314; also Lundskær-Nielsen 1993; Iglesias-Rábade 2011). In the following, I will first provide information on PP-constructions in Old English, before moving on to how these constructions developed during the period of Middle English. Particular attention in both cases is given to prepositional constructions with ditransitive verbs. As will be discussed in more detail below, these patterns are importantly seen as competitors to the more synthetic double object construction in this thesis. The different ways in which this competition was resolved in the end will constitute a major focus of Chapter (6.2).

3.1.2.1. Prepositional ditransitives in Old English

What is clear from the extant literature on OE syntax is that even though their use might have risen in later periods, prepositions and PPs were an integral part of the system already in Old English (cf. e.g. Lundskær-Nielsen 1993: 17-19). Among other things, they frequently fulfilled the same or similar functions as synthetic case-marked NP constructions. For example, as Traugott (1992: 207) points out, they very often expressed adverbials, which could also be encoded by a noun phrase. The availability of both constructional means is illustrated in the following pairs of sentences, with the NP/PP denoting an adverbial of time in (41), duration of time in (42), and accompaniment in (43). Occasional instances of an *of*-phrase being used as an alternative to a post-head, morphological genitive in partitive function (44) or indicating 'source' can also be found in OE texts, but were still rather rare at this point (Allen 2005: 227; also Mustanoja 1960: 75, citing Thomas 1931; Rosenbach 2002: 179; Wolk et al. 2013: 384).

(41) a. **Þam þryddan dæge**$_{DAT}$ he *arist*
'on the third day he [Christ] arose [from the dead]'
(West Saxon Gospels: Matt. (Corpus Cambr.) xx. 19; OED, s.v. *day*)

b. *Com* **on wanre niht** *scriðan* sceadugenga
'There came in a gloomy night striding the shadowgoer'
(Beo. Th. 1410; B. 703; Bosworth-Toller, s.v. *niht*)

[65]But see Schwegler (1990); Vincent (1997); Barðdal (2009) and Szmrecsanyi (2012: 654) for a comment on the issue of a syntheticity versus analyticity in the history of English and other languages.

(42) a. Octauianus *ricsode* **lvi wintra**$_{ACC}$
'Octavian reigned sixty-six years (lit. winters)'
(ChronA 4.26 (1); taken from Sato 2009: 37)

b. Efne min wif *is* **for manegum wintrum** untrum
'Indeed my wife has been sick for many years (lit. winters)'
(JELS (Apollonius) 41; taken from Traugott 1992: 182)

(43) a. ond hé **lýtle werede**$_{INST/DAT}$ unieþelice æfter wudum *fór*
'and he travelled with a small troop with difficulty through woods'
(ChronA 74.28 (878); taken from Sato 2009: 32)

b. Hi *habbað* **mid him** awyriedne engel, mancynnes feond
'They have with them a corrupt angel, the enemy of mankind'
(JECHom II, 38 283.113; taken from Traugott 1992: 171)

(44) a. & athes suoren […] ðat **her**$_{GEN}$ nouþer *sculde besuyken* other
'and swore oaths that neither of them (lit. their neither) would deceive the other'
(PCII: 1140.37; taken from Allen 2005: 241)

b. sume **of þám sundorhál3an**
'some of the saints/ pharisees'
(Rosenbach 2002: 177; source unknown)

In contrast, NPs expressing agents or instruments in passive sentences were not only optionally, but almost always introduced by a preposition, most frequently by *from* or *through* (45); cf. Traugott (1992: 207-208).

(45) a. Hu on Egyptum *wurdon* on anre niht L monna *ofslagen* **from hiora agnum sunum**
'How fifty men were slain by their own sons in one night in Egypt'
(OrHead 64.8; taken from Traugott 1992: 207)

b. and **þurh eow** me *bið gehalgod* manegra oþre clennysse
'and the purity of many is hallowed for me by you'
(ÆLS (Julien and Balissa),6; taken from Traugott 1992: 208)

Most importantly for our purposes, PPs could also be used to encode semantic roles in various argument structure constructions. Examples of transitive clauses with PP arguments, contrasted with NP-patterns, are given in (46-(47). In many cases, it is in fact only the prepositional construction that has survived into PDE (cf. e.g. **rejoice+*NP vs. *rejoice in*). As already mentioned above, PPs were especially frequently used to 'replace' genitive arguments, with their frequency even increasing towards the end of the Old English period (Allen 1995: 217-219; 2005: 239-240).

(46) a. Ne *ġefeah* hē **þære fæhðe**$_{GEN}$
'He did not rejoice [in] this feud'
(Beowulf i, 109; Glossary Old English Aerobics, s.v. *gefēon*)

b. secg **weorce**$_{DAT}$ *ġefeh*
'the man rejoiced [in] the deed'
(Beowulf xxiii, 1659; Glossary Old English Aerobics, s.v. *gefēon*)

c. Đonne mótan we **in ðære engellícan blisse** *gefeón*
'then may we in angelic bliss rejoice'
(Blickl. Homl. 83, 3; Bosworth-Toller, s.v. *ge-feón*)

d. *Gefeónde* **for Paules eáðmódnesse**
'rejoicing in/on account of Paul's humility'
(Blickl. Homl. 141, 4; Bosworth-Toller, s.v. *ge-feón*)

(47) a. se þe **þæs**$_{GEN}$ his wylles gyrnð
'who yearns [for] this with his will'
(cochdrul, ChrodR_1:67.1.885; taken from De Cuypere 2015a: 233)

b. þa *gierndon* eac **æfter þæm onwalde**
'when they also yearned [after] the power'
(tr. Orosius *Hist.* (BL Add.) VI. xxviii. 146; OED, s.v. *yearn*)

However, although PPs as an optional alternative to synthetic means of expression were thus firmly established before Middle English, it does not appear as if they saw an overall increase within the Old English period (cf. Mitchell 1985: 517-523; Lundskær-Nielsen 1993: 28-32, 184).[66] In addition, the use of the paraphrases was in most cases not entirely unrestricted, but they were instead often confined to specific semantic relations. This is particularly evident in the case of ditransitives, as will be shown in the next paragraphs.

Traditionally, it has been assumed that the *to*-POC (as the periphrastic version of the DOC) was completely absent from OE, and only came into being in Middle English (e.g. Visser 1963: 637; McFadden 2002: 110). However, a number of studies have revealed that the construction was in fact used from early OE onwards (cf. Cassidy 1938; Ogura 1980: 60; Mitchell 1985: 512; Allen 2006: 214; Sówka-Pietraszewska 2012; De Cuypere 2013, 2015c: 3-7). More precisely, it commonly occurred with two specific verb classes, namely verbs of caused motion, e.g. *beran* 'bear', *bringan* 'bring', *(a)sendan* 'send' or *feccan* 'fetch'on the one hand (48), and verbs of communication (such as *cweðan*, *tellan*, *secgan* 'tell, speak, say') on the other hand (49).

(48) *sende* [. . .] þis ærendgewrit **him to**
'and sent this letter to him'
(coaelive, ÆLS_[Abdon_and_Sennes]:86.4777; taken from De Cuypere 2015c: 8)

(49) God *cwæð* **to Moysen** ðæt he wolde cumin
'God said to Moses that he would come'
(cocathom2.o3: 196, 16; taken from De Cuypere 2015c: 18)

As clear from the examples below, the construction was not restricted to locative goals, but also in the case of the former frequently involved human recipients/goals. In the case of communication verbs, the theme was typically instantiated by a reported clause (Koopman & van der Wurff 2000: 262). What

[66]For opposing views on this issue see e.g. Traugott (1972: 110); Schibsbye (1977: 30); Kniesza (1991) versus Sato (2009: 184).

is more, De Cuypere (2015c: 3-7), based on a quantitative survey of the YCOE, shows that with these verbs the *to*-POC even surpassed the DOC, accounting for a significantly larger fraction of tokens.[67]

Despite the *to*-POC therefore evidently having been better established than often assumed, the construction in OE was crucially very much lexically limited to these two specific verb classes, i.e. communication and 'bringing/sending'. Most importantly, prepositional uses of verbs of caused possession with a human or animate recipient ('giving'-verbs) are not attested in this period. This strongly suggests that the *to*-POC was not yet established to the same extent and with the same range that was developed later on (cf. Mitchell 1985: 513; Allen 2006: 214). This is clear even if we acknowledge De Cuypere's proposal that the use of the *to*-PP for recipients was embryonically present already in OE as well (cf. De Cuypere 2013: 126-127; De Cuypere 2015c: 19-21).[68] His assumption is based on examples such as the following (50a-c):

(50) a. Ic oswulf ond Beornðryð min gemecca *sellað* **to cantuarabyrg to cristes cirican**$_{REC?}$ <u>ðæt land æt stanhamstede</u>$_{TH}$
'I, Oswulf and my wife Beornthryth give to Christ's church at Canterbury the land at Stanstead'
(codocu1.o1: charter 37.2; taken from De Cuypere 2015c: 20; cf. also Visser 1963: 624)

b. Denewulf bisceop & ða hiwan in Wintanceastre *leton* **to Beornulfa**$_{REC?}$ <u>hiora xv hida landes</u>$_{TH}$
'Bishop Denewulf and the community at Winchester have let to Beornwulf fifteen hides of their land'
(S1285, dated: c.AD 902; taken from De Cuypere 2015c: 20)

c. and we […] <u>ðe</u>$_{TH}$ eft *genimað* **to us**$_{REC?}$
'and we will take you again to us'
(cocathom2,ÆCHom_II,_22:197.241.4383; taken from De Cuypere 2015c: 21)

While the *to*-PP in (50a) is ambiguous between a goal and a recipient (the church as a social community, metonymically referred to through the place name), examples (50b-c) undoubtedly involve human recipients and abstract transfer rather than concrete movement of the theme. The latter therefore qualify as *to*-recipient constructions proper. Even so, as De Cuypere (2015c: 21) also concedes, these uses are exceedingly rare in the OE data, serving as further evidence that the full establishment of the *to*-POC as a viable alternative to the DOC was yet to come.[69] A gradual increase of the new recipient uses instead of a saltational shift from one meaning to the other at the transition from Old to Middle English is in any case expected in usage-based, cognitive/functional theories of language change (cf. also De Cuypere 2015c: 22).

[67]For more detailed results and the statistical analysis see De Cuypere (2015c: 3-7).
[68]De Cuypere (2015c: 18) further contemplates that the addressee *to*-PP with verbs of communication could be considered a (metaphorical) recipient function as well, which would indicate an advanced grammaticalisation path; he himself concludes, however, "that the distinction between Addressee and Recipient is here warranted".
[69]De Cuypere's explanation for the absence of 'real' *to*-POCs, namely that this use "was syntactically blocked by the ACC+DAT DOC" (2015c: 21), will be discussed at greater length below.

Importantly, *to* was not the only preposition used with Old English ditransitive verbs. Quite the contrary, it seems that a range of prepositional constructions were available for speakers as alternatives to the DOC, ample attestations of which can readily be found. For example, verbs of privation such as *ætbregdan* 'take away', *biniman* 'steal' or *afyran* 'remove, take away' (51) regularly occurred with a prepositional deprivee-REC, typically introduced by *from* or *of*, but also others (De Cuypere 2015a: 233; cf. also Visser 1963: 633).

(51) a. *afyrde* **fram hire** […] þa leohtnesse
'took the brightness away from her'
(Wærferth Dial. Greg. 288, I; taken from Visser 1963: 633)

b. Ðu *afyrdest* **of Jacobe**$_{REC}$ ða graman hæftned$_{TH}$
'you took the troublesome captivity away of [from] Jacob'
(Ps. Th. 84, 1.; Bosworth-Toller, s.v. *a-fyrran*)

c. he him *ageafe* þæt$_{TH}$ he ær **on him**$_{REC}$ *bereafode*
'he restored him what he had before stolen on [from] him'
(Ors. 3, 11; S. 146, 30.; Bosworth-Toller, s.v. *be-reafian*)

It can also be assumed that the verb classes found in *to*-POCs in Old English could occur with other goal-prepositions such as *towards* or *till*. Unfortunately, these DOC-paraphrases including prepositions other than *to* have not received much attention so far, and an in-depth analysis (quantitative or qualitative) of these constructions in Old English is still lacking. Most certainly, this lack is due to the strong focus of all extant investigations on the *to*-POC. How frequent such other prepositional patterns really were in comparison to the DOC uses in OE thus remains to be seen. What is nevertheless certain is that they were present and by no means rare in OE already. For the rest of this thesis, I will therefore work on the assumption that at the end of Old English, several prepositional patterns were used with a number of ditransitive verb classes. However, these POCs had not yet extended to all verb classes; most strikingly, verbs of possessional transfer such as *give* could not occur with a prepositional recipient. Moreover, I argue that no abstract link between the DOC and the POCs had formed at this point, but only lower level connections between individual verb classes and individual POC-types. The emergence of the dative alternation proper is therefore taken to be a Middle English phenomenon. This change will be the subject of the following section. Preceding this discussion, a brief comment on the general development of prepositional alternatives to more synthetic constructions in Middle English will be given.

3.1.2.2. The rise of the dative alternation in Middle English

Common wisdom holds that PPs saw an overall substantial increase in the course of the Middle English period, possibly starting already in late Old English (cf. e.g. Mustanoja 1960: 348; Strang 1970: 274-275; Traugott 1972: 127; Fischer 1992: 233-234; Lundskær-Nielsen 1992: 113-115; Fischer & van der

Wurff 2006: 166). This general growth in prepositional patterns is typically thought to reflect three sub-changes, namely the following:

First, the type frequency of prepositions rose from late OE onwards, with a number of new prepositions being added to the inventory. Overviews of this development are given in Mustanoja (1960: 345-346) as well as Strang (1970: 274-275) and Lundskær-Nielsen (1993: 113); a constructionist approach to the emergence of complex prepositions such as *by means of* in Late Middle English is presented in S. Hoffmann (2005).

Second, individual prepositions saw an expansion of their range of uses in the course of Middle English, with many of them acquiring more procedural functions in addition to their originally basic spatial meaning (Lundskær-Nielsen 1993: 114; cf. also Traugott 1972: 127). For instance, Iglesias-Rábade (2011) shows that figurative uses of PP-adverbials increased over time. This is taken to indicate that the prepositions became considerably bleached and extended to new contexts in the course of this period (cf. also Lundskær-Nielsen 1993).

Third, PPs that had already existed as optional variants of more synthetic constructions in Old English grew in proportional frequency during Middle English. A good case in point is the emergence the periphrastic *of*-genitive, which came to 'replace' the morphological genitive in most functions during the course of the period.[70] Importantly, this change also affected genitive case-marked arguments of transitives: for instance, verbs like *wundrian* 'wonder', formerly construed with a genitive NP, are frequently found with *of*-phrases in Middle English (52); cf. Fischer (1992: 233-234). This finds a correspondence in arguments of transitive verbs taking other cases such as the dative or accusative, which were likewise increasingly often replaced by prepositional constructions.

(52) Iosaep […] & Marʒe […] *Wundredenn* baþe **off all þatt hemm. Wass cwiddedd**
'Joseph and Mary both wondered of everything that they were told'
(Ormulum (Burchfield transcript) l. 7633; OED, s.v. *wonder*)

As seen in (53), the verb *hlysnan* 'listen' e.g. appears both with an originally accusative NP-object and in a prepositional construction involving *to* in Middle English.

(53) a. *Listneð* nu **a wunder**$_{ACC?}$
'Listen now [to] a miracle'
(Bestiary 398; OED, s.v. *listen*)

b. *Lustniez* nouþe **to mi speche**
'Listen now to my speech'
(S. Eng. Leg. I. 462/2; OED, s.v. *listen*)

Interestingly enough, much of the variability and fluctuation seen with case forms in Old English is also found in the prepositional uses in Middle English – for example, ME *wondren* 'wonder' collocates with

[70]For more information on the *of*-genitive see Mustanoja (1960: 75); Fischer (1992: 225); Rosenbach (2002: 179); also Allen (2003, 2005, 2009).

a range of prepositions apart from *of*, including *on*, *upon*, *at* and *over*, while it is mostly restricted to *about* in PDE (OED, s.v. *wonder*; cf. also Fischer 1992: 233-234).[71] Traugott (1972: 127) alludes to such developments when she states that "in some instances they [i.e. PPs] were generalized considerably further than they are now and many prepositional uses that developed in ME and ENE [i.e. Early New English] dropped out again later". In the same vein, Strang (1970: 274-275) mentions that Middle English saw "a good deal of experimental exuberance" in PPs usage, which was re-limited in later periods (cf. also Lundskær-Nielsen 1993: 113-114).

The most important instance of prepositional constructions increasing in frequency and expanding in range of uses is clearly the emergence of the dative alternation. This change, which constitutes the main focus of this thesis, is also much more systematic and more conspicuous than other examples, and therefore deserves closer attention. As claimed above, the proper establishment of the *to*-POC as a fully viable and productive alternative option to the DOC is here taken to be located in Middle English, although prepositional paraphrases of DOCs can be found in Old English already. More specifically, I view early Middle English as the point in time when the *to*-POC became less lexically restricted, and extended to other verb classes including verbs of transfer/giving (Allen 2006: 206; De Cuypere 2015c). Possibly as a reflection of this extension, the fraction of ditransitive verbs in *to*-POCs rose substantially from early Middle English onwards. In late Middle English, it was used roughly with the same frequency as in PDE (Mustanoja 1960: 96; cf. also Fischer 1992: 379-380; Sówka-Pietraszweska 2012). I will argue later on that the main consequence of the increase in frequency of this one particular POC-type was the emergence of a strong link between it and the double object construction. This in turn caused the establishment of the ditransitive constructeme, and therefore crucially shaped the structure of the constructional network that is the dative alternation in PDE. How this link between the DOC and the *to*-POC in the history of English became established has to my knowledge not been addressed in more detail anywhere in the literature so far (with the exception of McFadden's generative account of 2002).

Quantitative evidence on the frequency distribution of the two patterns is presented in McFadden (2002) and Polo (2002), whose results are reproduced in a condensed way in Table 2.[72] [73]

[71]Fischer (1992: 234) suggests that the variability in preposition use was more restricted in the earlier texts, but expanded later: "what we see developing is a system that at first shows a more or less one-to-one correspondence between the new prepositions and the old case forms; more prepositions enter into it at a later stage which could then be used to signal finer semantic role distinctions". However, Traugott's (1972) idea of an 'experimentation' phase seems to be closer to the actual data situation, as will be shown below.
[72]A third, more extensive study carried out by De Cuypere is still in progress (cf. e.g. De Cuypere 2015c).
[73]The validity of Polo's results can, however, be questioned, since her study is based on very few texts and a limited number of verbs. Polo herself claims that due to the complete absence of some patterns in individual texts in her database, "numbers, no matter how small, start having statistical relevance to our purposes" (2002: 133). Since this non-attestation could, however, also be due to pure accident, and the token frequency of the other patterns is also highly limited, I would tend to disagree with this statement.

Table 2 Frequency distribution of DOC vs. *to*-POC as given in the studies of McFadden (2002: 113, left) and Polo (2002: 141, right)

	DOC	*to*-POC	TOTAL	% *to*-POC		DOC	*to*-POC	TOTAL	% *to*-POC
M1	166	10	176	5.68	***PCI***	9	1	10	10
M2	22	52	74	70.27	***PCII***	2	2	4	50
M3	85	180	265	67.93	***AW***	24	22	46	47.83
M4	60	44	104	42.31	***St. Iul.***	2	7	9	77.78
					Rolle[74]	0	52	52	100

As shown in McFadden's study on the two constructions in the *Penn-Helsinki Parsed Corpus of Middle English*, the number of *to*-POCs is still comparatively low in M1 – certain texts exhibit no instances at all – but rises significantly after this earliest period (2002: 111). The reasons for this somewhat sudden increase of the *to*-prepositional ditransitive construction in early Middle English are typically either sought in the loss of case marking, with PPs having to step in more often to disambiguate semantic roles (cf. also Section 4.2 below) or in language contact with French. When a growing number of French loan words entered the language, this supposedly also included ditransitives, marked with a preposition *à*. As Allen (2006: 215) remarks, the influx of loan verbs in prepositional constructions, which also frequently replaced native OE verbs, might then have boosted the use of the *to*-POC with native verbs as well (cf. also Visser 1963: 624; Gerwin 2014: 142). In this thesis, language contact is not considered as a factor, but the focus will be on the role played by loss of case marking as well as inherent features of PP-constructions in contrast to synthetic ones.

What is furthermore notable in McFadden's data is the drop in proportion of the *to*-POC towards the end of the period (from almost 70% to roughly 40%).[75] This downwards trend presumably continued beyond Middle English. In order to address the constructions' precise fate in subsequent periods, Wolk et al. (2013) investigated their distribution in *A Representative Corpus of Historical English Registers* (ARCHER; 1650-1989), and find that the proportions of *to*-POCs as compared to DOCs has remained remarkably stable over the last centuries. The fraction taken up by the prepositional construction "modestly fluctuates" between 30 and 39 per cent, with the minor changes in proportional distribution being non-significant (Wolk et al. 2013: 392-393). A slightly different distribution is indicated by Gerwin's (2014: 144-145) results drawn from the same corpus: her data show a statistically significant increase in *to*-POCs between the 17th (approximately 20 per cent) and the 20th century (ca. 29 per cent). In Gerwin's analysis, the prepositional pattern would thus have increased until the 1900s, when the trend would have reversed and DOCs gained ground again (moving

[74]PCI/PCII = First/Second Continuation of the *Peterborough Chronicle*; AW = *Ancrene Wisse*; St. Iul. = St. Iuliene; Rolle = Richard Rolle's *The Form of Living*.

[75]M1-M2/M3-M4/M1-M4: $p < 0.001$, $\varphi \approx 0.7/0.2/0.4$; M2-M3: $p > 0.05$ (based on McFadden 2002: 113).

from about 50 per cent in the early 20th ct. to about 70 per cent in the 1980s).[76] Nevertheless, both accounts are comparable to and compatible with studies of the dative alternation in PDE. Although there is some variation between different varieties of English, these accounts point to a distribution of about 70 per cent DOC and 30 per cent *to*-POC today (cf. e.g. Röthlisberger 2015). Furthermore, the assumption of Middle English being the major locus of change concerning an increased use of the *to*-POC and the emergence of the dative alternation is not challenged by either of the two studies.

Interestingly enough, the establishment of the benefactive alternation, i.e. the paraphrasability of ditransitive verbs of creation or preparation (e.g. *bake, build*, *buy*) by a *for*-POC has to my knowledge largely been neglected so far in the literature. While it is plausible to assume that such verbs were occasionally found with *for*-RECs in Middle English, it is therefore difficult to determine whether a relationship between the DOC and the *for*-POC that was of a similar systematicity as the DOC/*to*-POC link developed around the same time. The results of the present study as shown below suggest that this was not the case, but that the emergence of the benefactive alternation was rather a feature of post-Middle English only, i.e. emerged at some point between Early Modern English and PDE.

3.1.2.3. The rise of (to-)POCs as grammaticalisation

The extension of analytic, prepositional structures to into new domains previously covered by synthetic expressions has for quite obvious reasons repeatedly been assessed in terms of grammaticalisation theory (cf. among others, Traugott 1972; Traugott 1982; Langacker 1992; Lundskær-Nielsen 1993; Taylor 1993; Newman 1996; van Gelderen 1996; Fischer 2000; Jarad 1997; Hundt 2001; Heine & Kuteva 2002; Haspelmath 2003; Hopper & Traugott 2003; Luraghi 2003; Tyler & Evans 2003; Rice & Kabata 2007; Rostila 2007; Sato 2009; Iglesias-Rábade 2011). The development of prepositional ditransitives is a clear case in point: originally encoding concrete, spatial relations, the prepositions involved come to fulfil the more grammatical functions of denoting core semantic roles such as (abstract) recipients, deprivees or affectees in ditransitive events. For instance, *from* originally introduced a locative source, but was already used to refer to animate participants deprived of abstract entities in Old English. In regard to the semantic history of *to*, De Cuypere (2013, 2015c) shows that the spatial semantics of the preposition (54a) were likewise already considerably bleached in Old English, with more than two thirds of tokens in a random sample of 500 instances of *to* in OE texts expressing a non-spatial meaning (54b). In addition to *to* indicating a state, quality, or

[76]It is not entirely clear to me how these differences in results came about, as Gerwin is somewhat vague in her description of the ARCHER ditransitive data – although it can be assumed that the same 21 verbs that were investigated for the other corpora in her study were also drawn on in the case of ARCHER, this is not explicitly stated. Wolk et al.'s data is based on a greater number of verbs, and generally seems to be more inclusive. As will be shown below, their findings are also more in line with the account proposed in the present study; however, in order to draw a decisive conclusion, the respective datasets and methodologies would have to be considered in more detail.

condition to be attained as illustrated in the example, it could also be used non-spatially to refer to a specific point in time, a price, an occasion to be attended, or as a source, comparison, or purpose marker (for representative examples see De Cuypere 2013: 127, 2015c: 18-19).

(54) a. ðæt he *cumen* **to Galileum**
'That they may come to Galilee'
(cocura.o2: 43, 20; taken from De Cuypere 2013: 126)

b. Crist hi *gebrohte* **to ecere reste**
'Christ has brought her to eternal rest'
(cocathom2.o3: 440, 28; taken from De Cuypere 2013: 126)

Furthermore, *to* was frequently used to introduce the goal of a bringing/caused motion event as well as the addressee of communicative events; even more so, the proportion of POCs in this case was significantly larger than that of the DOC. Interestingly, as De Cuypere (2015c: 5, based on Cassidy 1938) points out, this trend was slightly more pronounced in the case of communication verbs than with caused-motion verbs. This serves as a further indication of the comparatively advanced semantic bleaching of *to* at this point already, since the concept of ADDRESSEE is arguably more abstract than the relatively concrete notion of GOAL (cf. allative > dative in Heine & Kuteva 2002: 38).

The bridging context for the development of the recipient function of *to* is typically sought in phrases with goals ambiguous between places and (human) institutions (55). It is argued that in such cases, a reanalysis of GOAL to RECIPIENT could easily have taken place – as Colleman & De Clerck (2009: 9) point out, "as a prototypical act of giving involves a concrete object being passed from one person to the other, one can think of the recipient participant as the stationary entity at the end of the path traversed by the theme, i.e., as the goal of the theme's movement" (cf. also McFadden 2002: 108).[77]

(55) Ic oswulf ond Beornðryð min gemecca *sellað* **to cantuarabyrg to cristes cirican**$_{\text{REC?}}$ <u>ðæt land æt stanhamstede</u>$_{\text{TH}}$
'I, Oswulf and my wife Beornthryth give to Christ's church at Canterbury the land at Stanstead'
(codocu1.o1: charter 37.2; taken from De Cuypere 2015c: 20; cf. also Visser 1963: 624)

At first sight, the semantic development of the *to*-POC seems to rather straightforwardly support the case of the *to*-POC to be an instance of grammaticalisation (cf. Jespersen 1927: 291; Newman 1996: 88; Cuyckens & Verspoor 1998: 63; Heine & Kuteva 2002: 37-38; Lehmann 2002: 73; Haspelmath 2003; Rostila 2007: 52, fn45; Hagège 2010: 277-278; Lambert 2010: 14). However, there has been considerable disagreement about the degree of grammaticalisation of the construction – or rather,

[77]Cf. also Newman (1996: 88), who claims that "there is a sufficient mathc of cognitive topologies involving goal and RECIPIENT to support categorizing the RECIPIENT as a goal".

the specific semantic input of PDE *to* and its degree of bleaching is disputed.[78] That is, grammaticalisation in this regard typically concerns semantics only, and features such as a decrease in syntactic contexts are not taken into account. The debate furthermore very much relates to the question of semantic overlap between the DOC and the *to*-POC, i.e. the extent to which both constructions are taken to be semantically/ pragmatically synonymous, and their forming part of an alternation relationship.

An overview of the different views on the issue and their respective proponents can be found in Colleman & De Clerck (2009). Colleman & De Clerck themselves, after investigating the semantic range of PDE *to*-POCs, conclude that while *to* has grammaticalised to a large extent, there are still some traces left of the preposition's basic semantics, which are "to mark the goal at the end of a spatio-temporal path" (2009: 17; cf. also Colleman, De Clerck & Davos 2010). Their line of argumentation is as follows: the meaning of the *to*-POC originates in the spatial dimension, but has been extended to cover a considerably wider range of 'caused possession' events. These include not only prototypical giving events, but also abstract, projected or verbal transfer, metaphorical transfer (e.g. *to lend so./sth. credibility*), or acts of refusal/blocked transfer as in the case of *deny* or *refuse* (cf. also Section 2.1.2 above). One the one hand, the construction therefore seems to have grammaticalised to a large extent. On the other hand, the fact that the *to*-POC is clearly marked with some verb classes (e.g. refusal), and extremely rare with others (e.g. *cost*), is taken to indicate that the preposition has preserved some of its original, basic spatial meaning, rather than having become fully semantically bleached.[79]

The present study will largely follow Colleman & De Clerck's analysis, assuming that in the constructional network of ditransitives, the *to*-POC constitutes a separate construction but still inherits from the more schematic caused motion-construction and thus maintains a (horizontal) link to locative *to*-constructions. At the same time, the construction and its preposition is sufficiently bleached to qualify as semantically (near-)synonymous to the DOC. This process of semantic widening is argued to have been essential in the establishment of the strong link between the two constructions, and the ensuing emergence of the ditransitive constructeme (cf. Perek 2015: 155-156).

In sum, what has been shown in this chapter is that analytic variants involving a range of different prepositions for marking the REC-argument of ditransitive verbs greatly increased in the course of Middle English, and came to be used for all kinds of ditransitive verb classes. The most

[78]For a discussion of the semantics of PDE *to* from a functional-cognitive perspective, see e.g. Tyler & Evans (2003); Evans & Tyler (2007) as well as De Cuypere (2013).

[79]In this regard, the English preposition differs from the otherwise comparable French *à*, as well as Dutch *aan*, which are compatible with a range of meanings including source constructions (the latter possibly due to its locative rather than directional origins), cf. Colleman & De Clerck (2009: 37, n14; 33-37).

frequent and conspicuous of these prepositional patterns was the *to*-POC; this construction saw a considerable semantic widening over time and thereby developed into a member of the infamous dative alternation known from PDE. It has also been demonstrated that the question how this alternation came about has not been adequately addressed in the literature so far. To close this gap and to propose a plausible scenario for this development is one of the major aims of the present thesis. The issue will therefore later be readdressed on the basis of the empirical data analysis that forms part of this study.

While it should be clear from the preceding discussion that the prepositional constructions saw significant modifications in their semantics in the history of English, the fact that the meaning of the DOC also changed considerably is less well known. This development, more precisely the semantic narrowing that can be observed in the DOC's semantics over time, will be the subject of the following chapter.

3.1.3. Changes in the semantics of the DOC

The semantics of the DOC and the set of verb classes associated with the construction in Present Day English have received much attention in linguistic research (cf. chapter 2.1.2 above). In spite of some idiosyncrasies, the construction is taken to prototypically express a sense of transfer, and to be most frequently and commonly instantiated by giving-verbs. A 'transfer of possession'-sense is also highly salient with ditransitives cross-linguistically, with *give* (almost) invariably being included in the range of verbs found in the DOC. However, the construction is typically not restricted to this sub-sense in other languages (cf. Newman 1996; Kittilä 2006; Lambert 2010; Malchukov, Haspelmath & Comrie 2010). For example, Malchukov, Haspelmath & Comrie (2010) demonstrate that rather than expressing transfer in the narrow sense, ditransitive constructions are frequently used to denote 'indirect affectedness'. That is, ditransitives usually depict individuals as affected in their personal sphere by an action that is instigated by an agent participant (Dąbrowska 1997: 17; cf. also Newman 1996; Kittilä 2006). This includes, as illustrated in examples from Modern High German and Polish below, sub-senses such as 'dispossession' (56a), 'malefaction' (56b), and 'pure benefaction' (56c):[80]

(56) a. John *hat* **Mary**$_{REC}$ ein Buch$_{TH}$ *gestohlen*
'John stole a book from Mary'

b. John *hat* **Mary**$_{REC}$ die Schulter$_{TH}$ *gebrochen*
'John broke Mary's shoulder'

c. Krystyna *otworzyła* **Oli**$_{REC}$ drzwi$_{TH}$
Krystyna:NOM opened Ola:DAT door:ACC
'Krystyna opened the door for Ola'
(Dąbrowska 1997: 35; cf. also Colleman & De Clerck 2011: 194)

[80]Cf. also Malchukov, Haspelmath & Comrie's (2010: 51-53) cross-linguistic semantic network maps.

In a similar vein, Barðdal, Kristoffersen & Sveen (2011: 57) conclude that "there is much more to ditransitivity than only the concept of transfer" (cf. also Barðdal 2007). Based on an investigation of the double-object construction in several North Germanic languages, more specifically the West-Scandinavian languages of Icelandic, Faroese, Norwegian, they show that the construction is associated with a considerably wider range of verbs and verb classes than those expressing giving-events.[81] Among other things, the DOC in Icelandic can express events of hindrance or constraining (57a), as well as 'possession' (57b).

(57) a. að þessi aðstaða hafi hugsanlega *byrgt* **honum**$_{\text{DAT-REC}}$ sýn$_{\text{ACC-TH}}$
that this situation has possibly blocked him view
'that this situation may have blocked his view'
(taken from Barðdal, Kristoffersen & Sveen 2011: 63)

b. Dýr […] *áttu* **sér**$_{\text{DAT-REC}}$ bústaði og fjölskyldur$_{\text{ACC-TH}}$
animals had themselves homes and families
'Animals had houses and families'
(taken from Barðdal, Kristoffersen & Sveen 2011: 62)

The authors furthermore provide examples of dispossession verbs being used in the construction in Old Norse, i.e. the ancestor of the Modern Scandinavian languages (cf. e.g. ON *stela* 'steal sth from so, mostly occurring in an ACC-DAT case frame). Importantly, as Barðdal, Kristoffersen & Sveen's study shows, most or indeed all of the sub-senses in this network are found in Old Norse as well as the younger Scandinavian languages, indicating that the lexical range of the construction in North Germanic has not been subject to much change over the centuries (Barðdal, Kristoffersen & Sveen 2001: 79). Furthermore, this phenomenon is taken to suggest that the semantic scope of the Scandinavian DOC is a direct continuation and reflection of the (Proto-)Germanic situation: instantiating a variety of senses associated with 'indirect affectedness', the Germanic construction is therefore presumed to have had a notably wide range of associated meanings (Barðdal 2007: 25). Comparing the Scandinavian evidence (as well as data from German and other Germanic languages) to Present Day English, however, we find that several of these common sub-senses are actually lacking (58a-b).

(58) a. *John *stole* **Mary** a book

b. *John *broke* **Mary** the shoulder

Nevertheless, it appears that this was not always the case – quite the contrary, in earlier stages of the language, there was still a great variety of sub-constructions of the DOC (Rohdenburg 1995: 108). This issue is addressed in detail in Colleman & De Clerck (2011), following up on Rohdenburg's (1995, 2007) observation that the DOC has seen a reduction in semantic possibilities since early Modern English. On

[81] Barðdal (2007) furthermore includes data on Swedish and Norwegian dialects.

the basis of a number of examples from the late 16th to the early 18th century, the latter (Rohdenburg 1995: 108-113, 2007: 219-229) argues that the DOC has lost a number of sub-senses still associated with the DOC in earlier times, including verbs of banishment, verbs of dispossession, and verbs instantiating directive acts (e.g. *command*). Colleman & De Clerck (2011) furthermore draw on Mukherjee & Hoffmann's (2006) and Hoffmann & Mukherjee's (2007) attempt to relate 'odd' DOC uses in Indian English to superstrate retention of earlier British English usage. Analysing a range of 17th to 19th century British texts, these authors find that Indian English has indeed preserved some verbs in the DOC that are ungrammatical in standard BE today.

Colleman & De Clerck themselves present a survey of a sub-set of DOCs in the first sub-period (1710-1780) of the *Corpus of Late Modern English Texts* (CLMET, cf. De Smet 2005), with the intention to compare the semantics of the 18th ct. DOC to that of the PDE construction, and thereby detect any potential diachronic changes in its semantic range (Colleman & De Clerck 2011: 185). The results of their study first of all show that PDE clearly has not extended its meaning as no verb class found in the PDE construction was absent from the 18th century dataset. As the authors note, there is one exception to this statement, namely the class of 'instruments of communication', i.e. verbs such as *to text*, *to e-mail* or *to skype* and *to whatsapp*. However, their absence in the earlier period is easily explained by the technological advances made since then, as many of the instruments were not available yet at this point. Although verbs expressing an equivalent notion such as *to pigeon*, *to pen*, or *to post* are not attested in Colleman & De Clerck's corpus either, it can be assumed that this is rather due to an accidental gap in the data than caused by a grammatical constraint, since other compatible verbs of the larger group of 'sending' or communication verbs certainly did appear in the 18th century (Colleman & De Clerck 2011: 190-191; cf. also De Clerck et al. 2011). A potentially more problematic issue is the use of verbs of ballistic motion in English (59), which cannot be found in the DOC in the Northern Germanic languages investigated by Barðdal (2007: 16 -18) and Barðdal, Kristoffersen & Sveen (2011: 60). As this use is also absent in Colleman & De Clerck's 18th century data, this verb class might represent a new addition to the construction (cf. also Visser 1963: 629).

(59) and *threw* **him** an old rug to cover himself
(BNC; 1983, Michelle Magorian: *Goodnight Mister Tom*)

In contrast to divergences in the range of verb classes, the fact that the range of individual verbs between the datasets in Colleman & De Clerck's study only partly overlap is to be expected considering that the members within a specific verb class might well change even if there are no changes in the verb class as such (Colleman & De Clerck 2011: 191). For example, the innovative DOC uses of *issue* and *feed* mentioned by Rohdenburg (2009) in fact constitute additions to the class of transfer verbs; at the same time, this class has also experienced losses of individual members, with e.g. *deliver* having fallen out of use from the DOC. A particularly conspicuous case of loss is the development of verbs of

Latinate origin such as *donate* or the just mentioned *deliver*, which have become increasingly restricted to prepositional constructions (60a-b); cf. De Clerck & Colleman (2009); Sówka-Pietraszewska (2013). To my knowledge, no conclusive explanation for this diachronic change has been put forward in the literature so far.[82] In contrast, quite some research has gone into determining how the idiosyncratic behaviour of Latinate verbs in PDE, i.e. their strong preference for the *to*-POC can be learnt. As was dealt with above, it is now assumed that pre-emption and priming effects are at play in such cases (cf. Pinker 1989; De Clerck & Colleman 2009; Boyd & Goldberg 2011; Colleman 2011; Colleman & De Clerck 2011; Goldberg 2011; Stefanowitsch 2011; Perek 2015; *inter alia*).

(60) a. *John *donated* **the foundation** five pounds
b. John *donated* five pounds **to the foundation**

A further type of changes within verb classes is that of individual verbs becoming obsolete or changing meaning, which might result in their being ousted from the DOC, or remaining only marginally associated with the construction. This is illustrated in Colleman & De Clerck (2011: 192) by the case of *bespeak*, which has lost its older meaning of 'order' or 'arrange for', and is only infrequently used in PDE, where it means 'to be evidence of' (cf. also *reach*, *engage*).

As to the loss of whole verb classes, which is regarded as a change in the semantics of the construction, the authors observe five main differences between Late Modern and Present Day English: first, verbs of banishment such as *banish*, *dismiss*, *discharge*, *expel*, as well as *forbid* are amply attested in 18th century texts (61a-d), but are unavailable for DOC use in PDE (Rohdenburg 1995: 109-113; Colleman & De Clerck 2011: 193).

(61) a. I will put it entirely into your power to *discharge* **her**$_{REC}$ the house$_{TH}$, if you think proper
(Richardson 1740; taken from Colleman & De Clerck 2011: 194)
b. I therefore for the present *dismiss'd* **him**$_{REC}$ the Quarter deck$_{TH}$
(Cook 1771; taken from Colleman & De Clerck 2011: 194)
c. From some hints in the two letters, I should expect that **the eunuchs**$_{REC}$ were not *expelled* the palace$_{TH}$ without some degree of gentle violence
(Gibbon 1776; taken from Colleman & De Clerck 2011: 194)
d. [He] therefore *forbade* **her**$_{REC}$ the court$_{TH}$
(Walpole 1744; taken from Colleman & De Clerck 2011: 194)

Furthermore, it appears that verbs of pure benefaction (*62*a-b) or malefaction (62c-d), commonly used in the DOC in other languages as shown above, were still felicitous members of this construction in the 18th and 19th century (Colleman & De Clerck 2011: 194-197).

(62) a. and the young Benedictine *holding* **him**$_{REC}$ the torch$_{TH}$ as he wrote

[82]With the exception of Sówka-Pietraszewska's (2013) analysis of ditransitive Latinate verbs in Middle English and PDE in terms of Rappaport Hovav & Levin's (2008) verb-sensitive account, no explanation for this phenomenon has in fact been put forward so far.

(Sterne 1767; taken from Colleman & De Clerck 2011: 1965)

b. He would expect his wife to hand him to the coach, to *open* **him**$_{REC}$ the door$_{TH}$, to reach him a chair
(The Sporting Magazine, January 1819: 164; taken from Colleman & De Clerck 2011: 196)

c. þe deofol **him**$_{REC}$ *scorteð* his daȝes$_{TH}$
'The devil shortened him his days'
(Lambert Homilies, 1175; taken from Colleman & De Clerck 2011: 196)

d. a mischievous mob of colliers […] *spoiled* **me**$_{REC}$ a complete set of blond lace triple ruffles$_{TH}$
(Smollett 1751; taken from Colleman & De Clerck 2011: 197)

Most basically, these verbs denote situations in which an action is performed to the disadvantage or advantage of the REC argument, without any (metaphorical) reception being intended (cf. verbs of 'substitutive benefaction'; Van Valin & LaPolla 1997; Kittilä 2005; Colleman 2010a, 2010b). In contrast to verbs of creation, or 'receptive benefaction' (*John baked Mary a cake*), these benefactive/malefactive verbs cannot be used felicitously in PDE any more. English therefore seems to have developed an 'intended reception' constraint at some point in history, meaning that the REC-argument encodes a participant that is necessarily both a beneficiary and an intended recipient (Colleman & De Clerck 2011: 194; cf. also Section 2.1.2 above). Since uses without intended transfer of possession were, however, still acceptable in the 19th century, and there is considerable regional variation in the strength of the intended reception constraint, the confinement of the benefactive DOC appears to represent a fairly recent phenomenon (Colleman & De Clerck 2011: 194-197).[83]

A further striking case of now obsolete DOC verb classes is the group of privative verbs; more specifically, agentive verbs of dispossession involving volitional subjects (63a-c) are attested in Rohdenburg's (1995) set of 16th to 17th century DOCs, but are rare already at the beginning of Late Modern English and strikingly absent from Colleman & De Clerck's 18th century texts (2001: 200-201; cf. also Hoffmann & Mukherjee 2007: 16).[84] Accordingly, it has to be assumed that the process of ousting of these verbs had started before the time period investigated by the authors.

(63) a. she gave him such a nip by the heart, as did altogether *bereave* **him**$_{REC}$ his night's rest$_{TH}$ with the bruise thereof
(Gascoigne 1575; taken from Rohdenburg 1995: 108; cf. Colleman & De Clerck 2011)

b. Ceres nor Joue, nor all the Gods aboue, Shall *rob* **me**$_{REC}$ this rich purchase$_{TH}$
(Heywood 1613: I; taken from Visser 1963: 635; cf. also Colleman & De Clerck 2011)

c. All joy$_{TH}$ was *bereft* **me**$_{REC}$ the day that you left me
(Scott 1804; taken from Colleman & De Clerck 2011: 200)

[83]Dutch appears to constitute an even more advanced state in this regard, since benefactives have fallen out of use of the DOC entirely at least in the standard variety (cf. Colleman 2011: 403).
[84]Colleman & De Clerck stress the agentivity of the subject in order to be able to account for the continuing use of *cost* in PDE DOCs (2011: 200-201; also Colleman & De Clerck 2009).

Verbs of manner of speaking constitute a smaller-scale and less complete case of change: while verbs such as *whisper*, *shout*, *scream*, or *yodel* have repeatedly been labelled exclusively 'non-ditransitive', Colleman & De Clerck show that the exclusion of this class from the DOC is a strong statistical tendency rather than a strict rule (2011: 197-198; cf. also Stefanowitsch 2006: 69). Attested in sufficient numbers in the 18th century (64a-b), examples of DOC uses of e.g. *whisper* can also be found in PDE data. This indicates that even though there appears to be a ban on manner of speaking verbs from DOCs in PDE, it is not an absolute one, and only came into being after the 18th century (Colleman & De Clerck 2011: 198).

(64) a. At her departure she took occasion to *whisper* **me**$_{REC}$ her opinion of the widow$_{TH}$, whom she called a pretty idiot
(Fielding 1751; taken from Colleman & De Clerck 2011: 198)

b. [She made enquiries] among all those who she could imagine were able to *inform* **her**$_{REC}$ any thing concerning him$_{TH}$
(Haywood 1744; taken from Colleman & De Clerck 2011: 198)

As demonstrated by example (64b), the 18th century DOC furthermore appears to have allowed for a wider variety of communication events, including verbs such as *state* or *command*, mentioned by Rohdenburg as lost uses (1995: 108; cf. also Mukherjee & Hoffmann 2006).

Finally, Colleman & De Clerck discern an interesting development regarding verbs expressing feelings or attitudes such as *envy*, *forgive*, *excuse* or *(not) begrudge* (2011: 198-200; cf. also Hundston & Francis 2000: 88-89). Although these verbs are still associated with the DOC in PDE, they seem to instantiate a case of change in progress: on the basis of a quantitative survey of the CLMET and the imaginary writing component of the BNC, Colleman & De Clerck (2008: 195-196) show that DOC uses with both *envy* and *forgive* exhibit a consistent and statistically significant drop in relative frequency over the last centuries. This is in line with Goldberg's (1995: 132) assumption that

> it seems reasonable that syntactic change should tend toward patterns that are more transparent to the speaker. If the construction with the semantics outlined here [i.e., the DOC with its basic sense of transfer] is psychologically real, then it would be natural for odd cases of ditransitives involving forgive and envy to drop out of use.

The loss of DOC uses is compensated for by an increase in other means of expression - Colleman & De Clerck's (2008) study demonstrates that prepositional theme-constructions (*envy/forgive NP for NP*) have been on the rise.

Movement to other constructions is in fact the typical reaction of verb classes when falling out of use from the DOC. Verbs of dispossession, for example, usually occur in a *from*- or *of*-POC in PDE (65a), while verbs of substitutive benefaction are now restricted to *for*-patterns (65b). Malefactive verbs, in contrast, typically use genitive phrases to indicate the affected person (65c). Importantly, as I will show below, many of these developments can already be seen in Middle English. I will furthermore later

argue that these changes represent a specific type of competition resolution in that one of the competing construction wins out in this case, while the other (DOC) is less successful.

(65) a. They only *stole* sheep **from the Romans**
(BNC; 1989, Magdalen Nabb: *Death in springtime*)

b. Do you think you could just *open* the door **for me**
(BNC; 1985-1994, s_conv)

c. He *broke* **Sonny's** nose
(BNC; 1991, Thomas Hayden: *The killing frost*)

A slightly different type of verbs concerned with attitudes or feelings are *wish* or *intend*, which continue to be available for DOC use in PDE. While both appeared with a range of themes in the 18th century still, the latter is now restricted to collocating with *evil, harm* or *good*, though, i.e. is limited to fixed, fossilised phrased (cf. Colleman & De Clerck 2011: 199-200). *Wish*, on the other hand, continues to enjoy considerable freedom in chosing themes; nevertheless, it is frequently found in comparatively fixed phrases such as *wish so. luck/success/a nice day/…* as well (cf. also Stefanowitsch & Gries 2003).

The comparison of the verb classes associated with the 18th century DOC and those in PDE leads Colleman & De Clerck (2011: 201-203) to conclude that we can indeed observe a reduction in the semantic scope of the construction within the last centuries, which was most certainly in progress even before Late Modern English.[85] Since the construction's range of meaning appears to be have become narrower, i.e. "the semantic range of application of the DOC in the present-day language is a subset of its semantic range in earlier substages of Modern English, [this development] qualifies as an example of specialization in constructional semantics" (Colleman & De Clerck 2011: 188). In such specialisation processes, the question which uses are lost is typically determined by prototype effects. That is, while central senses such as 'caused reception' in the case of the DOC are assumed to be relatively stable, less prototypicality and remoteness from the core meaning of a construction means greater vulnerability to change (Colleman & De Clerck 2011: 204; cf. also Geeraerts 1997: 47-68; Grondelaers, Speelman & Geeraerts 2007: 991).[86] This is precisely what we see in the history of English, as I will claim below: with the move of the DOC towards a more coherent 'transfer'-meaning, more peripheral,

[85]Cf. also Allen (1995: 28-29) and Visser (1963: 606-635), who comment on the DOC, or rather, the different ditransitive case frames in OE covering a broader range of semantic possibilities then than they do now. Incidentally, a similar reduction in the semantic domain of the DOC is also seen in Dutch, while other Germanic languages such as the North Germanic languages mentioned above, but also German, still permit for many sub-senses (cf. also Colleman 2010a, 2010b; Lambert 2010).

[86]As Colleman (2011: 406) points out, the central position of giving verbs in the DOC's semantic network probably also played a role in their retention in the DOC "despite the availability of a good prepositional alternative". The assumption that the sense of received transfer is (and was already in the 18th ct.) dominant in the DOC semantics is furthermore supported by Colleman & De Clerck's (2011: 204) data, as 41% of the tokens in their dataset were taken up by the verb *give* alone (N=2,205).

further removed uses such as verbs of dispossession were driven out of the construction (Chapter 6.2.1.3).

Summing up, we have seen the English DOC has become associated with a significantly narrower range of meanings in the course of its history. While it once probably denoted indirect affection of a participant, it has moved towards a more restricted meaning of (successful) transfer. Uses peripheral to this prototypical transfer meaning, including e.g. the verb class of dispossession but also that of pure benefaction/ malefaction, have accordingly been lost,. The potential causes of this change have received relatively little attention so far, although it has been tentatively linked to some of the changes introduced in the preceding chapters, including case loss and the rise of prepositional competitors (cf. Colleman & De Clerck 2011). In the present thesis, this hypothesis will be pursued. More specifically, the semantic narrowing of the DOC will be connected to the emergence of the dative alternation, investigating whether the closer link between the DOC and the *to*-POC promoted the loss of DOC uses not compatible with the semantic relations expressed by *to*, and vice versa.

3.1.4. Fixation of word order in ditransitives

In the following sections, the major changes concerning word order in ditransitive constructions in the history of English will be discussed. Starting with word order on the clause level, i.e. the fixation of SVO order, I will then move on to the order of the two object arguments involved. As to the first of these, it is clear that the present discussion will not do justice to the immense amount of research that has been carried out on this more general issue. It is nevertheless relevant for the development of ditransitives, since the emergence of a clear subject versus object slot based on discourse-pragmatic and semantic features such as animacy and topicality is complicated by the presence of a second object argument in ditransitive clauses. Moreover, changes in the position of prepositional phrases of any kind in the clause are certainly of interest concerning the order of objects in POCs.

3.1.4.1. Word order in the (ditransitive) clause

An in-depth overview of various theoretical approaches to word order changes in the history of English can be found in Denison (1993), as well as other handbooks on historical English linguistics (cf. e.g. Fischer 1992; Fischer et al. 2000). The most extensive data-based accounts presented so far – to my knowledge – are Bech (2001) and Trips (2002). The latter, as most (or a large part of) the literature on diachronic English word order was written in an explicitly generative framework – see, for example, Pintzuk & Kroch (1985), van Kemenade (1987, 1997, 1999, 2002), Koopman (1990), Pintzuk (1991, 1995, 1996), Kroch & Taylor (1994, 1997, 2000b), Roberts (1997, 2007), Koopman & van der Wurff (2000), Taylor & Pintzuk (2012a, 2012b, 2014, 2015), among many others. Recent accounts have mostly focussed on the impact of information structure on word order variants (cf. e.g. Los 2000, 2009, 2012, 2015; van Kemenade & Los 2006; van Kemenade 2009, 2011, 2012; Westergaard 2010; Hinterhölzl &

van Kemenade 2012; Los & Dreschler 2012; van Kemenade & Westergaard 2012). Cognitive-functional (in particular constructionist) approaches to changes in the history of English word order are more or less non-existent; a constructionist approach to word order changes in the history of Dutch is provided in van de Velde (2014).

Word order in Old English has generally been regarded as a highly complex issue, with Allen (1995: 32) pointing out that "OE constituent order was in fact so complex that analyses which assume a rigid positioning for the verb have not been successful in both accounting for all the observed possibilities and ruling out patterns not found in the texts" (Allen 1995: 32). The issue is complicated by the fact that Old English often eludes a straightforward assessment in terms of subject, verb, object positioning: as discussed in e.g. Allen (1995), Barðdal (2009) or Möhlig-Falke (2012), it is questionable whether a clear subject vs. object slot really existed in (early) Old English already. On the one hand, the presence of an explicit subject was not an absolute requirement at this point yet, which is why OE is sometimes mentioned as a pro-drop language. On the other hand, a number of constructions (usually called 'impersonals') existed where none of the involved argument exhibited all features typically associated with a subject, such as nominative case marking, control of verbal agreement or the triggering of reflexivisation (cf. Harbert 2007, among others). This issue evidently greatly aggravates discussions of clausal word order that go beyond the analysis of relative verb placement.

Even if we assume a clear distinction between the syntactic roles of subject and object in Old English already, assessing Old English word order is highly complex because of the great deal of variation that the system exhibited. For example, both OV and VO orders (66) are found, and despite a preference for V2, V3-position is not strictly excluded at any time (van Kemenade 1987; Pintzuk 1991; Denison 1993; Fischer et al. 2000).

(66) **Se mæsse-preost**$_{S}$ *sceal*$_{Vfin}$ monnum$_{X}$ *bodian*$_{Vnon-fin}$ þone soðan 3eleafan$_{X}$
'The mass priest must preach the true faith to the people'
(Ælfric's letter to Wulfstan 1, 175, ed. Fehr/Oz; c1070; taken from Gast 2007: 48)

Furthermore, word order crucially seems to have depended on a variety of factors including clause type (main or subordinate) or type of constituents (cf. e.g. Bech 2001). While main clauses, for example, were generally associated with (S)VO/SVX order (67a), subordinate clauses tended to be verb-final (72b).[87] SOV/ SXV was also preferred in main clauses with an initial conjunction such as *ac* 'but' or *ond* 'and' (72c).[88] Pronominal forms moreover typically behaved differently to nominal forms

[87]Bech (2001) is in fact not concerned with the positioning of S, V, and O, but rather distinguishes between subject, verb, and slot for 'X', which could be filled by either objects, subject or object complements, or adverbials of any kind (adverbs, adverbial clauses, PP-adverbials).

[88]But see Bech (2001: 89), who shows that clauses with coordinative conjunction are in fact more frequent with SVX order in OE already – of all conjunct clauses, 27.9% are found in this pattern, whereas only 15.3% occur with verb-final, i.e. SXV order.

in that they frequently occurred in pre-verbal position even if this violated the V2 constraint; see, for example, the pronominal object in (67d). Initial adverbials (especially *þa* 'then') as well as initial negative particles or interrogative pronouns, on the other hand, usually resulted in 'subject-verb inversion', i.e. XV(X)S order for both pronominal and nominal subjects (67e-f, cf. Allen 1995: 36; Haeberli 2000). As can be seen in some of the examples, the structure of complex verbs, meaning combinations of finite and non-finite verb forms (e.g. auxiliary and infinitive/participle) was not entirely fixed either in Old English; according to Lundskær-Nielsen (1993: 52), the finite verb typically occured early in the sentence, whereas the non-finite form was either contiguous (immediately following) or found in a so-called 'brace construction' (cf. e.g. (67e).

(67) a. **Se**$_S$ *bið*$_V$ eallenga blind$_X$
'He is quite blind'
(CP, 65:6; taken from Bech 2001: 51)

b. þa$_X$ **he**$_S$ þa$_X$ wiþ þone here$_X$ þær wæst$_X$ *abisgod*$_{Vnon\text{-}fin}$ *wæs*$_{Vfin}$
'when he then was occupied against that army in the west'
(ASC. 894; taken from Lundskær-Nielsen 1993: 62)

c. ac$_X$ **hie**$_S$ nugiet$_X$ *ricsiende*$_{Vnon\text{-}fin}$ *sindon*$_{Vfin}$
'but they are still reigning'
(Or, 38:7; taken from Bech 2001: 58)

d. **God**$_S$ him$_X$ *worhte*$_V$ ða$_X$ reaf of fellum$_X$
'God then made them garments of skin'
(Ælfric's Homilies I, 147–148, ed. Clemoes; c990–994; taken from Gast 2007: 48)

e. hwi$_X$ *sceole*$_{Vfin}$ **we**$_S$ oþres manes$_X$ *niman*$_{Vnon\text{-}fin}$
'Why should we take those of another man?'
(ÆLS 24.188; taken from Haeberli 2000: 110)

f. þa$_X$ *genam*$_V$ hine$_X$ **se awyrgda gast**$_S$
'Then the accursed spirit took him'
(BlHom, 27:8; taken from Bech 2001: 54)

Although these 'rules' can account for a large number of instances, they were by no means absolute and categorical. Rather, as Bech (2001) and others show, they constitute probabilistic tendencies, and exceptions are readily found. This has led some authors to conclude that there is no systematicity at all, but that word order in Old English was essentially completely free (e.g. Fries 1940). More recently, however, it has been proposed that

> there is in fact nothing coincidental about Old English word order at all […] if the verb is placed in clause-final or clause-late position, there are very good reasons for doing so, and these reasons may be found in the interplay between syntax, pragmatics, semantics, and sometimes stylistic factors. (Bech 2001: 194)

That is, the variation in word order patterns is now typically attributed to differences in givenness/accessibility of the subject and other constituents: while discourse-new arguments tend to be clause-late and often follow the verb, discourse-old or given arguments typically appear early in the

clause, i.e. in pre-verbal position (cf. e.g. Allen 1995; Los 2009; Los & Dreschler 2012). A further factor assumed to have played a role in word order is the relative length or 'heaviness' of arguments, with longer constituents tending to be placed later in the clause (cf. e.g. Pintzuk & Taylor 2006: 254; cf. also Taylor & Pintzuk 2012a, 2012b, 2014, 2015).

In the course to Middle English and beyond, we then see a clear move away from the OE heterogeneity in ordering towards greater homogeneity. The VP gradually comes to be fixed to a position to the right of the subject argument, until by late Middle English a large majority of clauses show SVO order (Lundskær-Nielsen 1993: 65; Bech 2001: 197; also Allen 1995; Kroch & Taylor 1997, 2000b; Haeberli 2002; Trips 2002).[89] As to the reasons for this change, they are now commonly sought in the strong impact of pragmatic factors on OE word order, which could have led to syntactic constraints (such as the V2 tendency) being overridden. For example, pre-verbal position could have been reanalysed as a categorical subject position if subjects occurred in this slot with sufficient frequency due to discourse-pragmatic factors (Bech 2001: 194-195; cf. also van Kemenade 1987; Lightfoot 1991; Lundskær-Nielsen 1993; Trips 2002). Furthermore, the loss of case inflections as well as language contact with Scandinavian are often mentioned as potential causes of the fixation of SVO (Kroch & Taylor 1994, 1997, 2000b; Trips 2002).

Before moving on to word order changes in ditransitives, a quick comment on the general distribution of prepositional phrases in Old and Middle English clauses is in order, as this is particularly relevant for ditransitive constructions. First of all, it should be mentioned that word order within the PP was not entirely fixed in Old English: while prepositions were categorically used before their complements if these were nominal, demonstrative and interrogative pronouns, or the relative pronouns *se*, some adverbs such as *her* 'here' and *þær* 'there', interrogative *hwær* and relative *þe* triggered post-position. However, as Alcorn (2011: 8) points out, the situation was considerably more complex with simple, i.e. unmodified and uncoordinated personal pronouns, since these could vary between pre- and postposed prepositions (cf. also Visser 1963: 394, 396; Mitchell 1985: 441-443; also van Kemenade 1987; Pintzuk 1991, 1996; Lundskær-Nielsen 1993; Kroch & Taylor 1997). This variability is illustrated in the following examples (68a-b):[90]

(68) a. þa his gebroþru **to him** *comon*
'When his brethren came to him'
(cocathom1,ÆCHom_I,_21:346.24.412; taken from Alcorn 2011: 8)

[89]As Bech (2001: 198) points out, other orders "had become pragmatically motivated by late ME". For instance, XVS was increasingly restricted to existential clauses, where the order still persists to today (cf. PDE *There*$_X$ *was*$_V$ *a change in the distribution of XVS*$_S$).

[90]For a detailed discussion of this issue and the factors guiding the choice of one option over the other, see Alcorn (2011).

b. oððæt se halga gast **him to** *com*
'until the holy spirit came to him'
(cocathom1,ÆCHom_I,_21:346.24.4121; taken from Alcorn 2011: 8)

Interestingly, this variation is very much absent from Middle English texts. As Lundskær-Nielsen (1993: 44) reports, "[d]uring the 12th century, a rather sudden standardization appears to have taken place in the sequential order of prepositions with a personal pronoun complement, so that from then onwards the order was invariably preposition followed by personal pronoun" (cf. also van Kemenade 1987: 191-192).

In regard to the position of PPs in the clause, it has been pointed out repeatedly that they could appear virtually everywhere in the clause in Old English, even more so than in PDE. This is especially true for adverbial, i.e. adjunctive, PPs. In both main and subordinate clauses, these PPs could occur before subject and verb, either clause-initially (69a), or after an initial adverbial, clause-medially after S and V (69b), intervening between subject and verb (69c) or clause-finally (69d); cf. Lundskær-Nielsen (1993: 66; also Mitchell 1985; Fischer 1992: 377-378; Sato 2009: 177).

(69) a. **On þy ylcan gere** *worhte* se foresprecena here geweorc
'in the same year the aforesaid army made a fortress'
(ASC, 896; taken from Lundskær-Nielsen 1993: 66)

b. þa *foron* he **mid þrim scipum** ut ongen hie
'then they went out against them with three ships'
(ASC, 897; taken from Lundskær-Nielsen 1993: 66)

c. ær Hæsten **to Beamfleote** *come*
'before Hæsten came to Benfleet'
(ASC, 894; taken from Lundskær-Nielsen 1993: 66)

d. *wæs* Hæsten þa þær *cumen* **mid his herge**
'Hæsten had then come there with his army'
(ASC, 894; taken from Lundskær-Nielsen 1993: 66)

Middle English PPs are described as similarly variable, with both pre- and post-verbal position being found. Nevertheless, PPs increasingly came to be preferred in clause-peripheral position, i.e. PPs in intermediate position between subject and verb came to be dispreferred (cf. Fischer 1992; Lundskær-Nielsen 1993). This is corroborated in Bech's (2001) survey of word order in main clauses, which includes adverbial PPs. In her data, a clear trend away from medial position can be observed. While almost 40% of adverbial PPs are found between subject and verb (in any order) in early Old English, these figures significantly drop to less than 5% in late Middle English. At the same time, PP-adverbials in position before subject and verb (either clause-initially, or following another adverbial), which are already highly frequent in Old English (roughly 50%), represent a large majority of all adverbial PP tokens in late ME (Bech 2001: 119-143). The infrequency of clause-late PPs in Bech's data might be due to the exclusion of certain patterns; also, final or late position of PPs might have been more frequent in subordinate clauses (cf. also Lundskær-Nielsen 1993). Finally, including other types of PPs

which were already present in OE and most certainly quite frequent in Middle English, could considerably alter the proportions. For example, as indicated in De Cuypere (2015c: 10), the large majority of *to*-phrases in combinations with accusative NP objects (expressing e.g. directional locations as in [(*70*]) were strongly associated with clause-late position, following rather than preceding the object.

(70) & Florus hine$_{ACC}$ *astrehte* **to Maures fotum**$_{toDAT}$
'and Florus prostrated himself at the Maures' feet'
(coaelive, ÆLS_[Maur]:180.1601; taken from De Cuypere 2015c: 7)

As will be shown in the following, clause-late position was also definitely an option for prepositional RECs in ditransitive clauses, if not even the preferred order.

3.1.4.2. Object order in Old English ditransitives

The order of the two object (or object-like) arguments of ditransitive verbs in PDE as well as the factors determining the choice between the patterns have received considerable attention in the literature so far, much more so than the diachronic dimension of this issue. However, De Cuypere's studies on word order in Old English ditransitives (2010, 2015a, 2015c), with an investigation of Middle English ditransitives being in progress, have remedied the situation to a great extent, as will be shown.

Starting with the Old English double-object construction, it is evident from the sample sentences below that the order of the objects (independent of the specific case-marking) was flexible at this point, as both [REC-TH] (71a) and [TH-REC] (71b) orders can be found.

(71) a. and þær *geoffrode* **Gode**$_{REC}$ menigfealde lac$_{TH}$
'and offered God manifold gifts there'
(Ælfric, AS Hom. 578; taken from De Cuypere2010: 340)

b. Đu *cyðest* […] mildheortnysse$_{TH}$ **ðinum ðeowan**$_{REC}$
'*you show mercy your servant'
(Ælfric, AS Hom. 146; taken from De Cuypere2010: 340)

A number of studies on the frame of [DAT$_{REC}$-ACC$_{TH}$] have reported that the orders are distributed rather evenly in the investigated datasets, which suggests that no order can conclusively be regarded as basic or underlying (cf. Koopman 1990; Allen 1995: 48).[91] De Cuypere (2015a: 26), who in his mixed-effects logistic regression analysis of data from the YCOE takes into account nominal as well as pronominal objects of ditransitives, arrives at a total of 38% [ACC-DAT] vs. 62% [DAT-ACC] orders (N=1,832). De Cuypere's findings furthermore show that contrary to some claims, and irrespective of the later development of the patterns, both orders were perfectly viable and productive at the end of

[91]I am not aware of any studies of word order with other case frames, but the underlying assumption is that they behaved roughly the same as the most frequent [DAT$_{REC}$-ACC$_{TH}$] pattern.

the Old English period (De Cuypere 2015a: 244cf. also Koopman 1990; Allen 1995: 48; Koopman & van der Wurff 2000: 262; Fischer & van der Wurff 2006: 189).

As to the factors influencing which order is chosen over the other, a number of suggestions have been put forward: for example, relative length has quite unsurprisingly been found to affect the order of objects, with longer elements typically following shorter ones. This means that the shorter DAT_{REC} is in relation to ACC_{TH}, the higher the likelihood will be that it precedes ACC_{TH}, and vice versa (De Cuypere 2015a: 239-240, 244; Koopman 1990: 192; also Huchon 1923; Kohonen 1978). Also, the general tendency for pronominal elements to precede nominal constituents appears has been observed to hold for ditransitive objects (cf. e.g. Mitchell 1985: 979; Fischer 1992: 381; Allen 1995: 48; Koopman & van der Wurff 2000: 261; also Smith 1893; Bacquet 1962; Shannon 1964; Brown 1970; Carlton 1970; Kohonen 1978; Mitchell 1985; Koopman 1990; De Cuypere 2010). This is corroborated by De Cuypere's (2015a) results, which indicate that the orders of [*pron*DAT_{REC}-ACC_{TH}] and [*pron*ACC_{TH}-DAT_{REC}], as illustrated in (72a) and (72b) respectively, were more likely to be used than the reverse patterns (cf. also Allen 1995: 48).[92]

(72) a. þæt hi **him**$_{DAT}$ heora lac$_{ACC}$ *offrian sceoldon*
'that they should offer him their offering(s)'
(cocathom1, *Æ*CHom_I,_31:439.11.6079; taken from De Cuypere 2015a: 237)

b. þæt heo hi$_{ACC}$ *dælde* **þearfum and wædlum**$_{DAT}$
'that she distributed them to the poor and needy'
(coaelive, *Æ*LS_[Eugenia]:140.276; taken from De Cuypere 2015a: 237)

Two further variables relating to the ACC-theme which emerged as influential in De Cuypere's analysis were definiteness or 'specificity' and concreteness vs. abstractness (2015a: 237-238, 243; cf. also Koopman 1990: 196). Sentences (73a-b) present examples of a definite and indefinite theme, respectively, while (74a) shows a concrete ACC_{TH}-object 'meat', in contrast to the physically non-perceivable abstract theme object in (74b). The former, i.e. definite and/or concrete themes are expected to precede the latter (indefinite and/or abstract themes).

(73) a. and he *æteowð* þa wunda$_{ACC}$ gewislice **him**$_{DAT}$
'and he truly showed the wounds to him'
(coaelhom, *Æ*Hom_11:290.1637; taken from De Cuypere2015a: 237)

b. þæt he *sealde* sum þing$_{ACC}$ **þearfendum mannum**$_{DAT}$
'that he give something to poor people'
(cowsgosp, Jn_[WSCp]:13.29.6924; taken from De Cuypere2015a: 238)

(74) a. þæt hi *moston* **him**$_{DAT}$ *beran* unforboden flæsc$_{ACC}$
'that they might bring him unforbidden meat'
(coaelive, *Æ*LS_[Maccabees]:90.4871; taken from De Cuypere2015a: 238)

b. and **him**$_{DAT}$ *forgeaf* ingehid ealra gereorda$_{ACC}$

[92]As will be discussed below, DOCs with two pronominal objects are somewhat of a special case, in that they behaved remarkably different from other combinations.

'and gave them knowledge of all the languages'
(cocathom1, ÆCHom_I,_22:358.109.4414; taken from De Cuypere2015a: 238)

The choice between different object orders in OE ditransitives therefore seems to have been largely driven by discourse-pragmatic factors. More specifically, the distribution can, with De Cuypere (2015a: 245) be taken to reflect the principle of topicality or 'harmonic alignment', defined by Bresnan & Ford (2010: 183) as follows:

> linguistic elements that are more or less prominent on a scale (such as the animacy or nominal-expression type scales) [tend] to be disproportionately distributed in respectively more or less prominent syntactic positions (such as preceding in word order or occupying a superordinate syntactic position).

This roughly overlaps with findings on the dative alternation in later stages of English (with some exceptions). Furthermore, the results closely correspond the motivations behind the alternation between *to*-POCs orders in Old English (De Cuypere 2015c).

The Old English *to*-POCs, i.e. patterns with prepositional addressees of communication verbs or goals of verbs of sending/bringing, were flexible in regard to the order of the objects, just like the double object construction. Accordingly, both [ACC-*to*DAT] (75a) and [*to*DAT-ACC] (75b) are found; however, as De Cuypere (2015c: 10, 14) shows, the former are far more frequent than the latter. Nevertheless, PP-first orders were a more than viable option in Old English – in stark contrast to PDE, where this order is highly marked, and restricted to specific contexts (e.g. heavy constituent-shifts).

(75) a. & *sende* his gewrit$_{\text{ACC-TH}}$ **to þam wælhreowan casere**$_{\text{DAT-REC}}$
'and sent his letter to the cruel emperor'
(coaelive,ÆLS_[Julian_and_Basilissa]:249.1090; taken from De Cuypere 2015c: 17)

b. God *cwæð* **to Moysen**$_{\text{REC}}$ ðæt he wolde cumin$_{\text{TH}}$
'God said to Moses that he would come'
(cocathom2.o3: 196, 16; taken from De Cuypere 2015c: 18)

De Cuypere's results also indicate that the distribution of the orders remained stable during Old English, meaning that there was no change concerning the relative frequency of the orders towards the end (2015c: 13). The factors found to be influential in regard to the choice of one order over the other, were pronominality, definiteness, relative length, as well as number of the *to*DAT, with singulars showing a higher likelihood of appearing in second position (De Cuypere 2015c: 13). Furthermore, animate *to*-recipients are preferentially associated with [*to*REC-TH] ordering, while inanimate *to*-recipients almost categorically select for the reverse order [TH-*to*REC] (De Cuypere 2015c: 13). As in the case of OE DOCs, these findings lend support to the 'harmonic alignment' or topicality hypothesis mentioned before (De Cuypere 2015c: 15; cf. also Bresnan & Ford 2010: 183).

In sum, De Cuypere (2015c: 13-15) confirms that although all possible orders of DOCs and *to*-POCs occurred with considerable frequency, already in Old English the ordering was to a certain extent

dependent on the construction used: while *to*-POCs appear to have preferred a [TH-REC] order, DOCs were inclined towards [REC-TH] order. These biases, as well as the general distribution of orders with both constructions were most certainly motivated by discourse-functional factors such as topicality.

3.1.4.3. Object order in ditransitives in Middle English and beyond

The tendency for specific orders with the individual constructions became more pronounced in the course of Middle English then, until [REC-TH] established itself as the canonical order for the DOC, in contrast to [TH-REC] for the *to*-POC (cf. e.g. Mukherjee 2005; also Fischer 1992: 379; Kroch & Taylor 2000b: 150; Polo 2002). This presumption is supported by McFadden's (2002) investigation of the ordering of nominal objects in ditransitive constructions in the PPCME2, represented in Table 3. As can be seen, [REC-TH] was clearly the preferred order for DOCs already in early Middle English texts. Nevertheless, the reverse order still accounted for about a third of all tokens in M1, which is to be expected judging from the OE distribution. In the course of the period, there is a significant decrease of [TH-REC] DOCs, with no tokens at all found in later Middle English; cf. also Koopman & van der Wurff (2000: 265); Polo (2002: 130-135); Allen (2006: 210). In constructions with a pronominal theme, the order possibly survived until the 15th century (Allen 1995: 420).

Table 3 Ordering of full NP objects in ditransitive constructions (based on McFadden 2002: 113)

	DOC			***to*-POC**		
	REC-TH	TH-REC	% TH-REC	REC-TH	TH-REC	% TH-REC
M1	109	57	34.3	3	7	70
M2	18	4	18.2	5	47	90.4
M3	85	0	0	33	147	81.7
M4	60	0	0	14	30	68.2

With the prepositional construction, which was overall highly infrequent in early Middle English but increased in frequency over time, [TH-*to*REC] orders appear to have been more frequent from the beginning onwards, accounting for around up to 90 per cent of *to*-POC tokens in all sub-periods. What is interesting is that despite this predominance of [TH-*to*REC], it is far from categorical at the end of the period. This suggests that the establishment of a canonical order for the prepositional pattern only took place in later times.[93] It is commonly assumed that [*to*REC-TH] gradually disappeared after 1500, and only survived into PDE in restricted contexts (cf. e.g. Rissanen 1999: 268). The reasons for the eventual demise of the pattern are typically sought in the lack of a parallel pronominal construction or rhythm (the clash of two unstressed syllables in *I gave to the man the book*), cf. Fischer (1992: 381); Keilmann (1909: 19); Gerwin (2014: 145). McFadden furthermore notes a slight correlation between

[93]McFadden (2002: 114-116) suggests that part of these marked orders might be due to heavy NP shift of long themes. Although this is borne out by his data to some extent, it cannot explain why the DOC (which was at this point strongly, or even categorically associated with [REC-TH] order) was not used in these cases instead. Gerwin (2014: 142) relates the consistent frequency of *to*REC-TH patterns to French influence.

the frequency of *to*-POCs and the frequency of [TH-REC] in DOCs, in that in texts with a low frequency of the former, the number of the latter appears to be higher (2002: 113-114). This is in line with Allen (2006: 214), who postulates that "the spread of the *to*-dative would have led […] to a reduction in DO IO order […since] both these constructions serve a similar pragmatic function: to focus on the Recipient by putting it sentence-finally" (cf. also Fischer & van der Wurff 2006: 190). De Cuypere (2015c: 16) assumes that it was in fact a combination of this rise of the *to*-POC with its preferred [TH-REC] order and the 'the winner-takes-it-all behaviour' of the DOC's [REC-TH] order which caused the demise of [TH-REC] in the DOC, with both processes reinforcing each other. A similar hypothesis will be put forward in the present thesis, since I assume that the now canonical order of the POC reflects its historical origins in adverbial adjuncts and the discourse-pragmatic features corresponding to this. The fixation of the DOC to [REC-TH] order is taken to likewise reflect functional properties of the arguments involved; moreover, I will below assess the possibility that the increasingly close link between the patterns caused them to develop a complementary distribution.

As to factors influencing the ordering of the objects, McFadden (2002: 116-121) mentions the possibility of an impact of length/syntactic weight, and furthermore suggests differences between pronominal and nominal objects as well as objects with animate or inanimate referents. On the basis of the results of a preliminary study on variables determining the choice between the four sub-patterns ([REC-TH], [TH-REC], [*to*REC-TH], [TH-*to*REC]) in Middle English, which he presented at a workshop organised by the *Ghent research team on linguistic meaning and structure* (GLIMS) in February 2015, De Cuypere (2015b) tentatively concludes that the ME data largely reflect the same discourse-pragmatic tendencies that seem to account for the choice between the options for Old English and PDE ditransitives, with relative length as a strong factor.

While comparable studies on the early Modern period are lacking, Late Modern English is covered by Wolk et al.'s (2013) investigation of the dative alternation in ARCHER, which includes data from 1650 to 1990. Their findings more or less agree with those for the earlier periods (Wolk et al. 2013: 22-24; De Cuypere 2015a: 246; also Gries & Hilpert 2010). For the PDE ditransitive alternation, the following variables have been put forward and tested in the literature so far (list taken from De Cuypere 2015a: 227):

- semantics of the verb (Levin 1993; Lapata 1999; Gries 2005; Bresnan et al. 2007)
- givenness/ newness, i.e. discourse status, of REC and TH (Halliday 1970; Erteschik-Shir 1979; Smyth, Hogan & Prideaux 1979; Givón 1984; Thompson & Koide 1987; Thompson 1995; Bresnan et al. 2007; Ozón 2009; Theijssen et al. 2010[94])
- pronominality/ definiteness of REC and TH (Ransom 1979; Bresnan et al. 2007; Theijssen et al. 2010, 2011)

[94]Theijssen et al. (2010) in fact deal with the 'benefactive alternation' rather than the dative alternation, but find that the factors driving both alternations are approximately the same.

- animacy/ person of REC (Bresnan 2007; Bresnan & Nikitina 2009; Bresnan & Ford 2010; Theijssen et al. 2011)
- weight of REC and TH, i.e. length or syntactic complexity (Bock & Irwin 1980; Bock, Loebell & Morey 1992; Hawkins 1994; Collins 1995; Arnold et al. 2000; Prat-Sala & Branigan 2000; Wasow 2002; Snyder 2003; Wasow & Arnold 2003; Ozón 2009; Theijssen et al. 2010, 2011)
- language-external factors, e.g. speaker variables such as age and gender (Bresnan & Ford 2010; Bresnan & Hay 2008; Theijssen et al. 2011) or geographic region (e.g. Bresnan & Hay 2008; Gast 2007; Gerwin 2014; Hughes & Trudgill 1996; Muhkerjee & Hoffman 2006; Siewierska & Hollmann 2007; Theijssen 2008; Wolk et al. 2013; Yáñez-Bouza & Denison 2015)
- style and modality (e.g. Bresnan et al. 2007)

Many of the variables postulated for PDE ditransitives, such as pronominality, animacy, as well as givenness, are again compatible with the principle of prominence, topicality, or 'harmonic alignment' as indicated above. This principle thus appears to have remained a stable predictor of object order choice over the course of time. In spite of possible changes, and in spite of the slight differences between the specific factors that influence ordering in ditransitive constructions in the respective periods, it can therefore be assumed that the alternation(s) between the orders, and correspondingly between the two constructions in later times, has been roughly motivated or guided by the same semantic and discourse-pragmatic factors throughout the history of English (cf. De Cuypere 2015a, 2015c).

3.1.4.4. Object order in ditransitives with two pronouns

A slightly different issue is posed by ditransitive constructions with two prominal objects, which are quite special in PDE, and also followed a slightly different diachronic path than those with at least one NP object (Gast 2007; Gerwin 2013, 2014; Yáñez-Bouza & Denison 2015). For PDE, it has been claimed that "the prepositional construction (e.g., *give it to me*) is [in general] by far the most frequent" (Biber et al. 1999: 929; also Quirk et al. 1985: 1396n; Huddleston & Pullum 2002: 248, n23). However, this only seems to hold for Standard British and American English, as there is reportedly great dialectal variation especially in the British Isles. For example, [REC-TH] order (*give me it*) is said to be preferred or at least perfectly acceptable in the North and elsewhere (Hughes & Trudgill 1996: 16). In contrast [*pron*TH-*pron*REC] (*give it me*) is frequent in the Midlands (e.g. Lancashire), according to Siewierska & Hollmann (2007).[95]

The last of the patterns, i.e. [*pron*TH-*pron*REC] has often been argued to be the historically preferred one, with the other orders only slowly creeping in (cf. e.g. Visser 1963: 623; Koopman 1990: 175; Allen 1995: 48; Fischer & van der Wurff 2006: 189). However, this has recently been challenged by De Cuypere (2015a: 246-247), who finds a comparatively even distribution of [DAT_{REC}-ACC_{TH}] and [ACC_{TH}-DAT_{REC}] also in cases with two pronouns. Although there thus seems to have been a preference

[95]Cf. also Kirk (1985); Cheshire, Edwards & Whittle (1993); Koopman & van der Wurff (2000); Gast (2007: 52); Hughes, Trudgill & Watt (2012: 20).

for [TH-REC] (76), this was by no means universal. This is also line with Gast (2007), who presents evidence of both orders in Middle English (77a-d).

(76) & *hæfde* hit$_{TH}$ **him**$_{REC}$ wel neh twelf monæð
'and kept it for himself for about twelve months.'
(Anglo-Saxon Charters S 1467, ed. Sawyer; c1040; taken from Gast 2007: 49)

(77) a. he wule hit$_{TH}$ **me**$_{REC}$ *for3euen*
'he will forgive it me'
(Lambeth Homilies; a1225, W-Midlands; taken from Gast 2007: 50)

b. 'Gossip', quod þe wolf, '*for3ef* hit$_{TH}$ **me**$_{REC}$'.
'"Close friend", said the wolf, "forgive it me"'
(The Fox and the Wolf; a1300, prob. Kentish; taken from Gast 2007: 50)

c. Gode faith **me**$_{REC}$ it$_{TH}$ *tau3te*
'Good faith taught me it'
(Piers Plowman B; c1378, W-Midland; taken from Gast 2007: 51)

d. A pure man […] prayed þaim to *giff* **hym**$_{REC}$ it$_{TH}$
'A pure man prayed them to give him it'
(Alph. Tales; c1450, dialect not classified; taken from Gast 2007: 51)

These findings then also cast considerable doubt on, or would seem to even downright disprove, the often-made assumption that [REC-TH] in British English constitutes a recent innovation, only to become frequent from the 19th century onwards (Gerwin 2013: 448). Similar claims can be found in Yáñez-Bouza & Denison (2015), who on the basis of a large-scale quantitative investigation of these patterns from the 15th ct. up until today, conclude that [REC-TH] only increased in frequency and became a productive alternative in the early 20th ct. (cf. also Fischer & van der Wurff 2006: 190).

These positions are not necessarily incompatible, though, since as far as I see, the mere presence of [REC-TH] orders in ME is not enough to prove that the reverse order was not the preferred option. It might well have been the case that although both orders were equally frequent in OE, one pattern decreased in later periods, only to rise again in the 19th/20th century. Moreover, as De Cuypere (2015a: 247) shows, there are striking differences between the various types of pronouns: while OE *tat* 'that' and *tis* 'this', for instance, were closely associated with [REC-TH] order, *(h)it* 'it' strongly favoured [TH-REC]. The fact that both Gerwin (2014) and Yáñez-Bouza (2015), as well as many previous accounts, primarily focussed on the latter pronoun, which probably showed a preference for [TH-REC] (even if not categorical) throughout the periods, could then have easily brought about this apparent mismatch. Possible reasons for why *it* showed such a high predilection for this order are its phonological shape, because due to its greater 'weakness' (more phonological reduction, less stress) in comparison to other pronouns, it should tend to precede other elements in the clause (De Cuypere 2015a: 248; also Jespersen 1927: 288). Another possibility is influence of information structure, as *it* is typically used anaphorically (i.e. refers to given information), in contrast to the typically cataphoric pronouns *this* and *that*, introducing new information (De Cuypere 2015a: 248). Since given information is commonly

assumed to precede new information, this would then explain *it*'s preference for first position. Gast (2007), on the other hand, proposes that the dominant order of [TH-REC] reflects the 'principle of frequency-based serialization', meaning that the high token frequency of verb+*it* strings is able to override analogical pressures from other DOC patterns (cf. also Gerwin 2014: 187-188). Yáñez-Bouza & Denison (2015) take a similar approach: making use of the concept of 'prefabs' (cf. e.g. Bybee 2013), they assume that the great frequency of specific strings leads to a greater autonomy of these patterns through constructionalisation. Other, less frequent patterns are in contrast linked to a more schematic DOC/*to*-POC construction with distinct ordering of the objects. This proposal is also taken up in the present study; that is, I will put forward the hypothesis that non-canonical orders were able to survive as lower-level idiosyncrasies if they were (token-) frequent and therefore entrenched enough.

Finally, the prepositional [TH-*to*REC] pattern, which is supposed to be the prototypical choice for a large majority of English speakers when dealing with ditransitives with two pronominal objects, entered the stage in Middle English, and increased over time at the expense of the non-prepositional [TH-REC] in some or even most dialects (Gerwin 2014: 181-186). In conclusion, the history of these specific patterns hence partly diverges from the general development of ditransitive constructions, in that the DOC variant in this case did not become limited to [REC-TH] order to the same extent as nominal DOCs. On the other hand, the emergence and spread of the prepositional pronominal object-construction (*gave it to her*) corresponds to the rise of the general *to*-POC, with the exception of e.g. Northern varieties of British English, where the PP-pattern is clearly more marginal than the DOC (with both orders).

3.1.4.5. Summary

To sum up, it has been shown in this chapter that significant changes were under way from late Old English (or even before) onwards in regard to word order, which had considerable consequences for the shape of the Present Day English dative alternation. Regarding the ordering of constituents in the entire clause, Old English exhibited a great deal of variation. From late Old English/ early Middle English onwards, however, SVO orders increased and eventually became near-obligatory. This rise was most certainly discourse-pragmatically motivated, with specific orders appearing more frequently due to information structure issues. Although this change is usually not addressed in discussions of Old and Middle English ditransitives, I argue that it is particularly interesting in this case: first, the additional argument of ditransitive verbs, i.e. the recipient, can be analysed as intermediate between subject and object concerning its prototypical discourse-pragmatic/topicality status. What this means for the placement as well as case marking of this argument will be discussed in detail below. Second, prepositional phrases have been shown to increasingly move to clause-peripheral position, outside the core group of subject, verb and object. However, PPs marking core semantic roles might have been

exempt from this rule to some extent; as will be shown below, this is in fact precisely what happens in the case of the (*to*-)POC.

Concerning the sequence of the two arguments of ditransitive verbs, both [REC-TH] and [TH-REC] order were found in both the DOC and the (*to*-)POC in Old English. This choice became increasingly associated and correlated with the choice between prepositional and non-prepositional patterns over the course of the Middle English period, until the DOC came to canonically show [REC-TH] order, while the *to*-POC was used almost exclusively with [TH-REC]. The factors guiding the use of one order/construction over the other are roughly the same in all periods, with only minor differences being detected. Most strikingly, the choice seems to continuously have been driven by features linked to the principle of topicality/focus or harmonic alignment. As I will argue below, this development of a complementary distribution of orders and corresponding discourse-pragmatic features between the two constructions could be taken as a sign of the establishment of the dative alternation.

3.2. Possible correlations and causal effects between the changes

The bottom line of the preceding sections is that a number of changes of great consequences took place in Middle English, which most probably started even before this period. The question of what triggered these changes, and whether, since they all occurred roughly around the same time, they correlated or had a causal effect on each other, has occupied historical linguists for quite some time now. In general, it has been observed that (fixed) word order and the use of any sort of 'flagging', most saliently case marking or prepositions, are among the primary strategies of encoding arguments cross-linguistically (Malchukov, Haspelmath & Comrie 2010: 6; cf. also Hagège 2010: 10). These means of role-marking are typically functionally more or less equivalent: as Zwicky notes, "[e]verything you can do with Adps [i.e. adpositions] you can do with case inflections, and vice versa" (1992: 370). It is furthermore assumed that an inherent relationship holds between the various strategies, with the presence of one often impeding the use of the other. For example, Haspelmath's typological study on ditransitive constructions in the world's languages suggests that word order tends to be more flexible in cases where at least one of the objects is flagged, while a more rigid object order is to be expected when flagging is lacking (2015: 31-32; cf. also Allen 2006: 214). In the latter case, the order of the objects is predominantly [REC-TH] – a fact which Malchukov, Haspelmath & Comrie (2010: 12) explain by topicality effects such as REC generally being animate.[96] In contrast, in the former case REC is more likely to follow TH if it is flagged by an adposition, and the other way round if case affixes are involved; see also Hawkins' (1994, 2014) 'Early Immediate Constituents principle' (further Givón 1984; Primus 1997; Heine & König 2010). Languages have also been shown to vary diachronically in regard to which strategies they use: if more strategies to mark clause constituents are available in a language, one

[96]Cf. also the principle of 'harmonic alignment' as mentioned above.

strategy is typically lost, or the competing means of coding typically functionally diverge (Hagège 2010: 37).[97]

Present Day English argument encoding and the history that is reflected in it quite obviously fit very well into this picture. With almost no traces of the original inflectional system left, its word order is rather inflexible, and prepositional paraphrases are abundantly used. In contrast, Old English featured a (comparatively) rich case morphology, employed prepositional phrases to a lesser degree, and showed less rigid constraints on word order.[98] Although the different strategies used at various points in English thus evidently seem to be correlated, this does not yet necessarily mean they are causally related, in that the loss of one strategy was the result (or cause) of another strategy rising. It is also clear that alternative explanations without making recourse to the other changes can be found for all of the developments discussed. Nevertheless, several (often directly opposing) theories on cause and effect in the changes witnessed in the history of English have been put forward. On the one hand, it has been argued that the breakdown of the morphological case marking system forced the system to react and procure other means of encoding the function of the clause constituents, in our case prepositional paraphrases and fixed word order (cf. e.g. Kellner 1892; Meillet 1949: 187-192; Mossé 1952; Saitz 1955; Mustanoja 1960: 70; Vennemann 1974; Hock 1982; Lehmann 1985; van Kemenade 1987; Weerman 1987; Stockwell & Minkova 1991; Fischer 1992: 374; Roberts 1997; Neeleman & Weerman 1999; Trips 2002; Fischer & van der Wurff 2006: 166; Gast 2007: 50; Iglesias-Rábade 2011: 191, inter alia). On the other hand, push-chain scenarios, with an increasingly rigid word order and more frequent use of PPs rendering case inflections redundant and unnecessary, have also been put forward (e.g. Jespersen 1894; Horn 1921: 131; Dančev 1969; Traugott 1972: 81; Mitchell 1985: 518; Kitson 1992; Allen 2005: 232). A compromise solutions interating both approach is proposed in Samuels (1972: 80-84; cf. also Lunskaer-Nielsen 1993: 25-27).

[97]It is clear that these correlations are tendencies rather than hard rules. Within the Germanic languages, for example, both Icelandic and Dutch do not fit the pattern: the former has developed relatively fixed word order despite a largely intact case system, whereas the latter has lost most case morphology, but has nevertheless retained comparatively flexible word order (cf. Barðdal 2009: 129-131).

[98]Note that many languages closely related to English also show such a correlation: for example, a number of Germanic languages such as Dutch, which has similarly undergone a reduction of the case system, frequently use prepositions for semantic role marking. Recipients are furthermore also marked prepositionally in the comparatively inflection-poor Romance languages (cf. also Malchukov, Haspelmath & Comrie 2010). While Standard German strikingly lacks a prepositional ditransitive construction, a PP-competitor has reportedly formed in some regional varieties like Bavarian (iii) and Northern as well as Central Swiss Alemannic (Seiler 2006). At least in the first of these dialects, this development seems to be quite clearly linked to the absence of case distinctions, as Seiler remarks (2006: 174-176).

(i) du muasst es$_{TH}$ **a deiná frau**$_{REC}$ *vaschraibn* lássn
you must:2S it DM yourDSF wife transfer let:INF
'you have to transfer it [=the money] to your wife'
(Malching; Ströbl 1970: 66; taken from Seiler 2006: 170)

In regard to ditransitives, drag-chain hypotheses have been pursued by McFadden (2002) and Polo (2002), who both attempt to relate the emergence of the *to*-POC as well as the fixation of object order in the DOC to the demise of the morphological case marking system. More precisely, McFadden suggests that once an overt distinction between dative and accusative case on the objects of ditransitive verbs had disappeared, disambiguating between the objects' semantic roles was complicated. This issue was made worse by the flexibility in ordering of the objects. At this point then, *to*-POCs and fixed object order stepped in to fill the functional gap (McFadden 2002: 108-112). Allen (2006: 209-214) challenges both accounts, claiming that it was only when dative-fronted passives (as in **Him was given a book*) disappeared that category distinctions were finally lost. With this, [TH-REC] order would also have been ousted. Although Allen's argumentation on the one hand indicates a drag-chain analysis, she on the other hand also states that loss of case marking is unlikely to be the only cause of the changes in question (Allen 2006: 202). Furthermore, she hints at one of the major arguments against such a scenario: both prepositional paraphrases for the DOC as well as certain word order tendencies were already present in Old English, which was therefore arguably less reliant on case marking than often taken for granted (Allen 2005: 226). This would then count in favour of a push-chain scenario rather than the loss of case marking 'forcing' PPs and word order to step in.

The present thesis will critically assess the plausibility of both scenarios, and will ultimately follow Lundskær-Nielsen (1993) as well as Allen (2005, 2006) in assuming that the interaction between the processes mutual rather than onesided. Drawing on the development of the DOC in English, Allen (2005: 246, 2006: 215) for example suggests that if one order of objects becomes more frequent due to a reduction in reliability of inflections, speakers could associate position with a specific semantic role, which could lead to more careless use of case marking. If we then add an increasingly frequent use of prepositional paraphrases, case syncretism could become even greater, in turn causing the speakers to rely more heavily on word order to interpret and encode semantic relations. I will furthermore address the role the establishment of the dative alternation, i.e. the stronger and stronger link between the members of the alternation, played in the fixation of object orders as well as the semantic narrowing of the DOC, and the semantic widening of the *to*-POC. The latter issues have received little attention and have not been addressed on the basis of any empirical investigation so far.

The triggers of the semantic specialisation of the DOC are typically also sought in the process of case loss and the concomitant rise of prepositional competitors, as mentioned above. For instance, Colleman & De Clerck (2011: 201-202) point out that it appears entirely reasonable to link the semantic specialisation process seen in the DOC with the lack of explicit and unambiguous marking of semantic roles of the arguments involved. This is supported by the fact that languages with a limited morphological case marking system (such as Dutch or Swedish) also usually show a narrowing in the

semantics of the DOC (cf. also Barðdal 2007; Colleman 2010b, 2011; Barðdal, Kristoffersen & Sveen 2011). In contrast, languages such as German or Faroese, which have maintained a rather rich inflectional system, have also preserved many of the uses that are obsolete in English, as has been shown. Although the specialisation of the construction could therefore be regarded as a 'long-term effect' of the loss of morphological case marking, there is no clear one-to-one correspondence: Icelandic, for instance, shows certain semantic restrictions which cannot be explained by deflection, as case marking is still rather prominently present in this variety (Barðdal 2007; Barðdal, Kristoffersen & Sveen 2011). Rather than linking the process to the loss of case marking, I will therefore test the plausibility of a causal link between the construction's semantic narrowing and its entering an alternation relationship with the *to*-POC.

4. Empirical data analysis (corpus study)

The main foundation of this project is a large-scale quantitative study of ditransitive instances in the *Penn-Helsinki Parsed Corpus of Middle English* (PPCME2). This dataset will be used to empirically invstigate a number of questions and hypotheses relating to the main research interests of this thesis. As repeatedly mentioned above, the most basic aim of this project is to provide a historical answer to why the dative alternation is there in PDE, and why its members exhibit certain formal and functional features. On the basis of the overview of literature on the dative alternation in Present Day English and its history given in the preceding chapters, a number of more specific hypotheses regarding these questions can be formulated:

First, we are interested in how the loss of morphological case marking affected the constructions in question, in particular the DOC. Starting from the assumption that less type frequent case frames such as [DAT-GEN] or [ACC-ACC] had already been ousted before the period covered by the corpus, and that the default case frame for ditransitive verbs at this point was [DAT_{REC}-ACC_{TH}], we expect an increasing ambiguity of dative and accusative markers on the NP arguments in the course of Middle English. While case syncretism is predicted to be quite advanced in the beginning of the period already, at the end of the period case markers are anticipated to be either absent or entirely ambiguous (with some exception in the case of pronouns).

Second, and most importantly, the question of how the prepositional alternative to the DOC came into being, and in consequence, how the dative alternation established itself, is addressed. There are several partial issues that need to be attented to in this regard: on the one side, the relative frequency of POCs in comparison to the DOC is of relevance, since I presume that the prepositional variants greatly increased at the expense of the synthetic construction over time. In this context, determining the different types of POCs and their respective frequency distribution will also be looked at. That way, it can be tested whether *to*-patterns did in fact constitute the most frequent and most prominent POCs – a necessary prerequisite for the establishment of the dative alternation, it would seem. On the other side, as the DOC is not predicted to fall out of use entirely, but to be retained with some verb classes, the relative distribution of DOC and POCs with individual verbs and even more importantly, with individual verb classes needs to be investigated. I here expect to see clear differences in behaviour of the various verb classes: while the POC should oust the DOC in the case of verbs of dispossession, for example, in the case of transfer verbs, both constructions are predicted to still be present at the end of the period. The verb classes are furthermore hypothesised to differ in choice of POC-type; while source-prepositions such as *from* should be preferred by verbs of dispossesion, transfer-verbs are likely to select for goal-prepositions such as *to* or *towards*. Based on the literature, variation in this regard should be relatively high in the beginning, meaning that a number of distinct POCs occur with single

verb classes. In the course of the period, however, the system is likely to see a regularisation. Most importantly, in order for the dative alternation to become established, *to* is required to be highly frequent at all times, and to increase in relative frequency over time, especially with transfer and transfer-related verbs.

This directly relates to the question of whether a semantic specialisation of the DOC can be seen in Middle English already. While it is clear that such a narrowing took place in the history of English, it has not been confirmed whether this process had already started by Middle English times. Establishing the number and types of verb classes present in the Middle English DOC in the corpus will allow us to address this issue. Furthermore, investigating the proportional frequencies of the respective verb classes at various points in Middle English can potentially reveal any changes within the period. The precise hypothesis put forward here is that verbs of dispossession and verbs of pure benefaction/malefaction are increasingly lost from the construction already at this stage, since these classes are absent or highly infrequent in the 18th century dataset examined by Colleman & De Clerck (2011).

A third aspect of the PDE dative alternation to be investigated concerns word order characteristics. As seen above, the constructions moved from considerable flexibility in object ordering to a complementary distribution, with the DOC prototypically showing [REC-TH] order, and the *to*-POC commonly opting for the opposite one. At which point in time this move took place, and which developments were involved in the change can be answered by looking at the orders available for each construction at various stages in the corpus. Furthermore, the relative frequencies of these orders is of interest. In particular, we are interested in potential differences in object placement between the DOC, the POCs overall, and the *to*-POC. While the DOC is expected to show a more balanced distribution of orders in the beginning of the period, the POCs predictably prefer PP-late position. This preference is thought to become categorical towards the end of the period, while the DOC should opt for the reverse order, i.e. [REC-TH]. As regards changes on the clause-level constituent order of ditransitives, both constructions are assumed to conform to the general fixation of SVO order in the course of the period. Nevertheless, distinctions might hold between the various constructions (DOC, POC, and *to*-POC). For example, a more rapid increase of rigid SVO order is predicted for the DOC, since the loss of case marking presumably results in greater ambiguity between the similarly topical subject and recipient arguments. Finally, the behaviour of POCs and *to*-POCs can be compared to that of PPs in prepositional (non-POC) patterns in general. If the former represent more grammaticalised constructions than the latter, an extension in syntactic contexts should be seen with them.

Finally, starting from the assumption that the individual changes affecting ditransitives did not take place independently, I aim to investigate whether the changes correlated in time, and whether we can deduce causality from such correlations. The main hypothesis examined in this regard is that

the establishment and existence of the dative alternation had far-reaching consequences for both constructions involved, in particular concerning their word order/ object preferences and their semantics. This could then be explored in terms of 'co-evolution', meaning that the constructions could be viewed as adapting to each other. The loss of case marking is, in contrast, hypothesised to have been caused by processes unrelated to the dative alternation, although a certain contributory effect of the presence of prepositional paraphrases and word order tendencies in Old English could have been given nevertheless.

In the following, I will briefly introduce the basic features of the corpus used to investigate the questions and hypotheses just presented (4.1.1), and discuss the methodology applied (4.1.2). Here, the method of data extraction, classification and analysis will be commented on. Afterwards, the results of the study are presented, with the order of presentation reflecting the sequence of research interests outlined (4.2). That is, I will start with results on the loss of case marking (4.2.1), before moving on to the rise of the dative alternation (4.2.2), changes in the semantics of the DOC (4.2.3), and the fixation of word order (4.2.4). Finally, findings concerning possible correlations between these changes are shown (4.2.5).

4.1. Data and methodology

4.1.1. Corpus description

The *Penn-Helsinki Parsed Corpus of Middle English, 2nd edition* (Kroch & Taylor 2000a) was compiled by researchers at the University of Pennsylvania and University of Helsinki and is part of the *Penn Corpora of Historical English*. It was chosen for this thesis due to its ready availability, its acceptable representativeness (given the circumstances) and most notably its format, since all texts are part-of-speech tagged as well as syntactically annotated, allowing researchers to approach questions of syntax comparatively rapidly and easily.

The corpus comprises a total of 1,155,965 words, distributed over 56 text samples dating from 1150 to 1500, and stemming from five dialects areas and fifteen different genres. The texts are divided into four main periods (M1-M4); each period covers roughly 100 years (Kroch & Taylor 2010). Aside from these core sub-periods, which contain the large majority of texts and approximately 80 per cent of the total number of words, there are five extra periods including texts for which the dates of the earliest manuscripts differ from the date of original composition (Mx1, M23, M24, M34, Mx4). Due to the unclear status of these additional sub-periods in the chronological development of Middle English, and since this study is crucially concerned with diachronic change – meaning that these these data would have posed considerable problems for classification – I decided to disregard these texts.

Information on the sizes of the respective periods (M1-M4), as well as the representation of different dialect areas and genres can be found on the corpus' website (Kroch & Taylor 2010).

Unfortunately, the corpus is comparatively imbalanced and unrepresentative in that certain periods (e.g. M3), dialects (especially the South) and genres (religious texts) are clearly overrepresented. While certain insufficiencies could be remedied by including more data/ texts from so far underrepresented dialect areas, the possibilities for doing so are, however, naturally limited due to the typically rather limited availability of historical texts.[99] In spite of these drawbacks, the PPCME2 to my knowledge represents the most readily available and most elaborately prepared corpus (especially concerning syntactic annotation) for Middle English at this point and is therefore thought to be valuable as an object of investigation. Furthermore, as Kytö & Rissanen (1992: 4) argue, it has proven to be "extensive enough to show fairly reliable and consistent trends of development in a large number of topics".

The files of the PPCME2 can be accessed in three different formats; apart from simple text and POS-tagged files, parsed (i.e. syntactically annotated) text allows the user to search for syntactic structure (Kroch & Taylor 2010). The corpus mark-up is in general carefully done and largely consistent, with only some discrepancies noted.[100] The next two sections will present the methods of data collection, i.e. how the relevant tokens of ditransitive constructions were extracted from the PPCME2, as well as the classification schemata applied to the resultant database.

4.1.2. Methodology

4.1.2.1. Data collection/ extraction

Among other corpora, the PPCME2 was specifically designed to be compatible with the Java-program *CorpusSearch*, a DOS-based tool allowing the user to both construct and search syntactically annotated corpora (Randall 2009). Information necessary for the program to work with are on the one hand, the parsed files of the corpus (.psd) as input/source files, and on the other hand, a command file with a certain query, i.e. details on the structures the user is interested in. On the basis of these, *CorpusSearch* then creates an output text file which contains clauses with the structure searched for as well as basic frequency counts (Randall 2009).

In the case of this research project, the query was kept as broad as possible: while the command 'node: $ROOT' indicates that the entire tree should be regarded as the search domain, the queries '(NP-OB1 precedes NP-OB2)' / '(NP-OB2 precedes NP-OB1)' limit the output to only those sentences in which both a NP-OB1 (DO/TH) and a NP-OB2 (IO/REC) are present.[101] This search also yielded by-

[99]An interesting addition to the PPCME2 might be presented e.g. by the corpus of the Middle English Grammar Project (MEG-C; carried out at the University of Stavanger), which is reportedly biased towards Northern texts.
[100]For example, the objects of privative verbs such as *robbing* are frequently marked distinctly (either as IO or DO) without any clear systematicity.
[101]Since word-order variation (also concerning the whole clause) is one of the major foci of this study, the option of restricting the output to immediate sequences of the objects ('X iPrecedes Y') was deliberately not chosen.

products such as passive DOCs (78) and DOCs with clausal TH-arguments (79a-b). However, these had to be excluded, since the search strategy did not guarantee that all such instances would be found.

(78) & hit$_{TH}$ *schal beo for ȝeue* **þe**$_{REC}$
'and it shall be forgiven you'
(CMANCRIW-1,II.102.1233; M1)

(79) a. no-man may be so bold *to aske* **þe**$_{REC}$: 'Why dust þu so ?'$_{TH}$
'Nobody may be so bold as to ask you: 'Why do you do this?'
(CMAELR3,43.512)

b. he *grauntede* **hem**$_{REC}$ to be kyst of a synful womman$_{TH}$
'he allowed them to be kissed by a sinful woman'
(CMAELR3,43.502)

After manually filtering through the obtained results, a total of N=2,542 instances of the DOC was retained. From this database of DOCs, a list of 205 ditransitive verbs was compiled in the second step. Using the free-ware program *AntConc* (Anthony 2014), and drawing on information about spelling variation in the *Electronic Middle English dictionary* (University of Michigan Regents 2013), I then searched for instances of these verbs selecting for a PP-'recipient' and a NP-theme, i.e. patterns regarded as potential paraphrases of the DOC.[102] This resulted in a total of N=2,886 observations. Importantly, these prepositional paraphrases were not limited to *to* and *for*, but included a range of different prepositions such as *till*, *in*, *from*, *of*, *with, on* or *at* and others (cf. Herriman 1995; Mukherjee 2005). The potential periphrases were defined by exclusion, because starting with a fixed set of criteria to identify the competitors was considered difficult if not circular. The approach was thus rather exploratory in nature – nevertheless (or precisely because of this), operationalising the search represented some of the major challenges in the empirical part of this thesis. Among others, the following constructions were excluded from the database (cf. also De Cuypere 2015c):

(80)

- **locatives/ spatial uses**

a. if eny man *sette* hande **oppon him**
'if any man lay hand on him'
(CMBRUT3,24.700; M3)

b. and *put* **in hym** the liknesse of the devel
'and put the likeness of the devil into him'
(CMCTPARS,305.C2.710; M3)

c. and *sent* him **into Normandye**
'and sent him into Normandy'
(CMCAPCHR,101.2140; M4)

[102]In fact, two different approaches were used in order to cross-check the results; the alternative method was to search for sequences of PPs and NP-OB1s in the corpus by means of *CorpusSearch*. Although this approach was probably the less complicated one, it was found to be equally time-consuming as the other procedure, since a great number of instances had to be discarded manually.

- **'resultatives'**

  d. And fynally *broughte* man **to reste & blysse**
  'and finally brought man to rest and bliss'
  (CMFITZJA,B6V.225; M4)

- **object complements**

  e. wið mine halend Criste , ðe ihc *cheas* **to lauerde**
  'with my saviour Christ, who I chose as my lord'
  (CMVICES1,23.240; M1)

- **accompaniment**

  f. And he *hadde* **with hym** Harry
  'and he had Harry with him'
  (CMGREGOR,98.79; M4)

- **comparison**

  g. *Make* we man **to oure ymage and liknesse**
  'let us make mankind in our own image and likeness'
  (CMOTEST,I,20G.61; M3)

- **change/alteration**

  h. Icc *hafe wennd* **inntill Ennglissh** | | Goddspelles hall3he lare
  'I have turned [i.e. translated] the gospel's holy teaching into English'
  (CMORM,DED.1.4; M1)

- **purpose marker**

  i. se ðe ne *3ifð* naht his eihte **te goule**
  'he who does not give/lend his money at interest/ as rent'
  (CMVICES1,79.903; M1)

A large number of cases could have been excluded by restricting the tokens to observations involving animate recipients. However, even though there is a clear tendency for animate REC-arguments, inanimate RECs are occasionally found in Middle English and PDE DOCs. Imposing this constraint would thus have run the risk of dismissing potentially interesting tokens (cf. Jespersen 1927; Goldberg 1995: 146-147; Haspelmath 2004; De Cuypere 2015a: 12; De Cuypere 2015: 3).

The strategy of taking the DOC as a starting point for further investigations resembles Mukherjee's approach, who in his treatment of ditransitives in PDE asserts that he "ascribe[s] the label 'ditransitive' only to those verbs which are attested in the basic form of ditransitive complementation [i.e. in the DOC]" (2005: 12). While theoretically, I also follow Mukherjee in considering all other constructions these verbs appear in to be relevant, for reasons of feasibility and practicability I did not take into account all of these constructions in the present thesis (cf. Szmrecsanyi 2007; Bresnan & Hay 2008; Gerwin 2014). Instead, 'ditransitives' as represented in this study are restricted to active DOCs and POCs with two explicit, non-clausal objects. Moreover, only the recipient argument can be expressed by either an NP or a PP, whereas the theme is strictly non-prepositional.

In order to reduce the potential skewedness towards DOCs that is still inherent to this approach, only verbs that were truly alternating between the DOC and the prepositional patterns, i.e. attested in both constructions, were taken into account in the end, resulting in a final number of N=2,535 for the DOC, N=2,886 for the POC and accordingly a total number of N=5,421 of ditransitive patterns.[103] As will be seen, the data is nevertheless still biased towards the DOC in that certain features such as case marking were only analysed for the DOC and not the (*to*-)POC. For example, a more encompassing analysis would have to take into account the full semantic potential of the prepositions and the various constructions it could appear in.

4.1.2.2. Classification

For the classification of the Middle English ditransitive constructions (DOC, POC), various different criteria were drawn on. First, the individual instances were annotated for textual information, i.e. file name/text, token ID of the clause (e.g. page and line references), as well as the relevant text tokens themselves. Furthermore, philological information specifying the date (sub-period), dialect, and genre of the file in question was included. Second, evidence reflecting the major research questions of the project was gathered. This involved, in a first step, assessing the presence or absence (and if the former, the kind) of case marking on the objects. As discussed above, formal case syncretism was already greatly advanced by early Middle English, with the (pro-)noun paradigm preserving only very few and rather unreliable or ambiguous traces of the original inflectional suffixes (cf. e.g. (*81*a-c).

(81) a. and *bitahte* hine$_{\text{ACC-TH}}$ **þan hors-horde**$_{\text{DAT-REC}}$
'and gave him to the horse-herdsman'
(CMLAMB1,85.204; M1)

b. hiss Faderr *haffde* himm$_{\text{DAT-TH}}$ *sennd* | | & *gifenn* himm$_{\text{DAT-TH}}$ **to manne**$_{\text{DAT?-REC}}$
'his father had sent and given him to mankind'
(CMORM,II,256.2557; M1)

c. ealle **hine**$_{\text{ACC-REC}}$ *iæfen* micele gife & mære$_{\text{DAT/ACC?-TH}}$
'all [of them] gave him many (and) splendid gifts'
(CMPETERB,47.166; M1)

A contrast is, for example, retained in (81a). In a majority of texts from the same period, however, the forms appear to have been merged already (cf. (*81*b, where TH is expressed by the originally dative pronoun). With a large amount of nouns, case markers were also already ambiguous in Old English; for instance, a suffixed <-e> could express dative and accusative especially in in the case of feminines (Baker 2003-2012). In examples like (81c) it is therefore difficult if not impossible to decide whether

[103]The alternation was not broken down to the level of sub-periods, since this would have resulted in a significantly smaller sample of verbs, making it difficult to draw any conclusions. A different approach to avoid a bias towards the DOC would of course have been to search for verbs that only occur in a POC but not in the DOC. This strategy, which had to be discarded due to feasibility issues, would also have allowed us to test effects of productivity biases as outlined in Perek (2015).

the final *-e* represents a continuation of the OE dative, the OE accusative, or rather illustrates the new ME generic (cross-declension and -gender) dative marker. Moreover, it has to be remembered that there were different case frames available for ditransitive verbs. Accusative marking on the REC-argument (as e.g. in (*81*c) does not necessarily represent a 'violation' of correct case assignment or indicate confusion on the part of the speakers, but might just be a continuation of a different frame than the predominant [DAT_{REC}-ACC_{TH}].

Since the focus of this study is on larger developments rather than small-scale variation, any discussion of the loss of inflections is thus unfortunately restricted to a rather hypothetical and abstract level. What I did in the end was to mark the data in a twofold way: on the one hand, the objects were analysed from an Old English viewpoint, i.e. it was determined which cases the marking on the respective nouns would have represented taking into account their inflectional classes. This analysis was done on the basis of the Old English nominal and pronominal paradigms as given by Baker (2003-2012), as well as the digital edition of the *Bosworth-Toller Anglo-Saxon Dictionary* (Bosworth 2010).[104] For example, the theme in (82a) is classified by Baker (2003-2012, s.v. *help*) as a strong feminine; in this class, both the dative and accusative, as well as the genitive, were marked by an *-e*-suffix, the noun was thus classified as 'ambiguous'. Concerning the REC-argument *god* 'god', both sources agree that it varied between a strong masculine and strong neuter inflection; the suffix-less form in the example in any case would have represented accusative rather than the dative (or any other except nominative), since the latter would have shown *-e* in these classes (Baker 2003-2012; Bosworth-Toller, s.v. *God*). In contrast, the pronoun in (82b) would have unambiguously signalled dative (singular or plural) in Old English, while the theme does not seem to be clearly associated with one single class (Bosworth-Toller, s.v. *drinc*, *dryncˀ*). Although the form probably constituted accusative rather than anything else, it thus received the tag '?', indicating that there was some uncertainty concerning its classification.

(82) a. & innwarrdlike *badd* 3ho **Godd** Hiss hellpe
'you intensely bade God (for) his help'
(CMORM,I,81.712; M1)

b. to his þurst *3ef* **him** drunh
'give him (something to) drink for his thurst'
(CMANCRIW-2,II.297.864; M1)

On the other hand, the objects were approached from a late Middle English perspective on the basis of the nominal and pronominal paradigms given in Smith and Horobin (2002: 104, 109-110). I checked whether they would have been ambiguous between dative or accusative (or even genitive) reading.[105]

[104]The analysis was furthermore supplemented by information on word forms gained from the LAEME corpus (*A Linguistic Atlas of Early Middle English 1150 to 1325*; Laing 2013).

[105]Ambiguity with the genitive was, however, probably very rare at this point (i.e. assuming a late Middle English to PDE perspective), since the genitive *-s*-ending was already highly widespread or indeed almost categorical then (Baker 2003-2012).

Ambiguity would have been especially high if case marking was absent, as datives were not systematically but only occasionally marked by a final *-e* in the singular, and not differentiated at all in the plural. Similarly, personal pronouns were only marginally distinguished in the singular; specifically, only if the old masculine accusative form *hine* was present. The objects *Godd*, *him* and *drunh* in the above examples (82a-b) were accordingly tagged as 'ambiguous', [106] while the form *hellpe*, although ambiguous between dative and accusative in Old English, was classified as 'non-ambiguous, dative'. The latter procedure is of course relatively risky, since *-e*-writings are not entirely reliable. With schwa-loss being quite advanced especially in the later periods, the suffix might have represented a spelling convention rather than the actual pronunciation. As it was found that no results clearly depended on this aspect, however, the convention was maintained in the end. The set of tags used for the hypothetical 'Old English' and 'Middle English' analysis is presented in Table 4 and Table 5, respectively.

Table 4 Set of tags for REC- and TH-arguments (for OE perspective)

Old English (hypothetical)	
<d>	unambiguously dative
<a>	unambiguously accusative
<g>	unambiguously genitive
<d/a>	ambiguous between dative and accusative
<d/g>	ambiguous between dative and genitive
<a/g>	ambiguous between accusative and genitive
<d/a/g>	ambiguous between various cases
<?>	unclear (suffix not consistent with inflectional class/ unknown suffix)
<F>	French origin
<RPd>	relative pronoun, dative
<RPa>	relative pronoun, accusative

Table 5 Set of tags for REC- and TH-arguments (for ME perspective)

Middle English (hypothetical)	
<amb>	ambiguous (Ø-suffix on R/TH; originally dative forms of pronouns)
<n-amb>	non-ambiguous

[106] ME *hine*, in contrast, would have been classified as 'non-ambiguous, accusative', since as mentioned above, the accusative form was never or only very rarely used in 'dative' contexts.

	(*-e*-suffix on R, *-s*-suffix on R/TH, originally accusative form of pronouns)
<na-d>	dative *-e*-suffix for TH-argument

Based on these two different tags for Old and late Middle English, a joint value of ambiguity ranging from 0 (low probability of ambiguity) to 3 (high probability of ambiguity) was finally calculated for all REC- and TH-arguments in the dataset (cf. Table 6).

Table 6 Chart for assigning probability scores of ambiguity

Old English	**Middle English**	**'Case-syncretism'-score**
<d>, <a>, <g>, <RPd>, <RPa>	<n-amb>	0
<d/a>, <d/g>, <a/g>, <d/a/g>, <?>, <F>	<n-amb>	1
<d>, <a>, <g>, <RPd>, <RPa>	<amb>, <na-d>	2
<d/a>, <d/g>, <a/g>, <d/a/g>, <?>, <F>	<amb>	3

As mentioned before, however, the results and figures for case marking are highly tentative and constitute a very coarse approximation to a most likely heterogeneous situation (regarding e.g. different stages of time, regional variation, variation between different texts, cf. Allen 1995).

Fortunately, other features of interest could be addressed and operationalised more easily. Concerning syntactic features, the tokens were analysed in two respects. First, the type of construction (DOC or POC) was identified, and in the case of the latter, the type of preposition involved. For example, (83) was classified as an instance of a *til*-POC.

(83) Yef þabbesse offirs ani þing **til ani of hir sisturs**, and sho refuse it
'if the abbess offers anything to any of her sisters, and she refuses it'
(CMBENRUL,30.1009; M3)

Second, details on the word-order of the clause constituents were provided. The classification scheme used in this regard was rather straight-forward, and did not present any major challenges; an example is presented in (84). As can be seen, the objects were not analysed in regard to their semantic and discourse-pragmatic features (e.g. pronominality or givenness), since this is outside the scope of the study.[107]

(84) Drihhtin **me**$_{REC}$ 3ifeþ witt & mihht$_{TH}$
'the lord gives me skill and power'
(CMORM,I,101.867; M1) S-IO-V-DO[108]

[107]A study on this aspect of the history of ditransitives in English will hopefully be put forward by De Cuypere (2015c) in the near future.
[108]Since the focus here was only on word order, and no passives were included in any case, the labels 'IO' (indirect object), 'PO' (prepositional indirect object) and 'DO' (direct object) were used; the former two always correspond to REC, while the latter is equal to TH.

Intervening material, i.e. clause constituents that did not denote either the verb or the core roles of subject or objects, for example vocatives (85a), adverbs (85b) or whole (subordinate) clauses (85c), was marked as such, but not analysed any further for the moment, since the specific distribution of these elements was not of immediate interest to the present study.

(85) a. *ȝyf* **us**$_{REC}$ [, Lord,] <u>helpe of tribulacioun</u>$_{TH}$
'Give us, lord, help against the enemy'
(CMEARLPS,71.3114; M2) V-IO-x-DO

b. to *pay* **hem**$_{REC}$ [3erly] <u>x þousand pound</u>$_{TH}$
to pay them ten thousand pounds a year'
(CMCAPCHR,96.1960; M4) V-IO-x-DO

c. & *hauest* **ham**$_{REC}$ *bihaten* [3ef ha mahen on me þe herre hont habben.] <u>kinewurðe meden</u>$_{TH}$
'and [you] have promised them, if they were able to get the upper hand on me, royal rewards'
(CMKATHE,31.189; M1) aux-IO-V-x-DO

As seen in (85c), combinations of finite and non-finite verb forms were labelled as 'aux-V', disregarding the question to what extent such finites had acquired auxiliary status at that time. Further issues that had to be dealt with in the classification were: the absence of explicit subjects in a large number of cases (predictable in imperatives and non-finites as in (85a-b] above, but also found in main clauses, cf. [(*85*c, (*86*a]); the frequent detachment of auxiliaries/modal verbs in relation to the main verb (86b); as well as special features pertaining to the objects such as 'extracted/anaphoric' objects (86c), split objects (86d) and stranded prepositions (86e). All these non-canonical orders and patterns were kept in the dataset, but were annotated and marked by specific tags.

(86) a. Oþerhuyl / **him**$_{REC}$ *be-nimþ* <u>þane mete / and þane drinke</u>$_{TH}$
'at other times SUBJ steals of him food and drink'
(CMAYENBI,29.475; M2)

b. **him**$_{REC}$ ich *habbe* meiden <u>mi meiðhad</u>$_{TH}$ *i3ettet*
'I have given him my virginity as a young girl'
(CMMARGA,58.63; M1)

c. <u>alle þe delites þat</u>$_{TH}$ þu *my3t schewen* **hym**$_{REC}$
'all the delights that you might show him'
(CMAELR4,31.150; M4)

d. he *gate* **hem**$_{REC}$ <u>lyf</u>$_{TH}$ **that slowe him**$_{REC}$
'he gave them that slew him life'
(CMAELR4,21.635; M4)

e. And **þei alle þat**$_{REC}$ sche *schewe*d <u>hyr secretys</u>$_{TH}$ **vn-to**
'And all those that she showed her secrets to'
(CMKEMPE,3.29; M4)

The last point in the classification scheme concerns semantic information about the ditransitive verbs/constructions involved. Here, the individual verb tokens were categorised into ten (to twelve)

fairly broad verb classes on the basis of their semantics in the specific contexts.[109] The set of verb classes proposed is heavily influenced by comparable studies by Barðdal (2007), Barðdal, Kristoffersen & Sveen (2011: 65), Colleman (2011: 404), Colleman & De Clerck (2011: 191-197) as well as the models in Goldberg (1995: 38, 75-76) and Pinker (1989: 110-118), among others.[110] r with selected example verbs.

Table 7 illustrates the individual classes together with selected example verbs.

Table 7 Classification scheme for verb classes (with sample verbs)

i)	**ACTUAL TRANSFER**	
	- concrete transfer	*giving/delivering, lending, paying, sending, bringing, obtaining*
	- abstract transfer	*paying so. a visit*, *giving so. a kiss*
ii)	**INTENTION:** verbs of future transfer	*offering, promising, guaranteeing*
iii)	**COMMUNICATION:** verbs of communicated message	*telling, asking, showing*
iv)	**DISPOSSESSION:** hindrance, constraining	*stealing, robbing, taking away*
v)	**REFUSAL:** blocked transfer	*denying, refusing ,withholding*
vi)	**'reverse transfer'**	*asking so. mercy/ one's name*
vii)	**MENTAL/ATTITUDINAL:** mental activity, emotion	*envying*
viii)	**BEN/MAL:** benefactive, malefactive	
	- 'pure' benefaction/malefaction	*opening so. the door*
	- creation	*creating, building*
ix)	**LVb:** light verbs/ complex multi-word predicates[111]	*doing so. harm*
x)	**other** (possession, comparison, signifying)	

There are two basic problems involved in this kind of classification, namely, on the one side, the polysemous nature of many verbs, often allowing them to fluctuate between two or more different verb classes depending on the context. While in some cases, the appropriate interpretation is rather obvious

(*87*a: 'actual transfer' vs.

[109]As discussed in more detail above (Section 2.1.2) as well as below (Section 6.2.1.3), these lexical-semantic verb classes are taken to instantiate and determine the meaning of the various sub-constructions of the ditransitive construction (Barðdal & Gildea 2015: 27; cf. also Croft 2003; Perek 2015).
[110]Cf. also Croft (2003), Gropen et al. (1989), and Levin (1993).
[111]Class (ix) is somewhat special as it does not constitute a separate 'sister'-class to the other verb classes, but is actually more of a meta-class instead, i.e. verbs classified as light verbs or idioms are at the same time always members of another class as well. For example, *do so. harm* could be classified as both 'BEN/MAL (pure)' and 'LVb', whereas *give so. a kiss* represents both 'abstract transfer' and 'LVb'.

*(87*b: 'intended/future transfer'), other instances unfortunately escape a clear-cut classification.

(87) a. *Offre* **me** þine sune Ysaac
'offer [i.e. sacrifice] me your son Isaac'
(CMVICES1,111.1342; M1)
b. Yef þabbesse *offirs* ani þing **til ani of hir sisturs**, and sho refuse it
'if the abbess offers anything to any of her sisters, and she refuses it'
(CMBENRUL,30.1009; M3)

Related to this, but even more demanding is the blurriness of the categories themselves, since there is a large degree of overlap between the classes, and very frequently, a verb could easily be subsumed in two or more different classes at the same time. The class of verbs of 'intented/future transfer', for example, overlaps with the 'benefactive/malefactive' class to a certain extent – while (potential) transfer is definitely implied, the action is at the same time carried out for the benefit of REC (cf. (*88*a-b). This issue is furthered by the prepositional paraphrases available for individual classes typically not being restricted to one single preposition (cf. *to* vs. *for*, (*88*c-d).[112]

(88) a. þe wið þe wurð of heouene *buð* **hire** helle
'who with the price of heaven buys herself hell'
(CMANCRIW-1,II.120.1508; M1)
b. *breideð* **þe** crune of blisse
'[he] weaves you a crown of bliss'
(CMANCRIW-1,II.174.2423; M1)
c. Salamon *bildide* a noble hous **TO himself**
'Salomon built a noble house for himself'
(CMPURVEY,I,12.477; M3)
d. God *haþ wrou3t* **FOR him** meny a faire miracle
'God has often worked great miracles for him'
(CMBRUT3,101.3058; M3)

Cases where a decision was difficult to make were either resolved in favour of one or the other verb class (often following the example of previous studies as cited above), or, if in doubt, an ambiguous instance was counted for both verb classes (as 0.5 and 0.5 tokens, respectively). While far from ideal, this method was chosen due to the overall number of tokens not allowing me to discard ambiguous instances altogether. The rather low frequency of certain verb classes (such as 'refusal') in the corpus generally represents a clear challenge, as it makes it difficult to generalise and restricts any clear conclusions to the more predominant verb classes such as 'actual transfer'. Despite these drawbacks, interesting results could be gained from the data.

[112]As mentioned elsewhere (Section 2.1), in PDE ditransitives are commonly distinguished from benefactives on the basis of their being paraphrased by a *to*- vs. a *for*-pattern, respectively; such a clear-cut distinction is, as is shown above, not there in Middle English.

A more overarching methodological problem of this kind of manual semantic annotation is, as Perek (2016: 14) points out, that it is based on "the semantic intuitions of a single individual, which renders it potentially subjective". Some of this conundrum could solved by involving more than one annotator, or even a group of non-academic similarity raters as done in e.g. Bybee & Eddington's (2006) semantic norming study. However, such methods are often difficult to employ for practical reasons, as was the case in the present study. A very interesting and also more feasible solution to remedy this situation is proposed in Perek (2016), who uses distributional semantics and vector-space models to come up with a method to measure the semantic similarity between lexical items based on their co-ocurrence/ collocation patterns in corpora (2016: 1). This innovative technique will certainly be drawn on to refine and improve the classification scheme used for this thesis in the future; I nevertheless hope that the outcomes of the present study will not diverge too markedly from such a distributional semantics analysis.

To sum up, the instances of DOC and POCs extracted from the corpus were analysed in regard to ambiguity of case marking (only DOC), type of preposition (only POC), order of constituents (relative placement of subject, indirect object, direct object, and verb), and semantics, i.e. verb class involved. Furthermore, extralinguistic variables such as period, dialect and genre were indicated for each token. The dataset thus compiled was finally statistically analysed in various ways; some basic information on this is given in the following section.

4.1.2.3. Analysis

All statistical analysis of the data was carried out by means of *R*, "a free software environment for statistical computing and graphics" (R Development Core Team 2014). Most statistical testing concerned (relative) frequency distributions of linguistic elements such as constructions, and involved pairwise comparisons of proportions. When dealing with the diachronic development of relative frequencies of a variable, I plainly compared two periods with each other at a time (e.g. typically M1-M2, M2-M3, M3-M4, as well as M1-M4 as an indicator of change over the whole period). For these comparisons, 2-by-2 chi-square tests of independence were calculated. The values for the four periods were not compared against each other all at once; a correction of the significance level is therefore not strictly necessary. Nevertheless, a Bonferroni procedure (or Bonferroni correction) was carried out in order to dispel any concerns relating to the problem of multiple comparisons beforehand. This means that the significance level, in our case 0.05, is divided by the number of tests that are performed on the data (e.g. 4 in the case of the period-comparisons as just mentioned); the result is then the 'new' threshold for significance for the p-values of the respective tests. In the given example, all p-values below 0.05/4 = 0.0125 would count as statistically significant after applying the Bonferroni correction (cf. Aaron, Aron & Coups 2009: 336).

Another issue that has to be mentioned is that this method of testing of course does not indicate directionality of change (but only whether the change is significant). The very low number of data points (=4) obtained in the study unfortunately impeded the use of other measures popular in historical linguistics such as Kendall's *tau*, which allows to evaluate distributional data by testing the strength of a correlation between two variables, e.g. time and relative frequencies (cf. e.g. Hilpert & Gries 2009: 390; Gries 2010: 15-16). However, in most cases presented here, the direction of change can easily be established by looking at the visual representations and by checking the figures. While certainly not ideal, this procedure is thus thought to be at least acceptable given the circumstances.
For comparisons of two (or more) values within one sub-period, for example to assess whether the proportional frequencies of DOC and POC in a given period differ significantly from each other, i.e. are not equally distributed, chi-square goodness-of-fit tests were performed. In the latter case, Cramer's V was calculated as a measure of effect size; in the case of 2x2 contingency tables (tests of independence), Cohen's φ-coefficient was determined for each test, assuming the conventional classification 0.1=small effect size, 0.3=medium effect size, and 0.5=large effect size.

In addition to these methods, I carried out distinctive collexeme analyses for various aspects, a procedure which is "specifically geared to investigating pairs of semantically similar grammatical constructions and the lexemes that occur in them" (Gries & Stefanowitsch 2004: 97). The tool detects distributional differences between competing constructions, and allows the user to test whether certain lexemes show preferences for one option or the other, indicating at the same time the strength of such preferences (Gries & Stefanowitsch 2004: 97). It does so by determining, on a lexeme-to-lexeme basis, four values: the frequency of the form in question in the respective constructions (A and B), as well as the frequency of other verbs in the constructions (i.e. frequency of construction A/B - the frequency of the lexeme in A/B). A Fisher exact test is then performed on the 2x2-table created with these values, and the sizes of resulting p-values indicate how distinctive a given lexeme is for any of the two constructions – which of the two options this is is determined by comparing the observed frequencies to the expected frequencies assuming a random distribution. For further information see Gries & Stefanowitsch (2004).

A third method used in the analysis, named 'hierarchical agglomerative cluster analysis' (HCA) is of a more exploratory nature than the typical hypothesis-testing processes, and is commonly "used to divide a set of elements into clusters, or groups, such that the members of one group are very similar to each other and at the same time very dissimilar to members of other groups" (Gries 2009: 337, Chapter 6). The steps involved in an HCA essentially are the following:

- Computing a similarity/dissimilarity matrix on the basis of a user defined similarity/ dissimilarity metric
- Computing a cluster structure on the basis of a user-defined amalgamation rule
- Representing the cluster structure in a dendrogram and interpreting it

(Gries 2009: 339).

The amalgamation rule used in the present study was method="ward" (for more detailed information on different methods involved in this procedure, see Gries 2009: Ch.6). This method was found to be especially useful in addressing the question whether the bias towards certain dialects and genres in the corpus design was skewing the results, as it could be tested whether texts from the same region (or genre) in fact cluster together regarding certain variables.

4.2. Results

In the following sections, the results of the corpus study will be presented, focussing first on the loss of case marking and the emergence of the prepositional ditransitive construction, followed by some results on the semantic development of the DOC. Finally, findings on the fixation of word order on the clause level and regarding the order of the objects will be shown.

4.2.1. Results A: loss of case marking

As pointed out above, it is commonly assumed that case syncretism was already relatively advanced at the transition from Old to Middle English, although the question when case distinctions seized to be present in the minds of speakers is notoriously difficult to answer. The results on case marking ambiguity with REC arguments of DOCs are as follows: Figure 7 shows that the proportion of REC with overt marking that was very probably associated with one particular case, i.e. REC with a very low estimated ambiguity, was already highly infrequent at the beginning of the period. While score 0 recipients (lowest estimated ambiguity) account for approximately 1.3 per cent of tokens in M1, score 1 recipients (medium-low) take up a marginally higher fraction (2.8 per cent). However, there is no significant change in the course of the period in both cases.[113] Greater developments can be seen in RECs with higher estimated ambiguity (scores 2-3). Interestingly enough, highly ambiguous recipients are slightly more frequent in M1 than score 2 recipients (49.3 per cent vs. 46.6 per cent), but decrease over time in favour of the somewhat less ambiguous variants.[114] The difference between the two variants, which are the only remaining categories from M2 onwards, is significant in the later stages of the language (ca. 40 per cent vs. 60 per cent in both M3 and M4; $p<0.001$, small-medium effect size: $V\approx0.2$).

[113]In fact, the originally significant decrease of score 1 recipients between M1 and M2 ($p=0.0169$) disappears once the Bonferroni correction is applied – the effect of the change is in any case very small ($\varphi<0.1$), though, and the significance or non-significance of the change does not change the fact that the fraction taken up by this variant is exceedingly small from the start. In terms of absolute frequencies, Score 0 and 1 recipients move from 12 and 25 tokens, respectively, in M1 to 0 in all subsequent periods.

[114]M2-M3; M1-M4: $p<0.001$, $\varphi \approx 0.1$.

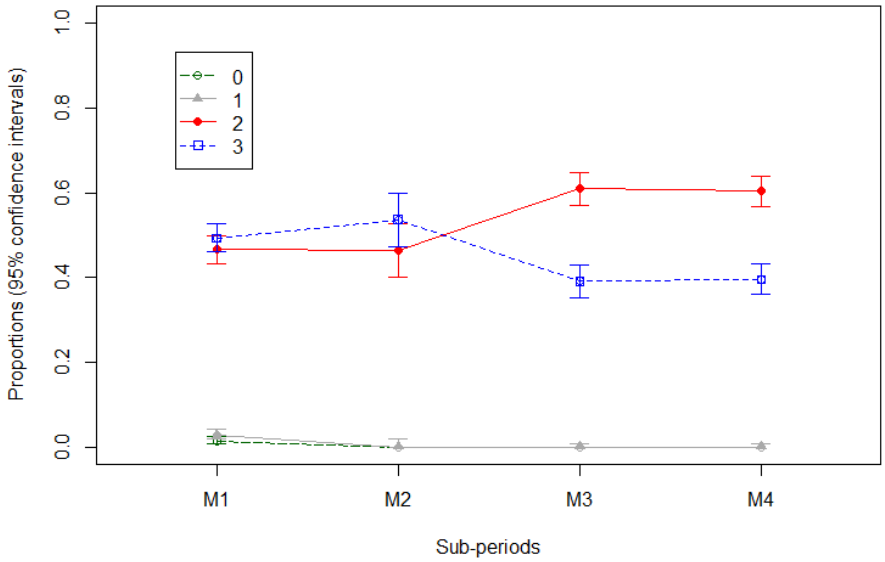

Figure 7 Probability of ambiguity of case marking in indirect objects/REC (0=low probability to 3=high probability)

Although these results might seem unexpected at first glance, there is a relatively simple explanation for the behaviour of score 2 and 3 recipients, which relates to the fact that a large majority of recipients (up to 99 per cent of the total of RECs in the DOC) in the database are pronominal. As is well known, and as was discussed above, case syncretism in pronouns typically worked in favour of the originally dative form (e.g. OE dat. *him*/ acc. *hine* > PDE *him*; OE dat. *hire*/ acc. *hīe* > PDE *her*). Following the classification scheme used in the present approach, REC in example (89) would have been categorised as OE <d> 'unambigous, dative' and ME <amb> 'ambiguous', resulting in an ambiguity score of 2.

(89) The fyrste *gaffe* **hym**$_{REC}$ Scyence$_{TH}$
'The first gave him science'
(CMGREGOR,173.1061; M4)

The prevalence of score 2 recipients in later periods is therefore most probably caused by the general predominance of pronominal recipients, and shows that the decision to attribute panchronic ambiguity scores to each token is problematic, or at least not very helpful in this regard.

As shown in Figure 8, the development of the THEME argument conforms more clearly to what is expected – while (more likely) non-ambiguous variants, i.e. score 0 themes still take up over 20 per cent in M1, they see a significant sudden drop right afterwards ($p<0.001$; small-medium effect size: $\varphi\approx0.2$). Although the higher frequency of non-ambiguous themes could be taken as mirroring the pronoun effect found in recipients, this is only indirectly the case, since the percentage of themes represented by pronouns is rather small (8 per cent). The issue nevertheless does concern pronouns, in that the figures are probably influenced by the relatively large fraction of 'extracted/anaphoric' themes included in the dataset - almost 20 per cent of themes in M1. The large majority of

demonstrative pronouns involved in these anaphoric theme-constructions in the earliest period were classified as non-ambiguous, and thus received a 0 score.

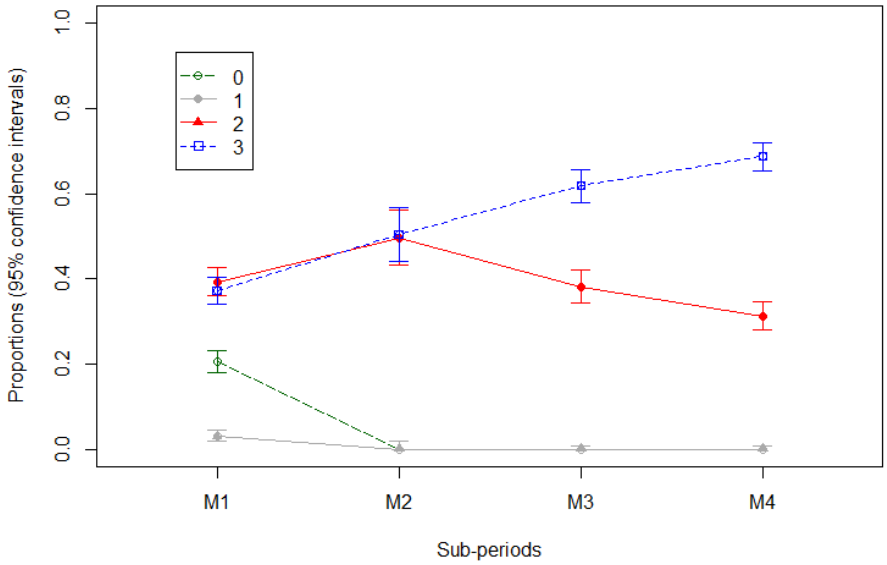

Figure 8 Probability of ambiguity of case marking in direct objects/TH (0=low probability to 3=high probability)

Both score 2 and 3 themes, meaning themes with higher estimated ambiguity, account for approximately 40 per cent in M1. However, in contrast to score 3 themes, which increase significantly over the course of the period ($p<0.001$; medium effect size: $\varphi\approx0.3$), score 2 themes drop in relative frequency ($p<0.001$; small effect size: $\varphi\approx0.1$). The most likely explanation for the difference in behaviour of recipients and themes in this regard is the increasing influx of French vocabulary over the course of the period – although French items were classified in the same way for both REC and TH, the issue affected themes much more severely than predominantly pronominal (and therefore native or Scandinavian) recipients.

As should be clear, the pressure to find various different explanations for the development of the variables in question suggests that the approach presented here is by no means optimal. Furthermore, this method does not allow us to investigate the possibility of a mutual (feed-forward, feed-backward) impact of the degree of salience of case marking on REC on the degree of salience of case marking on TH, i.e. whether the forms' development was interrelated to some extent. This means that in fact, the present approach does not really take into account the whole system of case marking, but restricts itself to a rather arbitrary selection. The representativeness of the results can thus be questioned. What is nevertheless clear from the results is that ambiguity in case marking of the arguments of ditransitive verbs increased over time. That is, the results confirm that case marking in the late Middle English double object construction was either absent entirely or highly ambiguous.

4.2.2. Results B: rise of prepositional patterns/ emergence of the dative alternation

4.2.2.1. Basic distribution of DOC vs. (to-)POC

When we compare the fractions of the total of ditransitive tokens taken up by DOC and POC in the four sub-periods of the PPCME2 (Figure 9), it is immediately evident that the DOC significantly decreased in the proportional frequency at the beginning of the period (M1-M2). This points to early Middle English as the main locus of change.[115] Although a decrease is also confirmed for the overall period (M1-M4), the development levels off after this initial point of change, though (in spite of the still significant difference between M2 and M3, the effect size is considerably smaller at approximately 0.1). Even more interestingly, the trend appears to reverse towards the end of the period.[116] While the difference in fractions taken up by DOCs and POCs, respectively, is significant in the earlier periods, this is not the case in M4, where the two patterns rather come to 'share the workload' on equal terms, with both constructions accounting for about 50 per cent of the tokens (DOC: 47 per cent vs. POC: 53 per cent).[117] Importantly, as repeatedly pointed out above, the (relative) frequency of the DOC is here compared against POCs involving a range of different prepositions, including e.g. constructions with *from* in the case of many dispossession verbs.

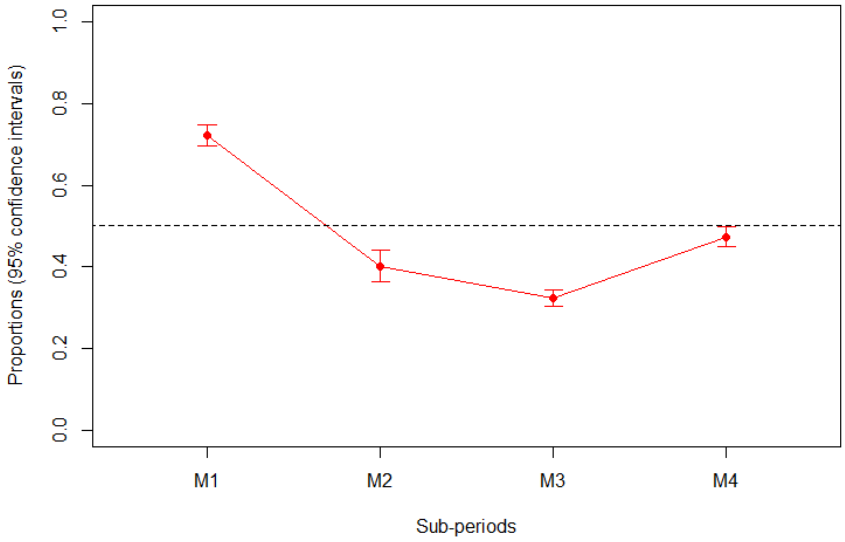

Figure 9 Proportional distribution of verbs in DOC (vs. POC)

Shifting the focus to one particular type of POC, namely the *to*-POC (and, correspondingly, only those DOCs that alternate with a *to*-POC), the development of the individual constructions follows a similar path, i.e. the curves that are shown in Figure 10 roughly correspond to those in Figure 9 at first glance. Nevertheless, there are also striking differences: as can be seen, the divergence in the distribution of

[115] M1-M2: $p < 0.001$, $\varphi \approx 0.3$.
[116] M1-M4: $p < 0.001$, $\varphi \approx 0.3$; M2-M3: $p < 0.001$, $\varphi \approx 0.1$; M3-M4: $p < 0.001$, $\varphi \approx 0.2$.
[117] M1: $p < 0.001$, $V \approx 0.2$; M2: $p < 0.001$, $V \approx 0.1$; M3: $p < 0.001$, $V \approx 0.2$; M4**:** $p > 0.05$.

the competing patterns is much larger in early Middle English (M1), with over 80 per cent of tokens found in the DOC, and the drop in frequency of the DOC between M1-M2 is sharper than in the former case. [118]

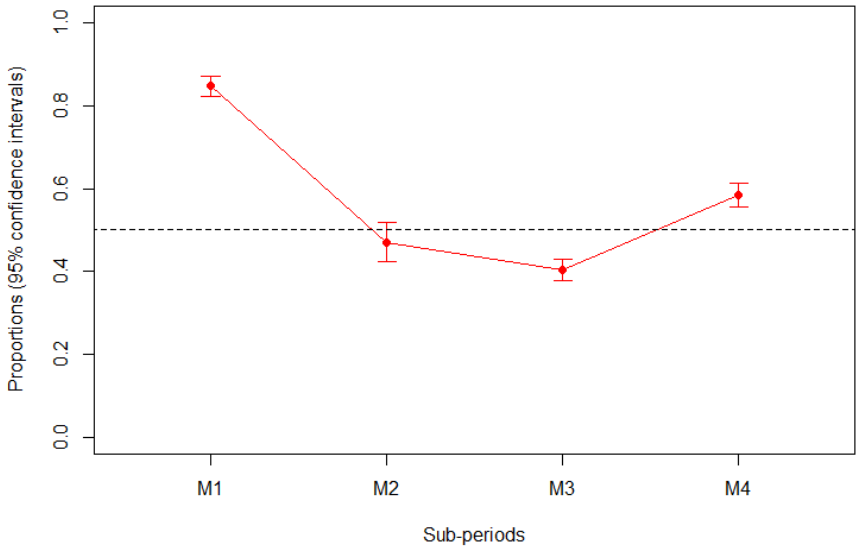

Figure 10 Proportional distribution of verbs in DOC (vs. *to*-POC)

Furthermore, the trend reversal towards the end of the period found above is even more pronounced if only *to*-POCs are taken into account – while in M3, the DOC is still significantly less frequent than the DOC, and accounts for about 40 per cent of the tokens, this number rises to about 60 per cent in the last period (M4). This clear turnaround in the distribution of the constructions is surprising, even though we know from PDE evidence that rather than completely replacing the DOC, the *to*-prepositional paraphrase has entered into a close relationship with its alternative in which it constitutes the dominant partner. Interestingly enough, this development does not appear to be a later, more recent change in the history of the constructions, but happened rather quickly, within the comparatively short time span of about 400 years covered by the corpus. A comparison of the two sets of constructions, meaning the DOC vs. POC, and the DOC(alt) and the *to*-POC (with absolute and relative numbers of tokens), is given in Table 8. DOC(alt) here refers to the restricted set of DOC tokens with verbs that alternate with the *to*-POC.

Table 8 Raw/proportional figures for the distribution of DOC/POC and DOC(alt)/*to*-POC

	DOC(all)	**POC(all)**	**TOTAL**	**% DOC**	**DOC(alt)**	***to*-POC**	**TOTAL**	**%DOC(alt)**
M1	905	346	1251	**72.3**	701	125	826	**84.9**

[118] M1: $p < 0.001$, $V > 0.5$; M2: $p > 0.05$; M3: $p < 0.001$, $V \approx 0.2$; M4: $p < 0.001$, $V \approx 0.3$.
M1-M2: $p < 0.001$, $\varphi \approx 0.4$; M2-M3: $p < 0.05$, $\varphi < 0.1$; M3-M4: $p < 0.001$, $\varphi \approx 0.2$; M1-M4: $p < 0.001$, $\varphi \approx 0.2$.

M2	246	366	612	**40.2**	214	241	455	**47**
M3	645	1352	1997	**32.3**	577	849	1426	**40.5**
M4	739	822	1561	**47.3**	688	487	1175	**58.6**

As was mentioned above (3.1.2.2), the u-turn development seen in the development of the *to*-POC can also be seen in McFadden's (2002) analysis of Middle English ditransitives (although McFadden does not in fact comment on this particular aspect). The precise figures of his study deviate from those found in the present investigation in that the changes are slightly less sharp in our case (e.g. the *to*-POC does move from 6 per cent in M1 to a peak of 70 per cent in the present study but from about 12 to 50 per cent, i.e. the construction does not increase tenfold, but only quadruples). Nevertheless, the fact that both McFadden's work and my own arrive at the same overall conclusion regarding the behaviour of *to*-POCs in relation to DOCs is encouraging.

That Middle English (to early Modern English) should be the period of most pronounced change is also confirmed by findings on the subsequent development of the constructions as shown in Figure 11 (data for Early/Late Modern English, i.e. 1650-1989, taken from Wolk et al. 2013's study of ARCHER).

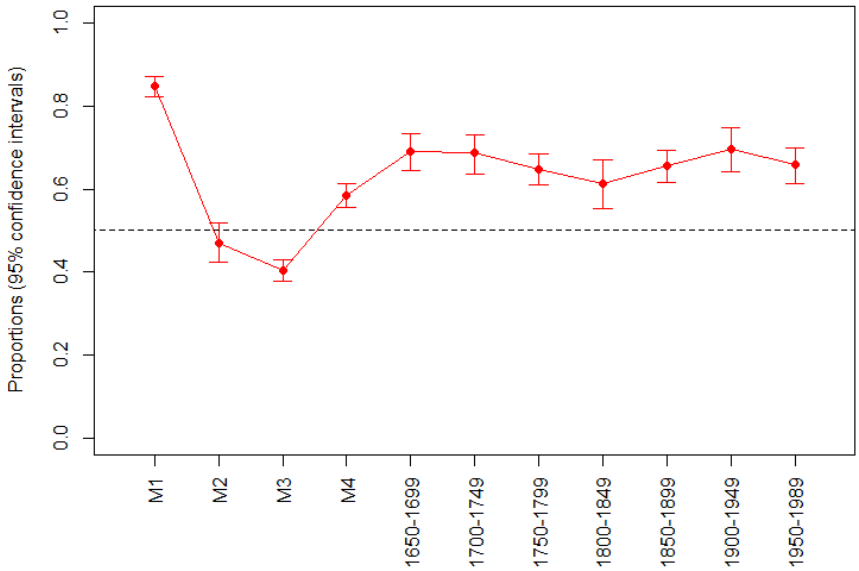

Figure 11 Proportional distribution of verbs in DOC (vs. to-POC) from 1150 to 1989 (e/lModE data: ARCHER; Wolk et al. 2013)

From the early 18th century onwards, there is little or in fact no change in the relative frequencies of the two constructions;[119] the DOC takes up about 65-70 per cent of the tokens, whereas the *to*-POC

[119]Changes between the individual periods (from [1650-1699] onwards) are non-significant; the small significant overall change ($\varphi < 0.1$) between M4 and [1950-1989] disappears with the Bonferroni correction.

constitutes around 30-35 per cent in all periods.[120] It should be mentioned again, however, that Wolk et al.'s findings and do not fit with Gerwin's (2014: 143-145) analysis of the same corpus of Late Modern English (ARCHER). In her analysis, the *to*-POC makes up only about 20 per cent of ditransitive tokens in the 17th century and slightly rises in frequency towards the 1900s, only to again drop in usage in the course of the 20th century. This development is explained as a typical s-curve pattern in Gerwin (2014: 143). That is to say, the construction is assumed to exhibit "a slow increase in late Old English and early Middle English followed by a rapid rise of the construction an an extension to other syntactic contexts in the 14th and 15th century [as well as a] tailing-off phase of the increase [in later centuries]" (Gerwin 2014: 143). However, the present data do not entirely fit this narrative (which is in any case based on relatively outdated sources), as we in fact see a sharp increase of *to*-POCs in earlier Middle English rather than later in the period, at which point the use of the construction actually falls again. If Gerwin's analysis of the later centuries was followed, the construction would have shown an up-and-down behaviour throughout the periods, first increasing and then decreasing within Middle English, rising again in Late Modern English, and falling once more in the 20th century. While a development like this is not entirely inconceivable as such, Gerwin's explanation certainly does not hold if the results of the present study are taken into account. Furthermore, as already mentioned above, the proposal that is put forward in this thesis is more compatible with Wolk et al.'s (2013) findings. In order to find a definitive answer on the subsequent development of the alternation, a more detailed investigation of the two studies and their methodologies, and possibly further research on the constructions in the relevant periods would of course nevertheless be needed.

Apart from developments in the distribution of (*to*-)POCs in relation to the DOC, it is also worth taking a separate look at the prepositional competitors, or more specifically, at the role individual POC-types play within this broader category. The main focus in this regard is quite obviously the distribution of *to*-POCs as compared to constructions involving different prepositions. As the data indicate, POCs with this particular preposition take up a large fraction of tokens in all sub-periods, and even account for around 60 per cent in M2 and M3 (see Figure 12, which presents the proportional distribution of *to*-patterns within the total of POCs).

[120][1650-1699], [1700-1749], [1900-1949]: $p < 0.001$, $V \approx 0.4$; [1750-1799], [1850-1899], [1950-1989]: $p < 0.001$, $V \approx 0.3$; [1800.1849]: $p < 0.001$, $V \approx 0.2$.

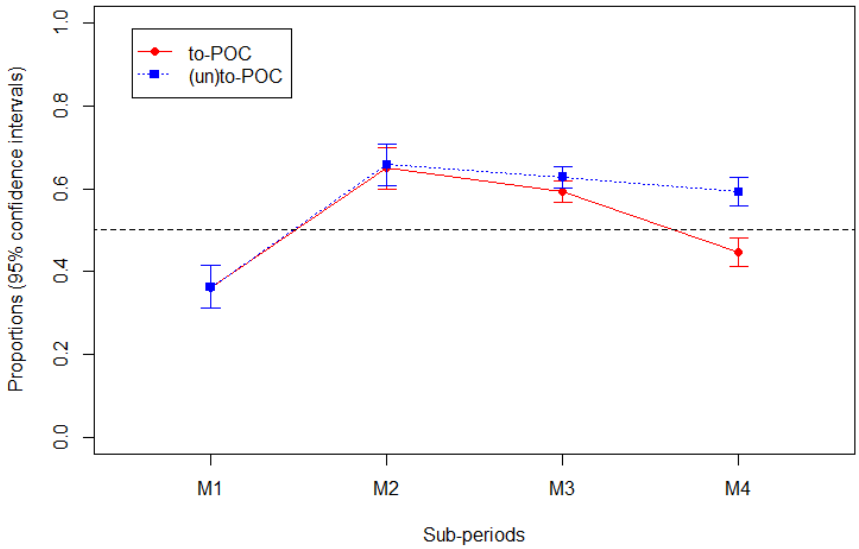

Figure 12 Proportional distribution of (un)to in total of POCs

This suggests that *to* was prevalent already at the beginning of the period, and continued to be so at all further stages. As regards the development of the proportions over the course of the period, there is a rapid initial growth in *to*-patterns as compared to other POCs, followed, however, by a significant drop in the later sub-periods (M3-M4). Nevertheless, the overall change during the period is significant, and *to*-POCs still make up a very large part of POCs in M4 (approx. 45 per cent).[121] Despite the fact that we can observe some change concerning the role of *to*, the intuitive expectation would be that this change was much more pronounced (note that the effect size concerning the change from M1-M4 is small at 0.1). There are three possible explanations for why this is not the case: first, it is clear that certain verb classes in the DOC were never paraphrased by *to* (e.g. dispossession verbs); these increasingly switched to prepositional patterns when they were marginalised from the DOC, thereby increasing the token frequency of other POCs. Second, variation concerning the specific prepositions a verb occured with was relatively high in the earlier sub-periods. That is, even those verbs that could be paraphrased with a *to*-POC, could also be used with other prepositions such as *towards* or *till*, and others (and vice versa). This changed towards the end of the period, indicating that a regularisation of the system took place, and specific verbs became increasingly restricted to particular prepositions (cf. Strang 1970: 274-275; Traugott 1972: 127; Lundskær-Nielsen 1993: 113-114). Last, it is worth noting that from M3 onwards, the preposition-combinations *un-to* and *on-to* came into existence (cf. also Mustanoja 1960: 415). These can be assumed to correspond closely to *to* since they appear in the same texts as well as contexts, and with the same verbs as the simple preposition (90a-b).

[121] M1-M2: $p < 0.001$, $\varphi \approx 0.3$; M2-M3: $p > 0.05$; M3-M4: $p < 0.001$, $\varphi \approx 0.1$; M1-M4: $p < 0.01$, $\varphi \approx 0.1$.

(90) a. he *3af* þe londe to þe Saxones
'he gave the land to the Saxons'
(CMBRUT3,95.2879; M3)

b. when he hade conquerede Engeland , & it *3af* ***vnto*** **Saxonus**
'when he had conquered England, and gave it to the Saxons'
(CMBRUT3,111.3350; M3)

Taking these complex prepositions into account, there is a more pronounced significant increase of *(un)to* during the course of the period.[122] [123]

The five most frequent POC-types after those involving *to* (alone and in combination with *unto*/*onto*) are, in descending order, *of*-POCs (around 12.5 per cent of the total), *on*-POCs (5.5 per cent), *for*-POCs (3.6 per cent), *from*-POCs (approx. 3.4 per cent) as well as *upon*-POCs (3 per cent), the last of which might of course have to be merged with *on* on the same argument as holds for *to* and *unto/onto*. Additional information on the frequency and distribution of individual prepositions will be presented if relevant in later sections.

In sum, the results shown in this chapter corroborate that the prepositional alternatives greatly increased in the course of Middle English. Crucially, however, the POCs did not straightforwardly oust the DOC in general, but instead peaked in the middle of the period and afterwards fell again in relative frequency. At the end of the period, we therefore see a balanced 50/50 distribution of DOC and POCs. Within the group of POCs, the type involving *(un)to* is the most frequent one. This prevalence furthermore increases over time, suggesting that *(un)to*-POCs played a special role in the prepositional paraphrases. Comparing the proportions of *to*-POCs and DOCs, the u-turn development seen with all POCs is even more pronounced. In fact, DOCs again take on a stronger position towards the end of the period. That this distribution more or less corresponds to that in Late Modern English, and also PDE (cf. e.g. Röthlisberger 2015) confirms that the ground for the PDE dative alternation was essentially set in Middle English.

In the following section, findings on the behaviour of individual verbs in regard to their appearance in either the DOC or POCs, as well as preferences of individual semantic verb classes for either the one or the other, will be presented.

4.2.2.2. DOC vs. (to-)POC with individual verbs and verb classes

It is a well-known claim in the literature on PDE ditransitives that there are significant differences between verbs regarding their frequency of occurrence in either one or the other variant of the dative alternation. Gries & Stefanowitsch (2004: 106-107), for example, by carrying out a distinctive

[122] M1-M4: $p < 0.001$, $\varphi \approx 0.2$; M1-M2: $p < 0.001$, $\varphi \approx 0.3$; M2-M3/M3-M4: $p > 0.05$.
[123] As Rostila (2007: 216, fn107) claims, *onto* and *unto* constitute independent lexemes in PDE, suggesting that the meanings of the prepositions diverged from *to* (and each other) at some point after Middle English.

collexeme analysis, find that verbs such as *give*, *tell*, *teach*, *show* or *offer* most frequently select for the DOC, while among the verbs most clearly associated with the *to*-POC are *bring*, *take*, *pass*, as well as *sell*, *supply* and *pay*. Inspired by Gries & Stefanowitsch (2004), I also applied distinctive collexeme analysis to the Middle English data in this project. This was done in order to be able to detect whether any tendencies and verb-specific preferences could be discerned in the individual sub-periods, and whether these tendencies were subject to change within the entire period. The outcomes of the analysis moreover served as a first indicator of potential verb-class-specific trends or biases, which were analysed in a second step. This assumption is based on the fact that constructional preferences of individual verbs are typically expected to match those of verbs with similar meanings, which means they can be grouped together into larger semantic verb classes. Investigating the types of verb classes found in a construction, as well as their token frequency distribution in relation to each other, in turn enables us to determine the meaning of the construction as a whole.

As already pointed out, distinctive collexeme analysis "identifies lexemes that exhibit a strong preference for one member of the pair as opposed to the other, and thus makes it possible to identify subtle distributional differences between the members of such a pair" (Gries & Stefanowitsch 2004: 97). The results of the analysis are presented in Table 9 and Table 10 below. The former shows verb-specific preferences for either DOC or POC in the individual sub-periods, while the latter is restricted to verbs alternating between the DOC and the *to*-POC. The relevant columns in the tables are the one labelled 'verbs' on the very left, the column 'pref.occur', which specifies whether the verb is most distinctly used in the DOC or (*to*-)POC, in the middle, as well as 'coll.strength' at the very right, which specifies how strong the collocation is.[124] What is striking in Table 9 is that there is considerable variation within as well as between the sub-periods and among semantically related verbs. For example, the prototypically ditransitive verb *yeven* 'give' is clearly associated with the DOC in M1 and M4, but does not seem to have any preference in the time span in between (M2-M3). Its close synonyms *graunten* 'grant, give' and *geten* 'get, give' are likewise found most often in the DOC in the later periods, while *yelden* 'yield, give', also very close in meaning, favours the POC (M3-M4). Similarly, there is no clear systematicity in the preferences of verbs of communication such as *tellen* 'tell', *techen* 'teach', *seien* 'say', *speken* 'speak' and *asken* 'ask' – the first two of these most frequently opt for the DOC, whereas the latter three more often occur in the POC in M3 and M4. Interestingly, privative verbs such as *binimen* 'steal, take away' (M2-M3) and *bireven* 'rob, steal, take away' (M3) select for the DOC rather than the POC; in the latest period, however, the verbs are not featured in the list any more, meaning they are unbiased in choice of construction. The most distinct lexemes for the POC are

[124]As already indicated earlier, collocation strength values correspond to p-values in the following way: coll.strength > 3: $p < 0.001$; coll.strength > 2: $p < 0.01$; coll.strength > 1.30103 : $p<0.05$ (Gries 2014). The differences in collocation strength are reflected in the shading of the cells in the tables: the darker the shading, the stronger the collocation.

consistent with those identified as distinctive for the *to*-POC in PDE by Gries & Stefanowitsch (2004) as mentioned above. They include verbs such as *bringen* 'bring', *senden* 'send', *(bi)taken* 'take', *nimen* 'take (away)' and *paien* 'pay'. The results for the alternation between DOC and *to*-POC as shown in Table 10 largely correspond to those just described for the broader DOC - POC alternation. What is interesting to note, however, is that *yeven* 'give' shows even more variation in behaviour in the restricted alternation in that it oscillates between the DOC and the *to*-POC in the earlier periods (M1: DOC, M2: *to*-POC), shows no preference for either construction in M3, and returns to the DOC towards the end of the period (M4). This shifting behaviour of the most typical ditransitive verbs is reminiscent of the reversing trend observed in the relative frequencies of DOC vs. (*to*-)POC above.

Table 9 Distinctive Collexeme Analysis for verb-specific preferences (DOC vs. POC) in M1-M4

	verbs	obs.freq.1	obs.freq.2	exp.freq.1	exp.freq.2	pref.occur	delta.p.constr.to.word	delta.p.word.to.constr	coll.strength
M1	*yeven*	207	14	163.48	57.52	**DOC**	0.3	0.28	17.28
	bihoten	18	1	14.05	4.95	**DOC**	0.03	0.21	1.63
	nimen	4	29	24.41	8.59	**POC**	-0.14	-0.65	13.49
	taken	3	18	15.53	5.47	**POC**	-0.09	-0.61	8
	evenen	1	10	8.14	2.86	**POC**	-0.05	-0.66	4.99
	setten	1	10	8.14	2.86	**POC**	-0.05	-0.66	4.99
	willen	2	4	4.44	1.56	**POC**	-0.02	-0.41	1.37
M2	*binimen*	14	1	7.27	7.73	**DOC**	0.08	0.47	3.6
	bringen	1	7	3.88	4.12	**POC**	-0.03	-0.37	1.39
M3	*tellen*	56	13	28.83	40.17	**DOC**	0.08	0.41	11.1
	techen	40	5	18.8	26.2	**DOC**	0.06	0.49	10.5
	foryeven	30	7	15.46	21.54	**DOC**	0.04	0.4	6.06
	graunten	24	9	13.79	19.21	**DOC**	0.03	0.32	3.57
	bireven	11	2	5.43	7.57	**DOC**	0.02	0.43	2.71
	geten	12	3	6.27	8.73	**DOC**	0.02	0.39	2.54
	binimen	9	2	4.6	6.4	**DOC**	0.01	0.4	2.09
	chesen	7	1	3.34	4.66	**DOC**	0.01	0.46	1.96
	crien	7	1	3.34	4.66	**DOC**	0.01	0.46	1.96
	leren	5	1	2.51	3.49	**DOC**	0.01	0.42	1.31
	taken	11	152	68.1	94.9	**POC**	-0.17	-0.4	25.56
	senden	11	61	30.08	41.92	**POC**	-0.06	-0.28	6.14
	yelden	4	31	14.62	20.38	**POC**	-0.03	-0.31	4.07
	bitaken	4	23	11.28	15.72	**POC**	-0.02	-0.27	2.6
	speken	1	14	6.27	8.73	**POC**	-0.02	-0.35	2.47
	seien	11	35	19.22	26.78	**POC**	-0.02	-0.18	2.09
	leven	1	12	5.43	7.57	**POC**	-0.01	-0.34	2.05

	bringen	7	26	13.79	19.21	**POC**	-0.02	-0.21	1.98
	asken	11	30	17.13	23.87	**POC**	-0.02	-0.15	1.48
M4	*yeven*	197	75	152.77	119.23	**DOC**	0.16	0.21	9.66
	graunten	47	5	29.21	22.79	**DOC**	0.06	0.36	7.35
	tellen	66	13	44.37	34.63	**DOC**	0.08	0.29	7.04
	foryeven	18	1	10.67	8.33	**DOC**	0.03	0.39	3.6
	geten	20	4	13.48	10.52	**DOC**	0.02	0.28	2.34
	lenen	10	1	6.18	4.82	**DOC**	0.01	0.35	1.78
	techen	11	2	7.3	5.7	**DOC**	0.01	0.29	1.5
	taken	12	125	76.95	60.05	**POC**	-0.23	-0.54	34.78
	yelden	3	23	14.6	11.4	**POC**	-0.04	-0.46	5.64
	seien	7	23	16.85	13.15	**POC**	-0.04	-0.34	3.65
	paien	3	12	8.43	6.57	**POC**	-0.02	-0.37	2.33
	deliveren	6	14	11.23	8.77	**POC**	-0.02	-0.27	1.8

Table 10 Distinctive Collexeme Analysis for verb-specific preferences (DOC vs. *to*-POC; only truly alternating verbs) in M1-M4

	verbs	**obs.freq.1**	**obs.freq.2**	**exp.freq.1**	**exp.freq.2**	**pref.occur**	**delta.p.constr.to.word**	**delta.p.word.to.constr**	**coll.strength**
M1	*yeven*	207	10	181.83	35.17	**DOC**	0.32	0.19	9.5
	evenen	1	9	8.38	1.62	***to*-POC**	-0.09	-0.75	6.32
	nimen	4	7	9.22	1.78	***to*-POC**	-0.07	-0.48	3.34
	taken	3	5	6.7	1.3	***to*-POC**	-0.05	-0.47	2.42
	willen	2	3	4.19	0.81	***to*-POC**	-0.03	-0.44	1.49
M2	*techen*	21	4	12.73	12.27	**DOC**	0.1	0.36	3.39
	yeven	58	75	67.73	65.27	***to*-POC**	-0.12	-0.12	1.73
	bringen	1	7	4.07	3.93	***to*-POC**	-0.04	-0.39	1.53
M3	*tellen*	56	12	32	36	**DOC**	0.08	0.38	9.16
	techen	40	5	21.17	23.83	**DOC**	0.07	0.44	8.61
	foryeven	30	7	17.41	19.59	**DOC**	0.04	0.35	4.77

	graunten	24	9	15.53	17.47	**DOC**	0.03	0.26	2.66
	geten	12	2	6.59	7.41	**DOC**	0.02	0.39	2.48
	chesen	7	1	3.76	4.24	**DOC**	0.01	0.41	1.63
	crien	7	1	3.76	4.24	**DOC**	0.01	0.41	1.63
	senden	11	55	31.06	34.94	***to*-POC**	-0.07	-0.32	6.97
	yelden	4	26	14.12	15.88	***to*-POC**	-0.04	-0.35	4.05
	taken	11	37	22.59	25.41	***to*-POC**	-0.04	-0.25	3.41
	bitaken	4	23	12.7	14.3	***to*-POC**	-0.03	-0.33	3.39
	bringen	7	26	15.53	17.47	***to*-POC**	-0.03	-0.27	2.76
	leven	1	12	6.12	6.88	***to*-POC**	-0.02	-0.4	2.51
	seien	11	27	17.88	20.12	***to*-POC**	-0.02	-0.19	1.79
	speken	1	9	4.71	5.29	***to*-POC**	-0.01	-0.37	1.78
M4	*graunten*	47	5	33.1	18.9	**DOC**	0.06	0.28	5.12
	tellen	66	13	50.29	28.71	**DOC**	0.07	0.22	4.34
	yeven	197	73	171.87	98.13	**DOC**	0.12	0.13	4.05
	foryeven	18	1	12.09	6.91	**DOC**	0.03	0.32	2.69
	geten	20	3	14.64	8.36	**DOC**	0.02	0.24	1.91
	lenen	10	1	7	4	**DOC**	0.01	0.28	1.3
	yelden	3	23	16.55	9.45	***to*-POC**	-0.06	-0.54	7.44
	seien	7	19	16.55	9.45	***to*-POC**	-0.04	-0.38	3.91
	writen	2	10	7.64	4.36	***to*-POC**	-0.03	-0.48	2.95
	paien	3	11	8.91	5.09	***to*-POC**	-0.03	-0.43	2.83
	taken	12	20	20.37	11.63	***to*-POC**	-0.04	-0.27	2.7
	deliveren	6	14	12.73	7.27	***to*-POC**	-0.03	-0.34	2.68
	senden	56	52	68.75	39.25	***to*-POC**	-0.06	-0.13	2.3

Although the behaviour of individual verbs is certainly worth looking for, a problematic aspect of this investigation is that many verbs are not or only very rarely attested in both construction types in all sub-periods. What is therefore of interest is the possibility of abstracting over specific items, addressing the question whether particular semantic verb classes are more attracted to DOCs or POCs. A further point of interest is whether there are correlations between certain verb classes and individual POC-types. For instance, the class of transfer verbs is expected to favour *to*-POCS over those involving other prepositions. Vice versa, *to*-POCs predictedly show a predilection for certain constructional meanings corresponding to the basic spatial (goal) meaning of the preposition involved, i.e. transfer-related verb classes.

A first observation that can be made in this regard is that as seen in Figure 13, the general increase in prepositional competitors at the expense of DOCs is mirrored by the data for transfer verbs. The rise of POCs (at the expense of DOCs) is slightly larger in the case of ACTUAL TRANSFER verbs (class i above) than in the case of the three major classes of actual TRANSFER, intended TRANSFER and COMMUNICATION (classes i-iii) taken together. The change from M1-M4 is nevertheless significant in both.[125] As in the overall case of DOC/POC (DOC/*to*-POC) above, the proportional frequency of POC uses of transfer (and transfer-related) verbs shows a levelling off and even a reversal of the trend towards the end of the period.

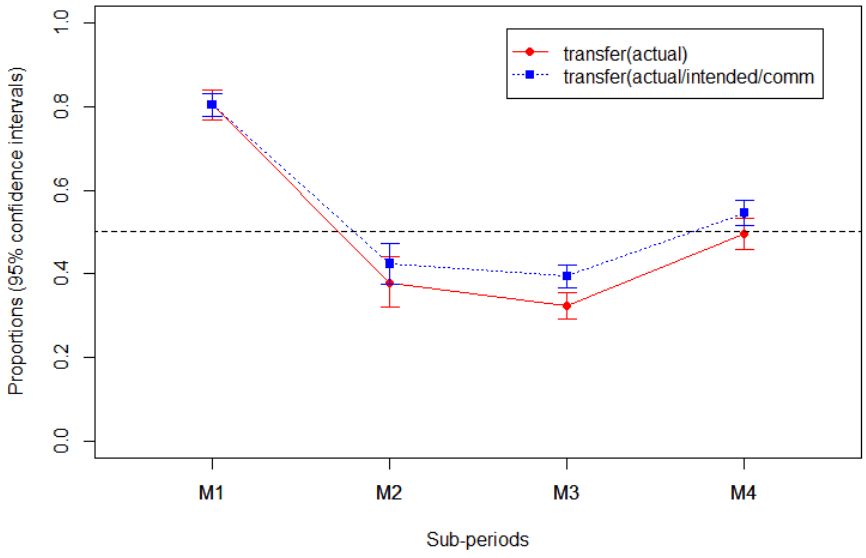

Figure 13 Proportional distribution of TRANSFER verbs in DOC (vs. POC)

[125] *TRANSFER (actual):* M1-M4: $p < 0.001$, $\varphi \approx 0.3$; M1-M2: $p < 0.001$, $\varphi \approx 0.4$; M2-M3: $p > 0.05$; M3-M4: $p < 0.001$, $\varphi \approx 0.2$.
TRANSFER (AIC): M1-M4: $p < 0.001$, $\varphi \approx 0.3$; M1-M2: $p < 0.001$, $\varphi \approx 0.4$; M2-M3: $p > 0.05$; M3-M4: $p < 0.001$, $\varphi \approx 0.2$.

Regarding a possible preference for *to*, Figure 14 and Figure 15 indicate that transfer (and transfer-related) verbs are most frequently paraphrased by a *to*-POC already at the beginning of the period, with over 50 per cent of the relevant verb tokens (transfer verbs in POC) selecting for *to*-patterns rather than PP-complements involving any other preposition in M1. The distributional development again mirrors the trends mentioned above – while there is no significant overall change throughout the period if only *to* is taken into account, a significant increase does show up when *to* is considered together with its complex variants *unto* and *onto*.[126]

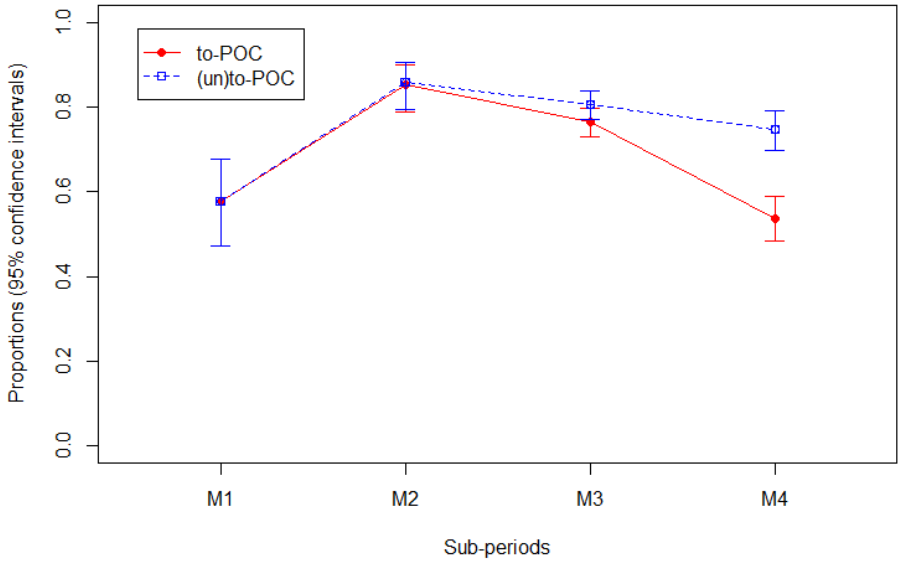

Figure 14 Proportional distribution of *(un)to*-POCs within all TRANSFER (actual)-POC tokens

This change is slightly more pronounced in the case of ACTUAL TRANSFER/ INTENDED TRANSFER and COMMUNICATION verbs as shown in Figure 15.[127]

[126] *to:* M1-M4: $p > 0.05$; M1-M2: $p < 0.001$, $\varphi \approx 0.3$; M2-M3: $p > 0.05$; M3-M4: $p < 0.001$, $\varphi \approx 0.2$.
(un)to: M1-M4: $p \approx 0.001$, $\varphi \approx 0.1$; M1-M2: $p < 0.001$, $\varphi \approx 0.3$; M2-M3/M3-M4: $p > 0.05$.
[127] *to*: M1-M4: $p > 0.05$; M1-M2: $p < 0.001$, $\varphi \approx 0.3$; M2-M3: $p > 0.05$; M3-M4: $p < 0.001$, $\varphi \approx 0.2$.
(un)to: M1-M4: $p < 0.001$, $\varphi \approx 0.2$; M1-M2: $p < 0.001$, $\varphi \approx 0.3$; M2-M3: 1; M3-M4: $p > 0.05$.

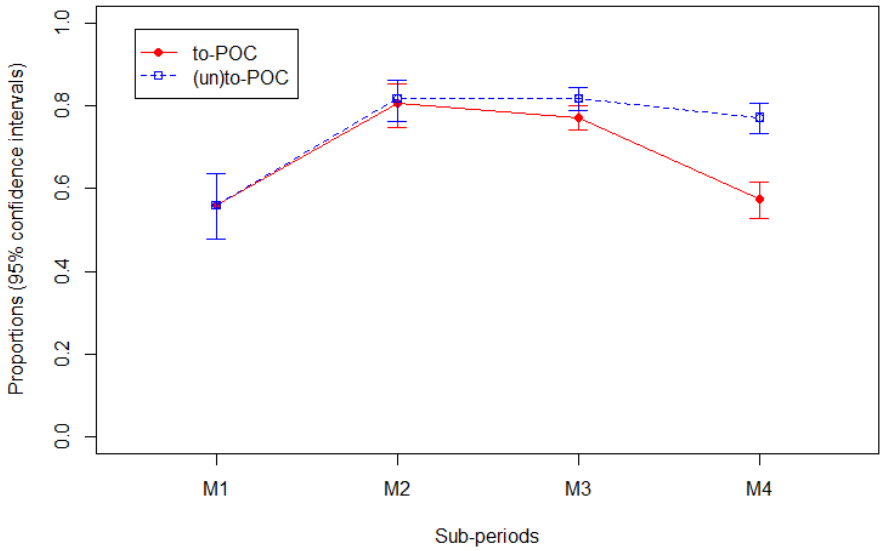

Figure 15 Proportional distribution of *(un)to*-POCs within all TRANSFER (actual/intended/comm)-POC tokens

To conclude, a considerable attraction between transfer (and transfer-related) verbs and *(un)to* appears to hold from the beginning of the period onwards. That this tendency should become even stronger in the course of the period is a welcome detail. It also supports the idea that the foundations of the PDE dative alternation, i.e. the close association between DOC and *to*-POC with a prototypical meaning of transfer, were essentially laid within Middle English. The reverse figures, i.e. figures for the distribution of *to* with the various verb classes, are not explicitly reproduced here, but further corroborate the point made in this section – *to*-POCs clearly occur more frequently with verbs of the classes dealt with here (i.e. transfer-related verbs). Again, this suggests that there is a strong relation between the two patterns of DOCs and *to*-POCs with transfer verbs, which became only more intimate over the course of the period.

If we consider the broad classes of transfer and transfer-related verbs in more detail, we see that as expected, there is a significant decrease in the proportional frequency of DOCs in favour of POCs with verbs of physically concrete successful transfer (Figure 16).[128] A similar significant drop in relative frequency can be observed with verbs denoting abstract events/ metaphorical transfer such as *pay so. a visit* (Figure 17).[129]

[128]M1-M4: $p < 0.001$, $\varphi \approx 0.2$.
[129] M1-M4: $p < 0.001$, $\varphi \approx 0.4$.

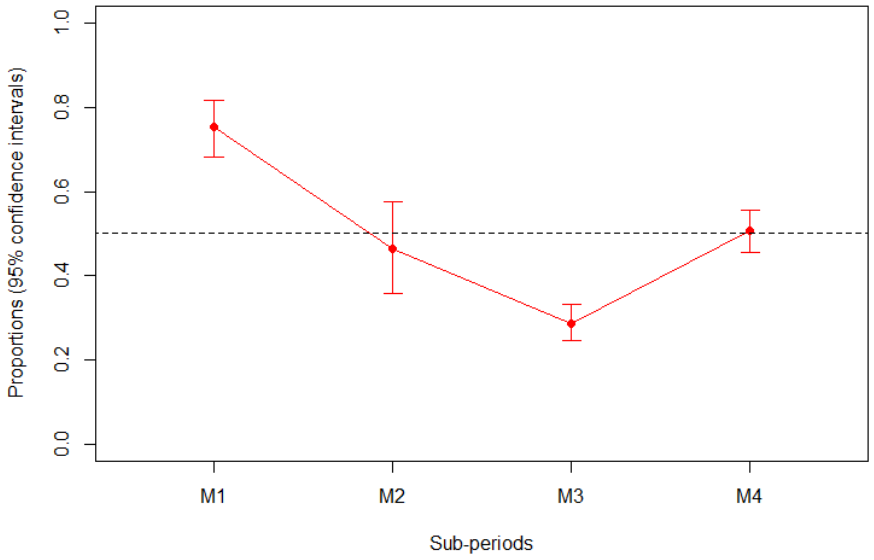

Figure 16 Proportional distribution of TRANSFER (concrete)-verbs in DOC (vs. POC)

While the DOC accounts for approximately 75 (85) per cent of concrete (abstract) transfer tokens respectively in M1, these figures drop below 40 per cent until M3, before re-rising up to 50 per cent towards M4 in both cases. Again, this development reflects the turnaround mentioned repeatedly above; the constructions seem to enter into a balanced relationship towards the end of the period.

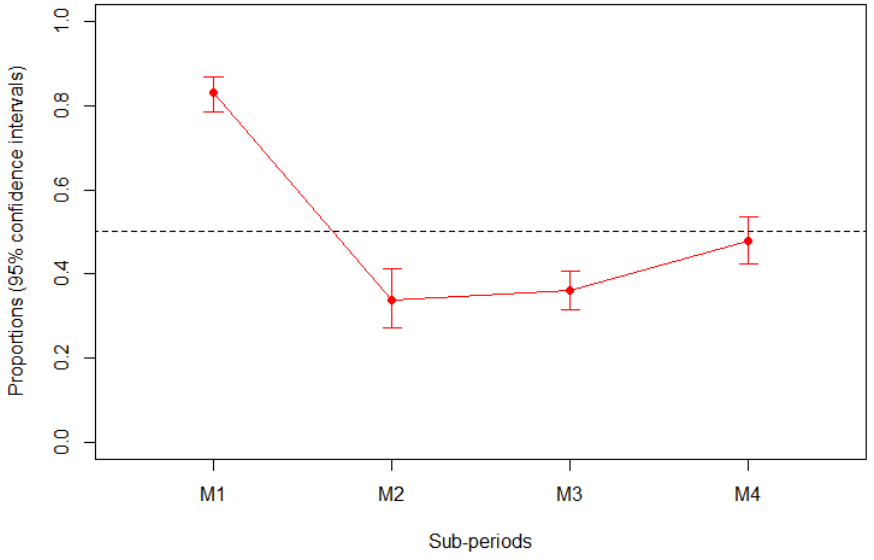

Figure 17 Proportional distribution of TRANSFER (abstract)-verbs in DOC (vs. POC)

Although the overall trend is thus the same with both concrete and abstract transfer verbs, the specific pathways are remarkably different: in the former case, the DOC decreases rapidly and steadily from M1 to M3, and only increases towards the end (M3-M4).[130] By contrast, in the latter there is an initial

[130]*concrete transfer*: M1-M2: $p < 0.001$, $\varphi \approx 0.3$; M2-M3: $p \approx 0.001$, $\varphi \approx 0.1$; M3-M4: $p < 0.001$, $\varphi \approx 0.2$.

sharp fall in frequency (M1-M2), after which the development stagnates to a certain extent, and the later turn-around appears to be much slower (M2-M4).[131] It is furthermore interesting that the percentage of concrete transfer verbs in DOCs is lower than that of verbs of abstract transfer in M1 (75 per cent vs. 85 per cent).

As regards the specific POC-types associated with verbs of concrete and abstract transfer, we find that the increase in *to*-POCs in the total of POC tokens instantiated by these verb classes that we saw above (Figure 14) is mainly caused by concrete transfer verbs (Figure 18). In contrast to *to*-POCs with abstract transfer verbs, which after an initial rise (M1-M2) decrease again in the later periods (M2-M4), the former stably remain at roughly the same frequency level.[132] Furthermore, the fraction of concrete verb POCs taken up by *to*-patterns are considerably higher in all sub-periods (M1: 63 vs. 54 per cent, M2: 91 vs. 84 per cent, M3: 89 vs. 71 per cent, M4: 87 vs. 61 per cent), indicating that the association between concrete transfer and *to*-POCs is stronger from the beginning onwards and becomes even stronger over time.

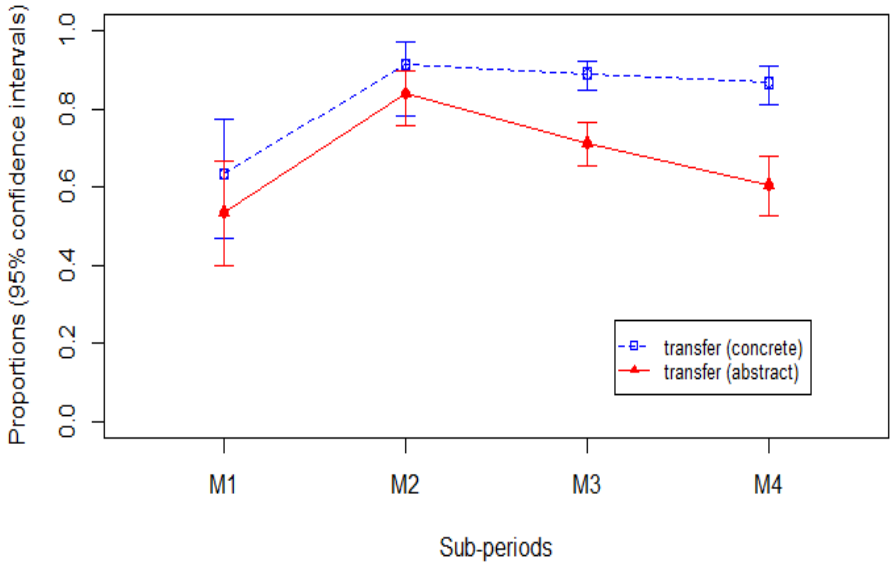

Figure 18 Proportional distribution of *(un)to*-POCs within all TRANSFER (concrete/abstract)-POC tokens

This is not entirely unexpected, though, since we saw above that verbs of sending and bringing, which were included in the group of 'concrete transfer' in this analysis, were available for *to*-POC usage in Old English already. It could thus be assumed that concrete transfer verbs (other than sending/bringing) were among the first classes the construction was extended to.

[131] *abstract transfer*: M1-M2: $p < 0.001$, $\varphi \approx 0.5$; M2-M3: $p > 0.05$; M3-M4: $p \approx 0.001$, $\varphi \approx 0.1$.
[132] *(UN)TO concrete transfer*: M1-M4: $p < 0.001$, $\varphi \approx 0.2$; M1-M2: $p < 0.05$, $\varphi \approx 0.3$; M2-M3/M3-M4: $p > 0.05$.
(UN)TO abstract transfer: M1-M4: $p < 0.001$, $\varphi \approx 0.5$; M1-M2: $p < 0.001$, $\varphi \approx 0.3$; M2-M3: $p < 0.05$, $\varphi \approx 0.1$; M3-M4: $p > 0.05$.

A similar case is presented by verbs of communication, which were also present in *to*-POCs in OE: as shown below, the *to*-POC is likewise comparatively frequent with these verbs in M1 already. It is in this context that the seemingly less close association between verbs of abstract transfer and the *to*-POC especially in M1 is surprising – due to their semantic affinity to other verbs of metaphorical giving such as communication verbs, this verb class would have been predicted to occur in the pattern at an early stage as well.

Moving on to the remaining transfer-related verb classes, namely verbs of intended transfer such as *promise* and communication verbs (*tell*, *teach*), and their preferences for either one or the other of the two variants (DOC vs. POC), a slightly different picture than before presents itself. Unfortunately, Figure 19, which show results on intended transfer-verbs, is difficult to interpret due to the very low numbers of tokens for this particular verb class (N=83 for the whole period). It seems to be the case that POCs rise in proportional frequency between M1 and M3, after which there is a decrease (M3-M4), which re-establishes the point of departure (M1: 18.5 per cent POC - M4: 18.1 per cent POC).[133] Nevertheless, the representativeness of the results is questionable.

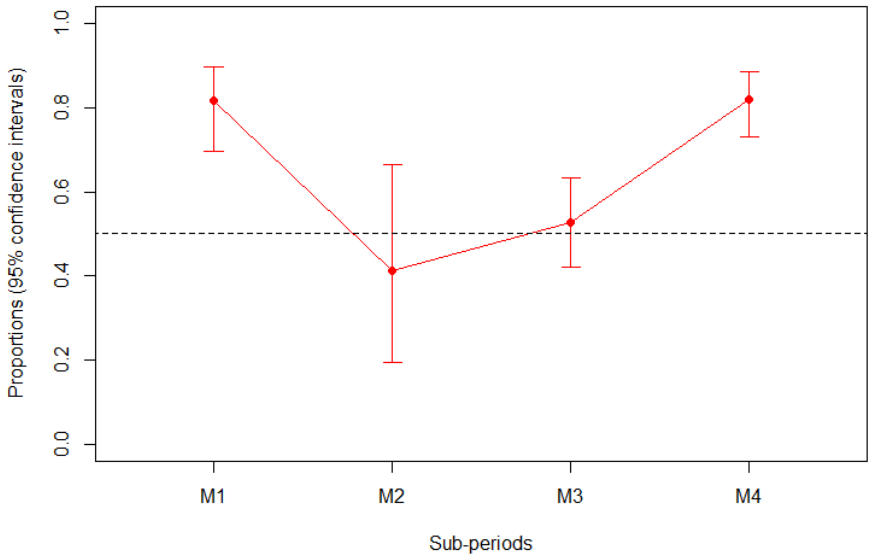

Figure 19 Proportional distribution of TRANSFER (intended) verbs in DOC (vs. POC)

Quite in contrast, Figure 20 on communication verbs shows that the DOC in this case was actually more frequent (although only significantly so in M1, $p < 0.001$; $V > 0.5$) than the POC at all times. The initial drop in relative frequency of the DOC (M1-M2) thus did not result in a temporal surpassing of the POC over the DOC, but only in a balanced coexistence. Among the POCs used to paraphrase verbs of communication, *(un)to*-POCs account for about half of all tokens in M1 – a figure which rises to over 80 per cent in M3 and M4 (M1-M4: $p < 0.001$, $\varphi \approx 0.3$).

[133] *intended transfer:* M1-M4: $p > 0.05$; M1-M2: $p < 0.01$, $\varphi \approx 0.3$; M2-M3: $p > 0.05$; M3-M4: $p < 0.001$, $\varphi \approx 0.3$.

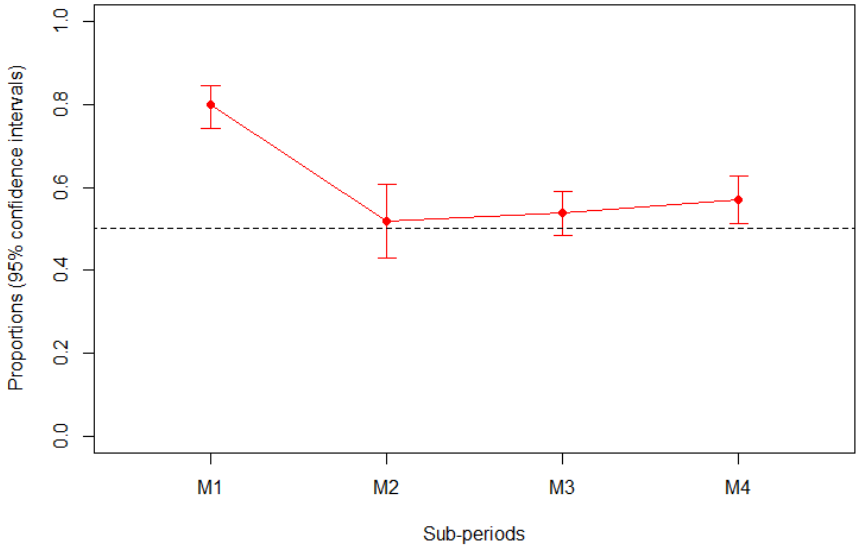

Figure 20 Proportional distribution of COMMUNICATION verbs in DOC (vs. POC)

An example for verb classes in which the DOC does not maintain or regain its strength in the course of the period, but in which POCs clearly win out, is the class of dispossession verbs. As seen in Figure 21, there is a clear increase of POCs at the expense of DOCs towards late Middle English. While only around 26 per cent of all dispossession verb tokens are found in the POC in M1, it is 86 per cent in M4; i.e. while the DOC is significantly more frequent than the POC in the earliest sub-period, the opposite situations holds for the latest period.[134] Among the POC-types available for dispossession verbs are *from*, *of*, and *at* (in the sense of 'from'), with the first one being prevalent above all in the later periods.

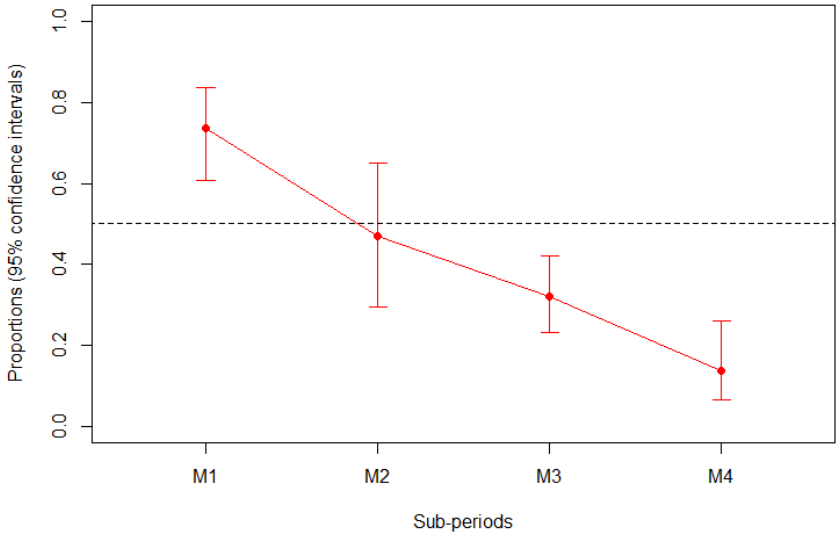

Figure 21 Proportional distribution DISPOSSESSION verbs in DOC (vs. POC)

[134] *dispossession*: M1-M4: $p < 0.001$, $\varphi > 0.5$; M1-M2/M2-M3/M3-M4: $p > 0.05$; M1: $p < 0.001$, $V \approx 0.5$; M2: $p > 0.05$; M3: $p < 0.001$, $V \approx 0.4$; M4: $p < 0.001$, $V > 0.5$.

Refusal verbs are unfortunately highly infrequent throughout the whole period (N=30, between 1 and 11 tokens per sub-period). As indicated by the large confidence intervals in Figure 22, no conclusions on the verbs' behaviour regarding the choice between DOC and POC can therefore confidently be drawn.[135] Incidentally, also within the POCs, there is no clear systematicity, but verbs of refusal selected for various different prepositions in Middle English (cf. e.g. (*91*a-b).

(91) a. But Crist *denyeþ* þis **to hem**
'But Christ denies this to them'
(CMWYCSER,I, 374.2660; M3)

b. he *wil* not / *denye* his feet **fro the**
'he will not deny his feet from you'
(CMAELR4, 19.544; M4)

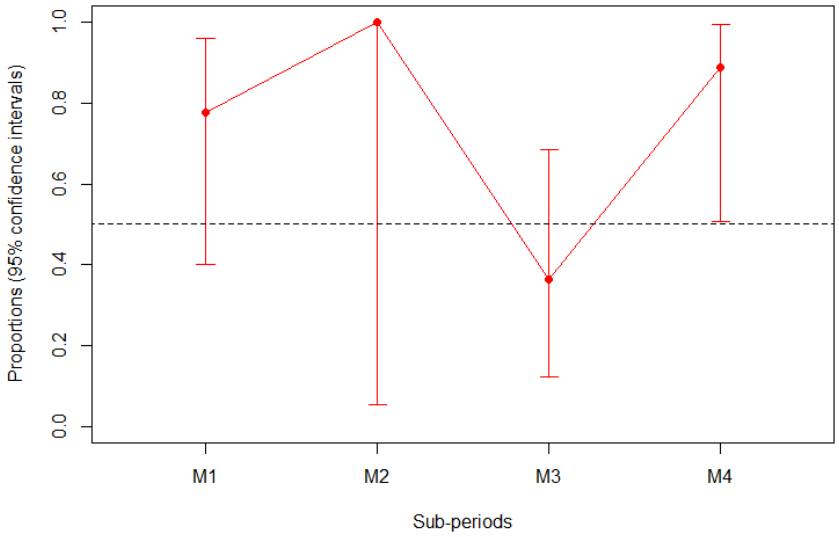

Figure 22 Proportional distribution of REFUSAL verbs in DOC (vs. POC)

This might indicate that the members of this verb class were rather ambiguous concerning their precise semantics (in comparison to the more prototypical members of the DOC), i.e. that the category of refusal verbs was not as semantically coherent as other verb classes.

Complex predicate combinations encoding reversed transfer (such as *take one's leave*), in contrast, show a distinct preference for the POC, typically formed with *of*. As seen in Figure 23, the POC accounts for over 80 per cent of reversed transfer verb tokens in M1, and is near categorical in M4 (94 per cent), i.e. the POC is significantly more frequent in all periods, with no significant changes in the course of the period.[136]

[135]*refusal:* M1-M4/M1-M2/ M2-M3/M3-M4: $p > 0.05$.
[136]*reversed transfer:* M1-M4/ M1-M2 / M2-M3 / M3-M4: $p > 0.05$; M1: $p < 0.001$, $V > 0.5$; M2: $p < 0.001$, $V > 0.5$; M3: $p < 0.001$, $V > 0.5$; M4: $p < 0.001$, $V > 0.5$.

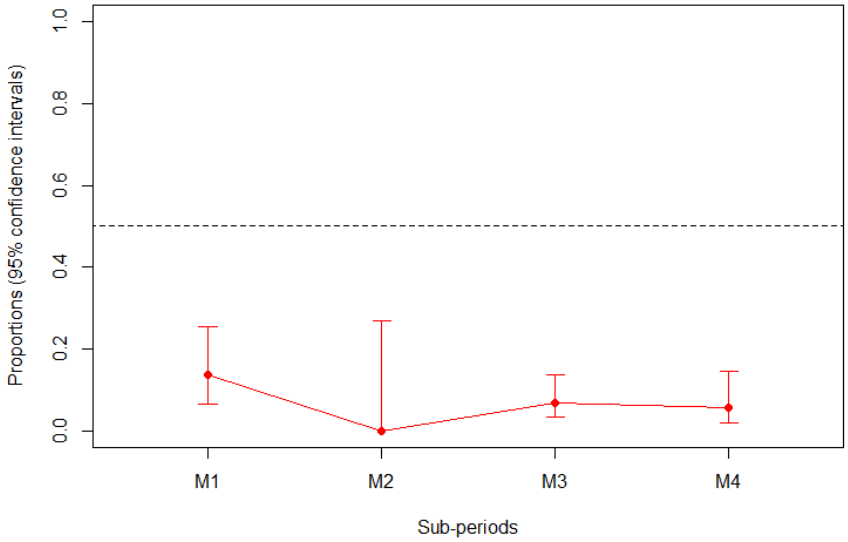

Figure 23 Proportional distribution of DOC vs. POC in total of REVTRANS (transfer) verbs

Reversed communication verbs, on the other hand, are not clearly associated with one of the members of the alternation pair. Although the DOC decreases in relative frequency in the course of the period until both constructions take up about half of the occurrences, the changes are not significant (Figure 23). This 'shared workload'-situation is still present in PDE, where *ask so. a favour* coexists alongside ask a favour of someone.

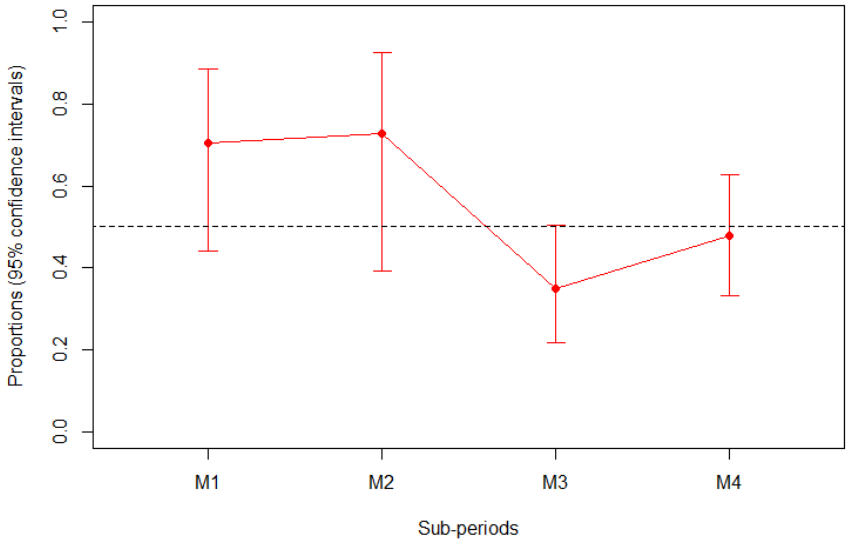

Figure 24 Proportional distribution of of REVTRANS (comm) verbs in DOC (vs. POC)

The POC is also stronger in the case of mental/attitudinal verbs, as Figure 25 shows; the DOC is restricted to about 35 to 25 per cent of tokens per sub-period, and there is again no significant change

in the proportional frequency.[137] It has to be noted, however, that the contrary is true if only simple mental/attitudinal verbs such as *forgive* are included, in this case, the DOC is clearly dominant (80-89 per cent).

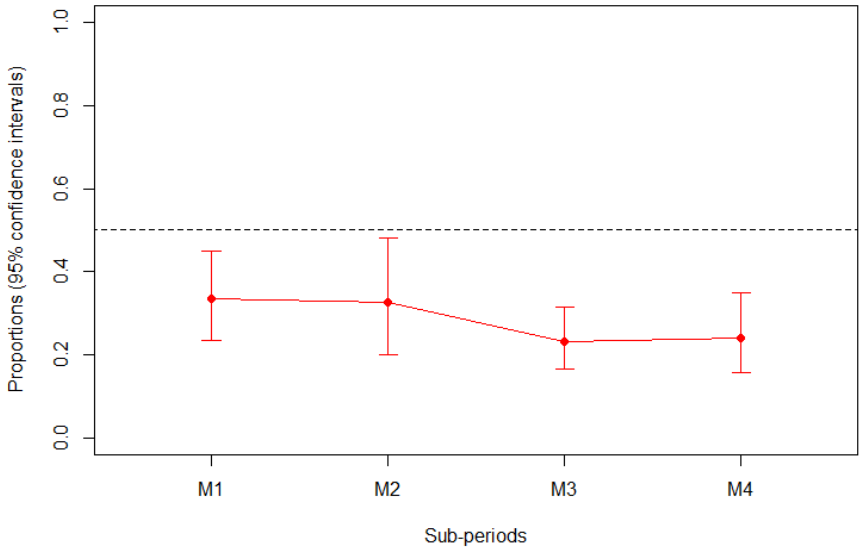

Figure 25 Proportional distribution of MENTAL verbs in DOC (vs. POC)

The large majority of POC-instances of mental/attitudinal verbs is taken up by light verbs, i.e. complex multi-word combinations as in (92), which show a clear bias for the prepositional patterns. An example for one of the very rare DOC-occurrences of complex predicate verbs of mentality/attitude is given in (93).[138]

(92) a. he *hade* pite **of ham**
'he had pity on them/ he pitied them'
(CMBRUT3,28.808; M3)

b. the feende that *had* gret envy **to hym**
'the fiend that had great envy to him/ the fiend that greatly envied him'
(CMEDMUND,168.158; M4)

(93) ase muche luue as þu *hauest* **sum mon**
'as much love as you have (for) some man'
(CMANCRIW-2,II.299.895; M1)

Among the prepositional complex predicate constructions of this verb class, *of*- and *to*-POCs are most common; together, they make up between 65 and 89 per cent of all prepositional tokens in the individual sub-periods. An exception is M2, where the high frequency of the phrase *have mercy on*

[137] *mental*: M1-M4/M1-M2/M2-M3/M3-M4: $p > 0.05$; M1: $p < 0.001$, $V \approx 0.3$; M2: $p > 0.05$; M3: $p < 0.001$, $V > 0.5$; M4: $p < 0.001$, $V > 0.5$.

[138] DOC light verb uses with mental verbs take up less than 5 per cent in all sub-periods except for M2, where approximately 12 per cent occur in the DOC; however, figures in general are relatively low in this period (N=35), circumstances which might skew the results.

someone (which is also frequently formed with *of* as well as *to*) and the overall lower token count influence the outcome. The varying behaviour of different groups within this larger verb class is also reflected in their PDE features: while *forgive* and *envy* are still found in the DOC as well as in the *to*-POC, meaning that they participate in the dative alternation, light verb constructions as illustrated above are typically restricted to POCs, and among those, POCs that include prepositions other than *to* (**have so. love*/ **have love* ***to*** *so.* vs. *have love* ***for*** *so*.). Importantly, these constructions are not limited to individual prepositions even in PDE. Rather, there is still great variability in the verb combinations' subcategorisation for prepositions types (cf. e.g. *feel envy towards* vs. *have love for* vs. *feel hatred against*, etc.). Furthermore, POC uses are of course in direct competition with monotransitive uses (*love so.* > *have love for so*.). These were, however, not included in the present study.

Within the larger class of benefactive/malefactive verbs, two groups can be distinguished: first, verbs of 'pure' benefaction or malefaction, and second, verbs of creation (as in *John built Mary a house/ John baked Mary a cake*). In the case of the former, the DOC sees a substantial decrease in the beginning (M1-M3). This is followed by a sharp increase in course to the last period (M3-M4), with the DOC gaining in frequency again until a comparatively balanced distribution of DOC and POC is reached (Figure 26).[139]

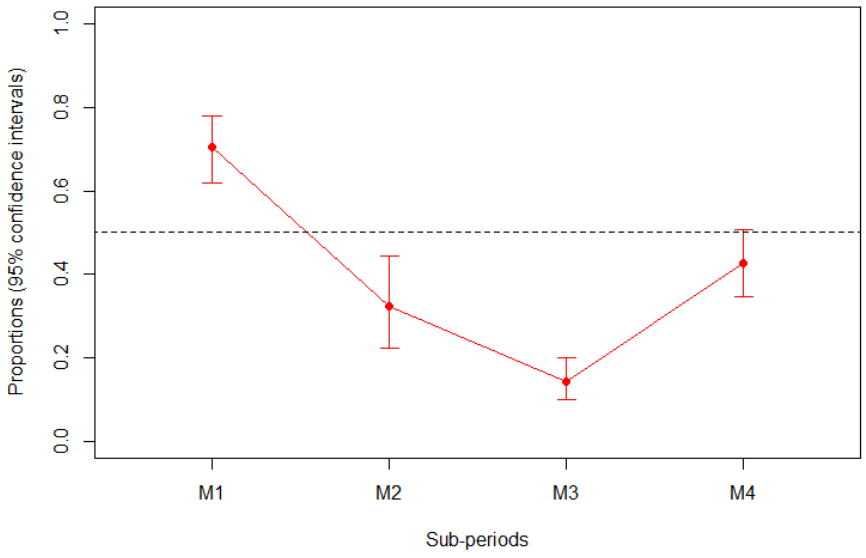

Figure 26 Proportional distribution of BEN/MAL (pure) verbs in DOC (vs. POC)

This development is conspicuous in so far as pure benefaction/ malefaction verbs are commonly thought to have been ousted from the DOC in the history of English, as mentioned above (**John broke Mary the shoulder*). An explanation for this unexpected result might lie in the fact that many instances included in this (sub-)class are once more complex predicate constructions, DOC as well as POC uses

[139]*BEN/MAL (pure):* M1-M4: $p < 0.001$, $\varphi \approx 0.3$; M1-M2: $p < 0.001$, $\varphi \approx 0.4$; M2-M3: $p < 0.001$, $\varphi \approx 0.2$; M3-M4: $p < 0.001$, $\varphi \approx 0.3$; M1: $p < 0.001$, $V \approx 0.4$; M2: $p < 0.005$, $V \approx 0.3$; M3: $p < 0.001$, $V > 0.5$; M4: $p > 0.05$.

of which are illustrated in examples (94a-b). Importantly, the DOC is still acceptable with such combinations in PDE, at least with pronominal REC-arguments.

(94) a. **his louerd** he *dede* […] michel harm
'he did much harm (to) his lord'
(CMVICES1,115.1415; M1)

b. And *doþ* / **to þe poure men** / greate harmes
'and [he] does to the poor men great harms'
(CMAYENBI,40.678; M2)

This means that there again is a split between complex and simple predicate constructions within this class. A further difference between the two sets is that complex predicate benefactives/malefactives are predominantly paraphrased by a *to*-POC (ca. 65 per cent of the total) in Middle English, whereas there is no clear association to one POC-type in the case of the simple benefactives/malefactives in this period.

Excluding complex predicate constructions from the group of pure benefaction/malefaction verbs, i.e. restricting the data to simple benefactives/malefactives such as those in (95), we find that this verb class in fact behaves as predicted: while DOCs account for a fraction of more than 80 per cent in M1, this number steadily falls throughout the period (M1-M4: $p < 0.001$; $\varphi \approx 0.6$). In M4, no tokens of the DOC are attested.

(95) a. Acc nohht ne mihht itt *oppnenn* **hemm** þe 3ate off heoffness blisse
'and it could not open the gate of heaven's bliss (to/for) them'
(CMORM,I,142.1171; M1)

b. sche *openyd* hir hert **to hym**
'she opened her heart to him'
(CMKEMPE,224.3623; M4)

Simple verbs of pure benefaction/malefaction thus pattern together with dispossession verbs rather than transfer verbs in that DOC uses are superseded by POC uses in the course of the period.

The sub-class of benefactive verbs of creation is of particular interest, since as pointed out above, verbs of this type are assumed to enter into a second alternation (the benefactive alternation) with a *for*-POC in PDE. While this phenomenon is undoubtedly present in PDE, however, it seems to be strikingly absent from Middle English. Rather than indicating the establishment of a stable distribution of the DOC alongside the POC as e.g. in the case of transfer verbs above, DOCs drop over the course of the period (M1-M4). By the end of the period, POCs seem to have become near-obligatory (Figure 27).[140]

[140]*BEN/MAL (creation):* M1-M4: $p < 0.001$, $\varphi > 0.5$; M1-M2/M2-M3/M3-M4: $p > 0.05$; M1: $p < 0.001$, $V > 0.5$; M2: $p > 0.05$; M3: $p < 0.001$, $V > 0.5$; M4: $p < 0.005$, $V > 0.5$.

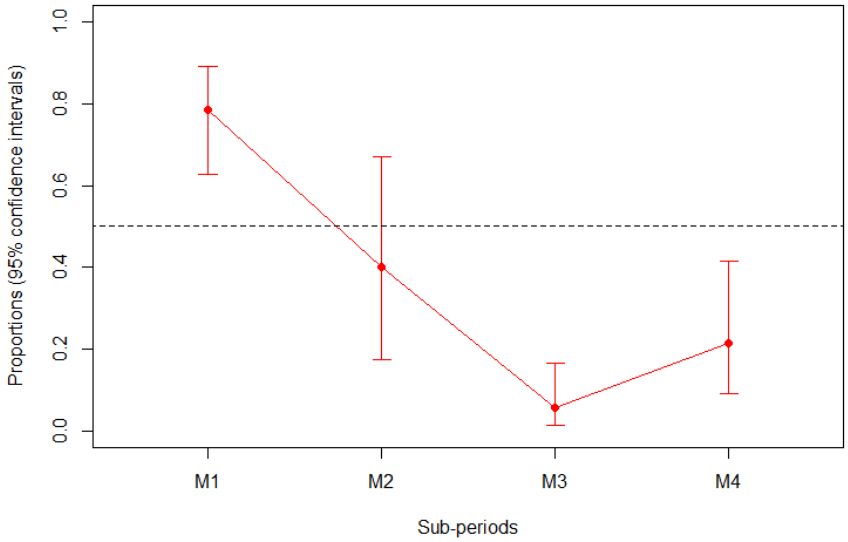

Figure 27 Proportional distribution of BEN/MAL (creation) verbs in DOC (vs. POC)

Furthermore, concerning the POC-type chosen, prepositional uses of verbs of creation oscillate between a range of prepositional patterns. This holds true even in the later sub-periods of M3 and M4, meaning at a time when *to* was already well established as **the** periphrasis for verbs of transfer. Both *for*-POCs and *to*-POCs are strongly present (above all the latter), as is shown in (96) below, but no clear preferences can be seen. Examples (96b-c) indicate that even single verbs tend to vary concerning the PP-construction they appear in. Also, other POCs are found as well – a clear systematicity or association is thus missing in the case of this verb class. [141]

(96) a. Salamon *bildide* a noble hous **to himself**
'Salomon built a noble house to himself'
(CMPURVEY,I,12.477; M3)

b. God *haþ wrou3t* **for him** meny a faire miracle
'God has often worked/caused great miracles for him'
(CMBRUT3,101.3058; M3)

c. so mych sorow *wrought* **to þ=e= Britouns**
'[he] worked/caused so much sorrow to the Bretons'
(CMBRUT3,45.1365; M3)

These data suggest that the establishment of the benefactive alternation was a development that only occurred at a later stage in the history of English, and cannot be assessed on the basis of the present results. Nevertheless, the issue will be discussed below, and possible explanations will be put foward.

[141]It has to be admitted, though, that this verb class is by itself relatively low in numbers; the representativeness of these figures is thus questionable (*M3*: N=50; *M4*: N=22). While the difference in proportions of *to*-POCs and *for*-POCs is significant for M3 ($p \approx 0.0001$; $\varphi = 0.6$), this is not the case for M4. However, as just indicated, the numbers are too small to convincingly take this as evidence for a possible decreasing trend of *to*-POCs.

Summing up, the results presented in this section indicate that there are striking differences in the distribution of DOC vs. POC uses between the individual verb classes. Nevertheless, certain tendencies can be observed. More specifically, the classes can be divided into three larger groups according to their development:

The first group sees an initial rise in frequency of (mainly *to*-)POCs, followed by a later (less drastic) decrease and resurgence of the DOC. This ultimately leads to a 'division of workload' situation. This relationship is still present in PDE, and crucially characterises the dative alternation. The development of this group therefore represents the emergence of the dative alternation as such. This group most prominently includes transfer and transfer-related verbs (concrete, abstract, and intended transfer, as well as communication verbs). The same behaviour is furthermore shown by verbs of mental activity such as *forgive* and *envy* as well as verbs of refusal. Importantly, these classes are also still part of the DOC in PDE, and also participate in the dative alternation today (even if their *to*-POC uses are marked). Benefactive/malefactive complex predicates (*intend harm, do good*) are similarly still found to alternate in today's English. In these cases, it is the DOC that is marked, however, and the class is not productive in PDE, but restricted to fixed expressions.

Second, classes such as verbs of dispossession and simple benefactives/malefactives clearly indicate a 'victory' of POCs in the course of the period. DOC occurrences become increasingly infrequent in the later stages, and are even absent entirely in some cases. Accordingly, these verb classes are also not acceptable in the DOC anymore in PDE, but are restricted to POCs (typically involving prepositions other than *to*) or other means of expression.

Third, there is a group of verb classes with heterogeneous behaviour, which subsumes a number of smaller sets. On the one side, we here find classes such as verbs of reversed communicated transfer (as in *ask so. a favour*) and verbs of creation, which are still used in the DOC in PDE, but do not take part in the dative alternation. Instead, they are associated with different POCs (*from/of* in the case of the former, and *for* in the case of the latter). On the other side, verbs of reversed transfer and complex predicates of emotion or mentality (*have love/ envy*) are strongly biased towards POCs at all times. Although some DOC tokens can be found, these became even rarer towards the end. In contrast to the first two groups, in which the POCs tend to become limited to one specific preposition, the third group still fluctuates between various prepositional constructions at the end of the period, i.e. there is no reduction in variability in this last set of verb classes.

As to the larger research questions of this thesis, the findings shown in this chapter suggest that the emergence of the dative alternation indeed took place within Middle English, and was the result of the predominance of *to*-POCs within the prepositional paraphrases, triggered by its high semantic compatibility with the very frequent transfer-verbs. The question of which verb classes were in fact dominant within the DOC will be addressed in more detail in the subsequent section. Before dealing

with results on the semantics of the DOC, however, I will briefly comment on the semantics of the (*to*-)POC.

4.2.2.3. Changes in type frequency of the (to-)*POC*

As mentioned above, I assume that the POCs in general, and the *to*-POC in particular, experienced a considerable semantic widening in the history of English. That is, the originally spatial prepositional patterns extended into new contexts, and came to acquire more grammatical functions, including those of encoding ditransitive events. In order to assess this issue, the type frequency of the verbs found in (*to*-)POCs can be looked at. Following Barðdal (2008, 2009), among others, in assuming that constructional productivity is mainly determined by type frequency, this will also allow us to comment on the productivity of the patterns in question.

There are three ways to approach the issue of type frequency in this context: first, changes in the range of verb classes associated with the construction were investigated to establish whether the (*to*-)POC as a construction expanded in meanings, and thus became more productive. While a comparable analysis of the DOC yielded noteworthy results, this was, however, not the case for (*to*-)POCs. In fact, the number of verb classes associated with the construction(s) remains remarkably stable over time, with no classes being added or lost between the periods. This finding is on the one side quite unexpected, as it seems to contradict the hypothesis of a semantic widening of POCs. On the other hand, it has to be kept in mind that this process in all likelihood started well before Middle English (Visser 1963; cf. also De Cuypere's 2015c argument that the *to*-POC with transfer verbs was already embryonically present in Old English). While the first extension to new verb class-types might therefore have taken place in Old English, an increase in the individual verb types associated with the construction, as well as a rise in type frequency within the individual innovative classes should still be seen in Middle English.

The second way to address this issue was therefore to establish the frequency of individual verb types that occur with the (*to*-)POC in the dataset. As can be seen in Table 11, the raw number of verb types in both constructions increases over time, moving from 62 (37) in M1 to 80 (59) in M4. While this would indicate an extension in contexts (and thus a sign of a pre-constructionalisation constructional change on Traugott & Trousdale's 2013 approach), it is important to note that the ratio of types and tokens in the relevant periods actually decreases rather than increases. However, since the tokens taken into account for the (*to*-)POC were restricted in a number of ways a priori, the results presented here might not be entirely representative in any case.

Table 11 Type/token distribution of verbs in the (to)-POC

POC	**M1**	**M2**	**M3**	**M4**	***to*-POC**	**M1**	**M2**	**M3**	**M4**
Types	62	52	89	80	**Types**	37	44	68	59
Tokens	346	366	1352	822	**Tokens**	125	241	849	487
Type-Token-Ratio	0.2	0.14	0.07	0.097	***Type-Token-Ratio***	0.296	0.18	0.08	0.12

Finally, the type frequency of verbs within individual verb classes associated with the (*to*-)POC is of interest. Although a closer investigation of all of these classes would certainly be worthwile, I will only comment on selected issues here. This is mainly due to the very low counts of tokens as well as types in some of the verb classes (such as verbs of refusal), which makes it difficult to generalise. What can nevertheless be gleaned from the data is that the most type frequent verb classes in the *to*-POC are those of verbs of communication as well as verbs of concrete and abstract transfer. The former two are more prominent in M1 than verbs of abstract transfer, with a type-token ratio of 0.5 (communication) and 0.62 (concrete transfer) in contrast to 0.3 (abstract transfer).[142] Even though the raw number of types increases over the course of the period for all three verb classes, the ratio of types and tokens again in fact decreases in each case. This might indicate an increased semantic coherence of the individual categories in line with Barðdal (2008, 2009).

In sum, the data analysed in this study does not lend itself too easily to investigations of semantic changes in the constructions concerned; nevertheless, it is safe to assume that a semantic widening of the POCs involved, and the *to*-POC in particular, did take place between Old and Middle English, and in the course of the Middle English period.

4.2.3. Results C: semantic narrowing

Focussing on the semantics of the DOC, i.e., the range of verb classes associated with the construction, it is evident that transfer and transfer-related verbs (classes i-iii) are highly predominant in M1 already (see Figure 28). Taken together, verbs of concrete or abstract transfer, intended transfer and communication account for more than 70 per cent of the total of DOC tokens in the beginning of the period. This fraction grows over the course of the period, i.e. the proportion of transfer-related verbs within the DOC significantly increases between M1 and M4 (although only at a small effect size).[143] The late Middle English situation is further assumed to be suggestive of later developments, i.e. on the

[142]The raw number of types in M1 is 13 (communication), 16 (concrete transfer), and 9 (abstract transfer), respectively.

[143]*transfer* (*actual/intended/communication):* M1-M4: $p \approx 0.001$, $\varphi \approx 0.1$; M1-M2: $p > 0.05$; M2-M3: $p < 0.05$, $\varphi \approx 0.1$; M3-M4: $p > 0.05$.

basis of PDE data we can presume that the notion of transfer is even more strongly present in the meaning of the DOC nowadays than in earlier periods.

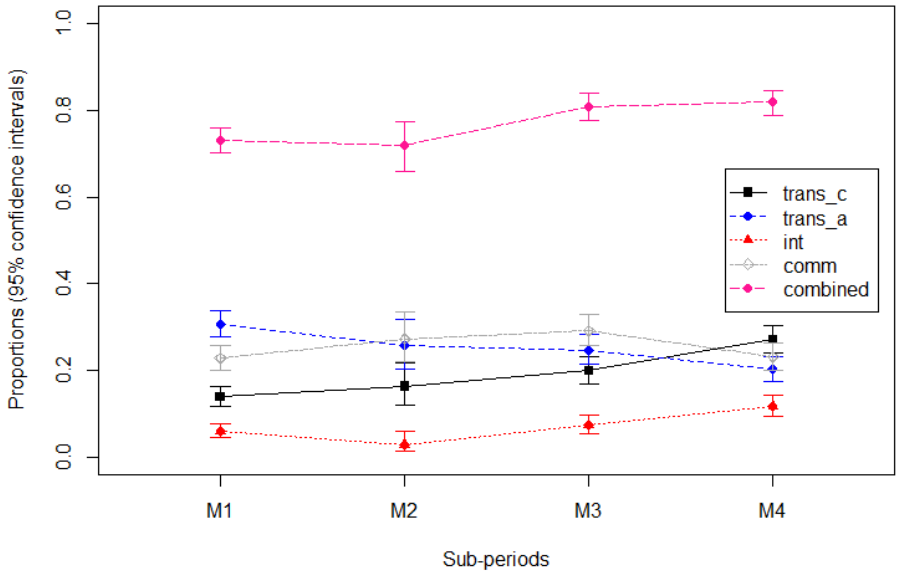

Figure 28 Proportional distribution of TRANSFER (concrete/abstract/intended/communication) verbs in the total of DOC tokens

Among the different transfer verb classes, verbs of concrete transfer (trans_c in Figure 28) show a significant increase over time, almost doubling in figures from around 14 per cent in M1 to over 27 per cent in M4. Verbs of abstract, metaphorical transfer (trans_a), by contrast, decrease in proportional frequency in the course of the period.[144] Although this might seem contradictory at first glance, it is taken to in fact support the assumption of a move towards more basic giving-semantics, since the sense of concrete, physical transfer is foregrounded at the expense of verbs and verb constructions denoting abstract events (such as *to pay so. a visit*), where the notion of transfer is comparatively opaque.

Verbs of intended transfer (int) such as *promise* or *offer* constitute a comparatively small part of DOC tokens in early Middle English (about 6 per cent in M1), but nevertheless almost double in numbers over time (to approximately 12 per cent in M4). This increase is significant at a 99.9 per cent level ($p < 0.001$), although the effect size is rather small ($\varphi \approx 0.1$).[145] Again, this trend can be taken as indicative of further changes in the time span between late Middle English and PDE: for example, *offer* appears as the sixth most frequent DOC verb in Mukherjee's (2005) dataset. The verb class might thus have risen in proportional frequency after Middle English (cf. also Stefanowitsch & Gries 2003; Gries & Stefanowitsch 2004).

[144] *transfer (concrete):* M1-M4: $p < 0.001$, $\varphi \approx 0.2$; M1-M2/M2-M3: $p > 0.05$; M3-M4: $p < 0.01$, $\varphi \approx 0.1$.
transfer (abstract): M1-M4: $p < 0.001$, $\varphi \approx 0.1$; M1-M2/M2-M3/M3-M4: $p > 0.05$.
[145] *transfer (intended):* M1-M4: $p < 0.001$, $\varphi \approx 0.1$; M1-M2/M2-M3: $p > 0.05$; M3-M4: $p < 0.05$, $\varphi \approx 0.1$.

The results on communication verbs are somewhat surprising in that they do not increase in frequency during the course of the period.[146] Nevertheless, they steadily account for about 23 to 29 per cent of all tokens in the respective sub-periods, and therefore rank among the three most prominent verb classes associated with the DOC, alongside concrete and abstract transfer verbs. This finding is in line with accounts of PDE ditransitives, in which verbs like *tell* or *ask* are typically mentioned as prototypical members of the DOC (cf. e.g. Gries & Stefanowitsch 2004).

Dispossession verbs (class iv) can count as representative of verb classes that display an opposite development to transfer(-related) verbs over the course of the period. This is indicated in Figure 29, which shows the proportional distribution of verbs of dispossession (among others) in the total of DOC tokens in the respective periods. Highly infrequent already in the earliest period – accounting for only approximately 5 per cent of all DOC tokens in M1 – dispossession verbs furthermore show a significant decrease between M1 and M4 ($p < 0.001$; small effect size: $\varphi \approx 0.1$), with only 8 tokens remaining in M4. This change is again taken to be indicative of later developments, i.e. of the complete ousting of privative verbs from the DOC.[147] The results on dispossession verbs therefore confirm the proposal that the sub-sense of 'X CAUSES Y to lose Z' is increasingly dropped in the course to PDE (cf. Rohdenburg 1995; Colleman & De Clerck 2011).

As seen above, in order to compensate for this dropping out of use from the DOC, verbs of dispossession are increasingly frequently found in POCs (typically including *from* or *of*). This development is in direct contrast to that of other, more central verb classes such as transfer verbs, which after an initial rise in frequency of prepositional competitors, reach a stable equilibrium between DOCs and POCs by the end of the period (as also shown above). I assume that this difference in development is crucial in explaining the changes visible in the history of ditransitives in English.

[146] *communication:* M1-M4/M1-M2/M2-M3: $p > 0.05$; M3-M4: $p < 0.05$, $\varphi < 0.1$.

[147] *dispossession:* M1-M4: $p < 0.001$, $\varphi \approx 0.1$; M1-M2/M2-M3: $p > 0.05$; M3-M4: $p < 0.001$, $\varphi \approx 0.1$.

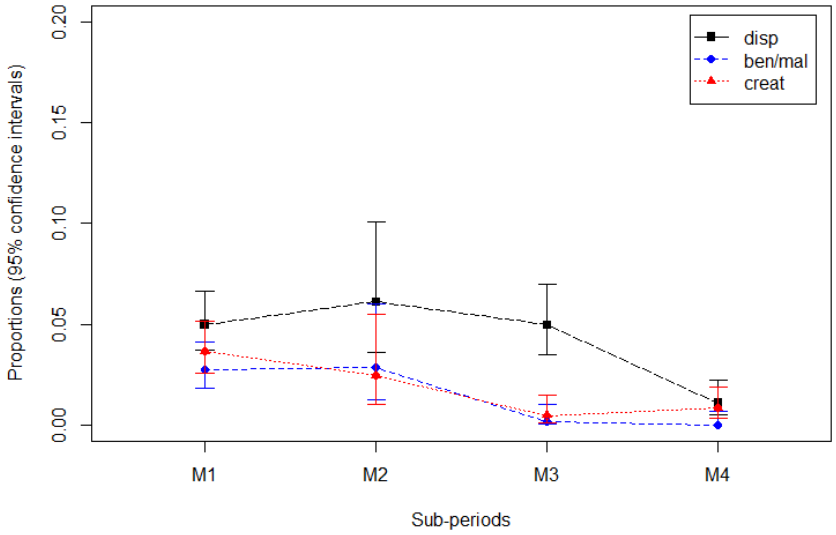

Figure 29 Proportional distribution of DISPOSSESSION and BEN/MAL verbs in the total of DOC tokens

A similar change is seen in the distribution of verbs of benefaction/malefaction, also included in Figure 29. Verbs of creation (creat), subsumed in this group, are surprisingly very rare in all sub-periods (3.5 per cent of DOC tokens in M1), and decrease towards M4 (0.8 per cent).[148] This phenomenon requires an explanation since verbs of creation such as *bake* or *build* are prominently present in the DOC in PDE. Accordingly, these verbs must have been reintroduced into the DOC at some point – as will be claimed below (Chapter 6.2.1.3), the establishment of the 'benefactive alternation' might have played a role in this development. On the contrary, verbs of pure benefaction/malefaction behave as expected: their proportion within the DOC significantly decreases between M1 and M4. In fact, no DOC tokens at all are found in the last sub-period (cf. the ungrammaticality of *John opened Mary the door*/ *John broke Mary the shoulder* in PDE).[149]

It is important to again distinguish between simple benefactives/malefactives and complex predicates of this kind in this regard. In contrast to the former, which were marginalised from the DOC and eventually lost completely, the latter are still acceptable in the construction today (at least to a certain extent). In correspondence with this difference, complex predicate benefactive/malefactive constructions also show a different development in Middle English. As seen in Figure 30, there is no significant change in proportional frequency of this group (ben/mal_lv) between M1 and M4. Instead, expressions of the type 'do/intend so. harm, do so. a favour' take up about 4 to 9 per cent of all DOC tokens in all sub-periods.

[148] *ben/mal (creation):* M1-M4: $p < 0.001$, $\varphi \approx 0.1$; M1-M2/M2-M3/M3-M4: $p > 0.05$.
[149] *ben/mal (simple, pure):* M1-M4: $p < 0.001$, $\varphi \approx 0.1$; M1-M2/M3-M4: $p > 0.05$, M2-M3: $p < 0.001$, $\varphi \approx 0.1$.

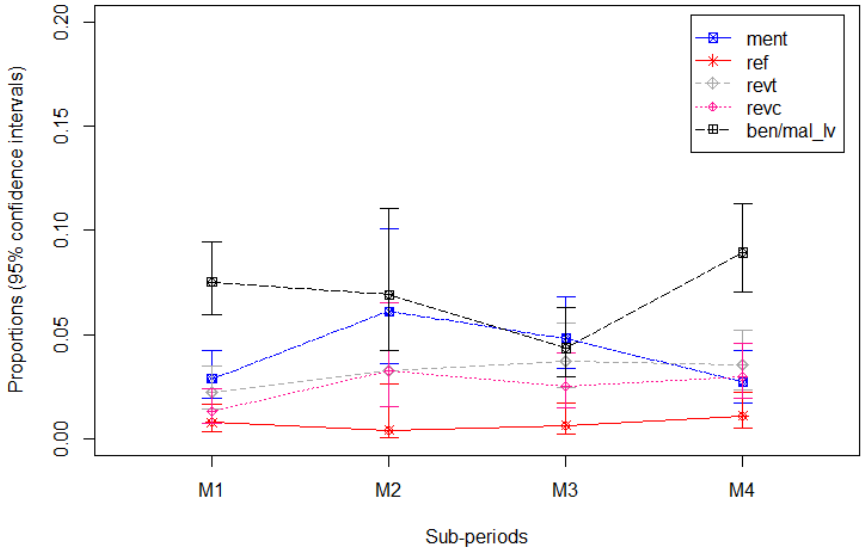

Figure 30 Proportional distribution of MENTAL, REFUSAL, REVERSED (COMM.) TRANSFER and BEN/MAL (LV) verbs in the total of DOC tokens

There is also no significant change in proportions over time in the case of verbs of refusal (ref; M1-M4/M1-M2/M2-M3/M3-M4: $p > 0.05$). These verbs are, as already mentioned above, unfortunately highly infrequent in the DOC throughout the whole period, with only 20 absolute tokens in total (M1-M4) occurring in the corpus.[150] This scarcity is reflected in Figure 30, indicating that the maximum that refusal verbs amount to is about 1 per cent of DOCs in M4.

Further examples of infrequent verb classes with no noteworthy development over time are the classes of verbs of reversed transfer (*take so. leave*) and verbs of reversed communicated transfer (*ask someone a favour/ the way*). These classes, which are labelled 'revt' and 'revc' in Figure 30, each account for less than five per cent of DOC tokens in all periods. Similarly, the frequency of mental/attitudinal verbs (class vii; ment) oscillates between three and six per cent, but does not change significantly over time (M1-M4/M1-M2/M2-M3/M3-M4: $p > 0.05$).

The main upshot of the developments just discussed is that the DOC saw a reduction in the range of verb classes over time, even though it appears that there were substantial differences between individual verb classes and groups of verb classes. The decrease in verb class types associated with the construction is mirrored by a decrease in verb types found in the DOC between M1 and M4 (Table 12).

[150]This is not to say that verbs of refusing were not used at all in Middle English, of course. The verbs were simply used more frequently in other constructions available to them (apart from the DOC and POC); cf. e.g. Visser (1963).

Table 12 Type/token distribution of verbs in the DOC

	M1	M2	M3	M4
Types	134	50	74	70
Tokens	905	246	645	739
Type-Token-Ratio	0.148	0.2	0.12	0.1

In line with Barðdal (2008, 2009), who assumes that type frequency is inversely correlated with semantic coherence, this reduction is taken to indicate an increase in semantic transparency of the construction over time. This in turn upholds the construction's productivity: with the construction becoming more coherent, it remains equally productive as before. The verb classes still associated with the construction might even increase in productivity, i.e. benefit from the reduction. This aspect was also investigated in the present study. Since most verb classes did not show clear signs of diachronic change, and the range of verb types associated with them neither clearly decreased, nor increased, these results will, however, not be presented in more detail here.

To conclude, this section has confirmed that the semantic scope of the double object construction was reduced over the course of Middle English. Certain senses, most importantly those related to transfer, seem to have been foregrounded. Even within the larger group of transfer-related verbs, a move towards more concrete, basic situations of giving took place. Again, this supports the assumption of a semantic specialisation of the construction in line with Colleman & De Clerck (2011). Senses which are cleary far removed from the concept of transfer, such as dispossession or pure benefaction/malefaction, were in contrast increasingly marginalised or even ousted entirely from the DOC within Middle English already. These two developments corroborate that the DOC saw a substantial semantic narrowing over time, and suggest that crucial changes were under way in Middle English. Nevertheless, it has also been seen that transfer-related verb classes were highly frequent already at the beginning of the period, whereas classes peripheral to the core meaning of transfer were relatively rare at this stage. It can therefore be assumed that the trends observed in Middle English were present to some extent also before. Moreover, it is interesting that a third group of verb classes (including mental/attitudinal verbs and verbs of refusal, among others) were retained in the construction throughout the period, and until this day. Even though these verb classes are comparatively low in proportional frequency in Middle English, and do not show any increases, they are nevertheless stably attested at all times. Semantically, this group takes up an intermediate position on a cline between transfer and non-transfer, since they can be conceptualised as metaphorical extensions of the core meaning, but are clearly not prototypical categories of this sense. Accordingly, they seem to have escaped the fate of more peripheral classes in Middle English; nonetheless, they still have a higher probability of being lost than more central senses (cf. also Goldberg 1995; Colleman & De Clerck 2008 on the marginalisation of *forgive* and *envy* in PDE).

4.2.4. Results D: fixation of word order

4.2.4.1. Fixation of object order

In the following sections, potential changes in the ordering of objects in the DOC and POCs will be investigated. Based on the literature on this topic, what we expect to see in this regard is a fixation of the constituent order in the course of the period: while the DOC is predicted to invariantly show [REC-TH] order at the end of the period, the POCs are assumed to move towards stricter [TH-REC] order.

Starting with the DOC, a first more general observation that can be made is that the fraction of tokens with directly adjoining objects (i.e. with no intervening material, labelled 'combined' in Figure 31) in the total of DOC tokens greatly increases over time. While these tokens constitute about 50 per cent in M1, this number rises to over 85 per cent in M4.[151] This also of course means that in all sub-periods, there is a considerable number of tokens that does not show the two objects directly following each other, which are not explicitly represented in the figure (explaining also why the percentages shown do not add up to a hundred).

The curve for objects directly following each other is closely mirrored by the curve of IO-DO (REC-TH) orders. Again, there is a sharp growth in proportional frequency over the entire period (M1 to M4). Although the apparent drop between M1 and M2 is non-significant, a significant increase still only takes place from M2 onwards.[152]

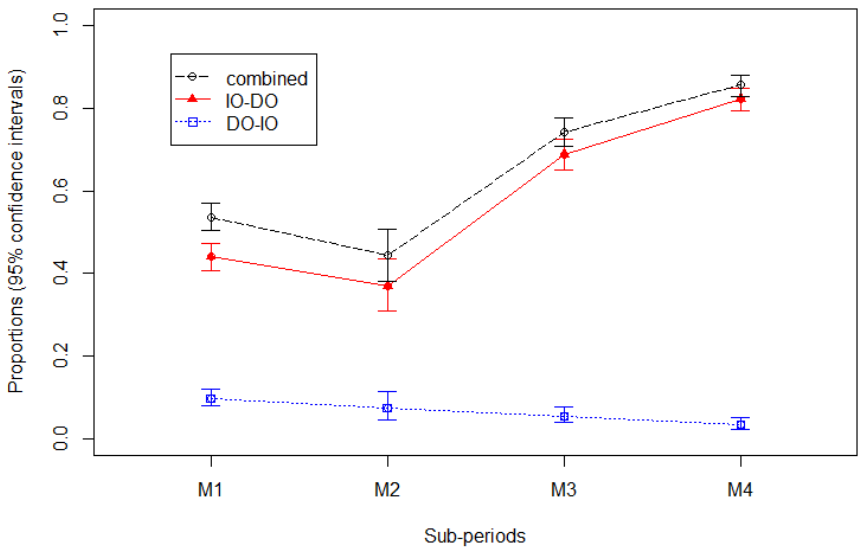

Figure 31 Proportional distribution of IO-DO (REC-TH) vs. DO-IO (TH-REC) in total of DOC

[151] *combined:* M1-M4: $p < 0.001$, $\varphi \approx 0.3$; M1-M2: $p < 0.05$, $\varphi < 0.1$; M2-M3: $p < 0.001$, $\varphi \approx 0.3$; M3-M4: $p < 0.001$, $\varphi \approx 0.1$.

[152] *IO-DO (REC-TH):* M1-M4: $p < 0.001$, $\varphi \approx 0.4$; M1-M2: $p > 0.05$; M2-M3: $p < 0.001$, $\varphi \approx 0.3$; M3-M4: $p < 0.001$, $\varphi \approx 0.2$.

DOCs with an object order that is highly marked from a PDE perspective, that is, those DOCs where the theme precedes the recipient (DO-IO/ TH-REC), are infrequent already at the earliest stages, and become even rarer towards the end of the period. While [TH-REC] orders still account for almost ten per cent of DOC tokens in M1, they fall to about three per cent in M1. This overall change is significant, although at an admittedly low effect size (M1-M4: $p < 0.001$, $\varphi \approx 0.1$).[153]

The predominance of [REC-TH] order is even more striking if only DOCs with directly adjacent, post-verbal objects are taken into account: within this subset, [REC-TH] is significantly more frequent than the opposite order in all periods (M1/M2/M3/M4: $p < 0.001$; $V > 0.5$). This discrepancy furthermore becomes even larger in the course of the period (M1-M4: $p < 0.001$, $\varphi \approx 0.2$; M1-M2: $p > 0.05$; M2-M3: $p < 0.05$, $\varphi \approx 0.1$; M3-M4: $p > 0.05$).

These results more or less overlap with McFadden's results as presented above (3.1.2.2). While the proportions in the individual periods diverge slightly – for example, the fraction of [REC-TH] orders is slightly lower for M1 in his study (65 per cent versus approx. 80) – both accounts conclude that in DOCs with directly adjacent objects, [REC-TH] order was near-categorical in the later periods. At this point, only rare examples of the reverse order are found (cf. McFadden 2002: 113). Nevertheless, the main changes appear to have taken place comparatively late in the period, i.e. from M2 onwards.

Comparing these figures to the proportional distribution of the different object orders in the POC, a very distinct picture presents itself (Figure 32). In general, POCs with objects in direct sequence start out as more frequent than DOCs of this kind in M1 (ca. 50 per cent versus 65 per cent). Instead of experiencing a significant rise like in the case of the DOC, however, these POCs remain at roughly the same level throughout the whole period.[154]

[153] *DO-IO (TH-REC):* M1-M4: $p < 0.001$, $\varphi \approx 0.1$; M1-M2/M2-M3/M3-M4: $p > 0.05$.
[154] *combined:* M1-M2: $p < 0.05$, $\varphi < 0.1$; M1-M4/M2-M3/M3-M4: $p > 0.05$.

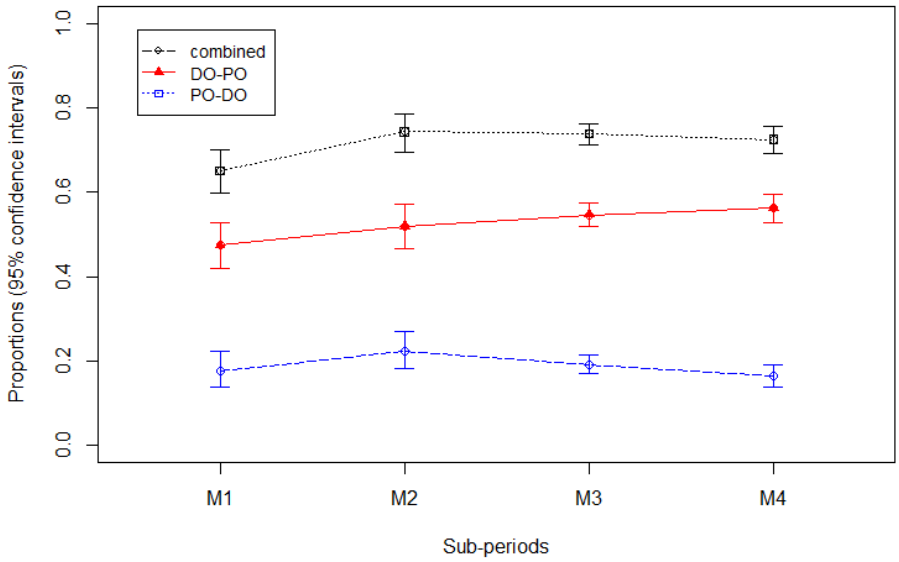

Figure 32 Proportional distribution of DO-PO (TH-REC) vs. PO-DO (REC-TH) in total of POC

Similarly, while there is a significant increase of the canonical order DO-PO (TH-REC) also in the case of POCs, this change is much weaker (with a very small effect size < 0.1). It is also only present if the whole period is taken into account (meaning there are no significant changes between the individual periods).[155] The reversed order, i.e. [REC-TH], is less frequent than [TH-REC] in all periods, and there is no significant development over time (M1-M4/M1-M2/M2-M3/M3-M4: $p > 0.05$). The same distribution is seen if the results are restricted to only those POCs where the objects are in direct sequence.

The absence of change as observed in POCs is evident in the sub-type of *to*-POCs as well. In fact, it is even more striking in this case. In contrast to the POC, where we at least see some change in the proportional distribution of the canonical order, this does not happen with the *to*-POC (see Figure 33).[156] The fraction of [TH-REC] stably remains higher than that of the opposite order [REC-TH]; this lack of change is also seen if the distribution of orders within the limited set of *to*-POCs with directly adjacent objects is investigated.[157]

[155] *DO-PO (TH-REC):* M1-M4: $p < 0.05$, $\varphi < 0.1$; M1-M2/M2-M3/M3-M4: $p > 0.05$.
[156] *DO-PO (TH-REC) /PO-DO (REC-TH) /combined*: M1-M4/M1-M2/M2-M3/M3-M4: $p > 0.05$.
[157] M1-M4/M1-M2/M2-M3/M3-M4: $p > 0.05$; M1: $p < 0.001$, $V > 0.5$; M2: $p < 0.001$, $V > 0.5$; M3: $p < 0.001$, $V \approx 0.4$; M1: $p < 0.001$, $V > 0.5$.

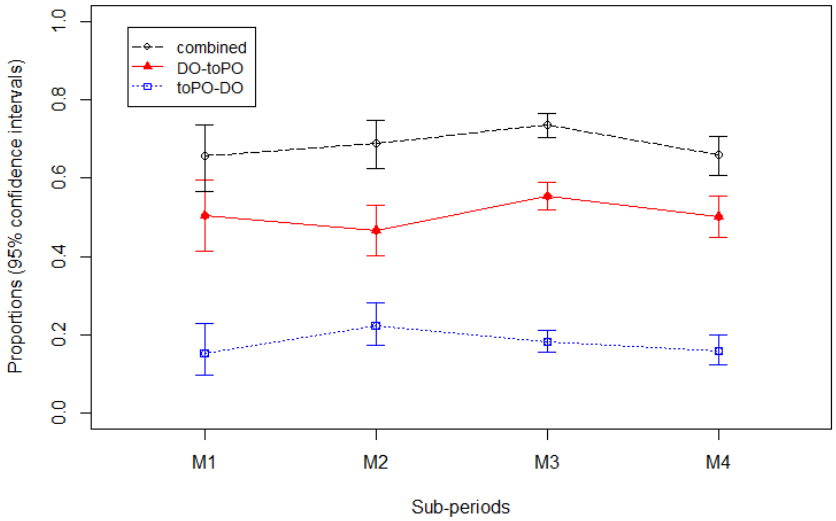

Figure 33 Proportional distribution of DO-*to*PO (TH-REC) vs. *to*PO-DO (REC-TH) in total of *to*-POC

Again, these results are roughly in line with McFadden (2002: 113), although the deviations between figures in the individual periods are somewhat larger in his data. Even so, both McFadden's and my results indicate that the canonical [TH-REC] order was notably more frequent than the opposite sequence in Middle English, and no major drops or upsurges in the respective frequencies occurred over the course of the period.

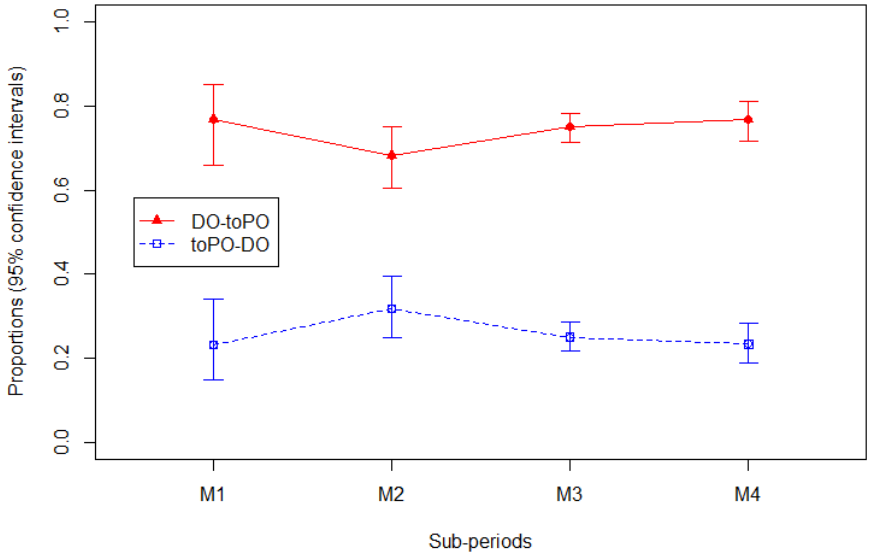

Figure 34 Proportional distribution of *DO-toPO* order in total of *to*-POC with directly adjacent objects

The implications of the remarkable differences in behaviour between the two constructions (DOC and POC) as well as between POC and *to*-POC will be discussed in detail in Section (6) below. I will here argue that the strong preference of the prepositional patterns for clause-late position, i.e. [TH-*prep*REC] order already in early Middle English drove the DOC to resort to the complementary order

once the constructions entered into a closer relationship. With the association between the DOC and the *to*-POC becoming stronger, and the dative alternation coming into full bloom towards the end of the period, the prepositional variant would then eventually have fully committed to its preferred order.

A further interesting issue in regard to both clause constituent and object order, and relating also to the issue of the degree of grammaticalisation of POCs, is the question whether these patterns are syntactically more restricted than other clauses involving PPs, i.e. whether the position of PP-RECs is fixed to a greater extent than other prepositional phrases. In order to investigate such differences, POCs were compared to all other clauses featuring a verb, a NP object and a PP (where neither constituent is governed by the other) that could be found in the PPCME2. Such clauses include, for example, constructions with *to* (*from*) denoting a locative, inanimate GOAL (ORIGIN/SOURCE) rather than a recipient-like argument, but also other adverbials, e.g. of location (97a), time (97b) or manner.

(97) a. Feole iworded mon […] ne schal neauer *leaden* richt lif$_{\text{NP-TH}}$ **on eorðe**$_{\text{PP}}$
'A loquacious man shall never lead a good life on earth'
(CMANCRIW-1,II.63.652; M1)

b. 3e *mu3en seggen* hit$_{\text{NP-TH}}$ **biforen ant efter vchtsong**$_{\text{PP}}$
'You have to say it before and after matins'
(CMANCRIW-1,I.58.171; M1)

All PP-clauses were categorised into three groups according to the position of the PP, namely 'initial' (PP-NP-V/ PP-V-NP), 'medial' (V-PP-NP/NP-PP-V) or 'final' (V-NP-PP/ NP-V-PP). Regarding non-POC clauses**,** the results presented in Figure 35 suggest that there is an increase of final PPs over time. This change occurs most notably between M1 and M2, after which there is a slight decrease again. Nevertheless, the overall change (M1-M4) is significant. Both medial and initial PPs decrease over time: while the former account for about 15 per cent of tokens in M1, this number drops to below ten per cent in the course to M4.[158] The latter is slightly more frequent at all times, taking up a fraction of between 20 (M1) and 15 per cent (M4). Comparing these results to Bech's (2001) study on word order in Old and Middle English as referred to above (3.1.4.1), the same trend away from intermediate position of PPs is also found in NP-PP-bearing clauses. In fact, this is supported by the development of both 'initial' and 'medial' position in our case. While clause-intial position, i.e. position before the subject and verb was not tested in this study, the results nevertheless seem to indicate a movement of the PP to clause-peripheral position, as subject, verb, and object form an increasingly tight association.

[158] *final*: M1-M4/ M1-M2/ M2-M3: $p<0.001$, $\varphi \approx 0.1$; M3-M4: $p>0.05$.
medial: M1-M4/ M1-M2: $p<0.001$, $\varphi \approx 0.1$; M2-M3: $p>0.05$; M3-M4: $p<0.01$, $\varphi < 0.1$.
initial: M1-M4/ M3-M4: $p<0.05$, $\varphi < 0.1$; M1-M2: $p<0.001$, $\varphi \approx 0.1$; M2-M3: $p<0.005$, $\varphi < 0.1$.

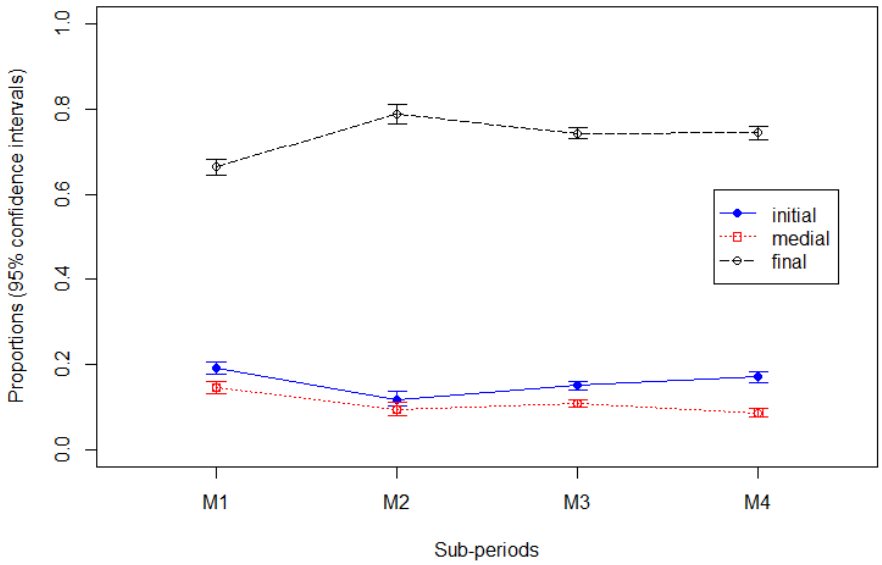

Figure 35 Proportional distribution of positions of PPs (excluding POs) in total of V/NP/PP combinations

Figure 36 shows the results for POCs; that is, in contrast to the results just presented, the PP in these clauses expresses an indirect object/REC-argument. As can be seen, PP-RECs are clearly most frequent in final position as well, accounting for 70 to 80 per cent of all tokens in each period. Interestingly, final position is actually even more frequent with POCs than with PP-patterns in general. Changes between the individual periods as well as between M1 and M4 are non-significant; the same goes for medial position PPs, which fluctuate between about 20 to 29 per cent of tokens. It is important to note that in this case 'medial' is very much restricted to [V-PP-NP] patterns, meaning that verb-final clauses are exceedingly rare in all periods. Medial position with POCs thus corresponds to 'PP-REC before NP-TH' order; this issue will be dealt with in more detail in the following section.

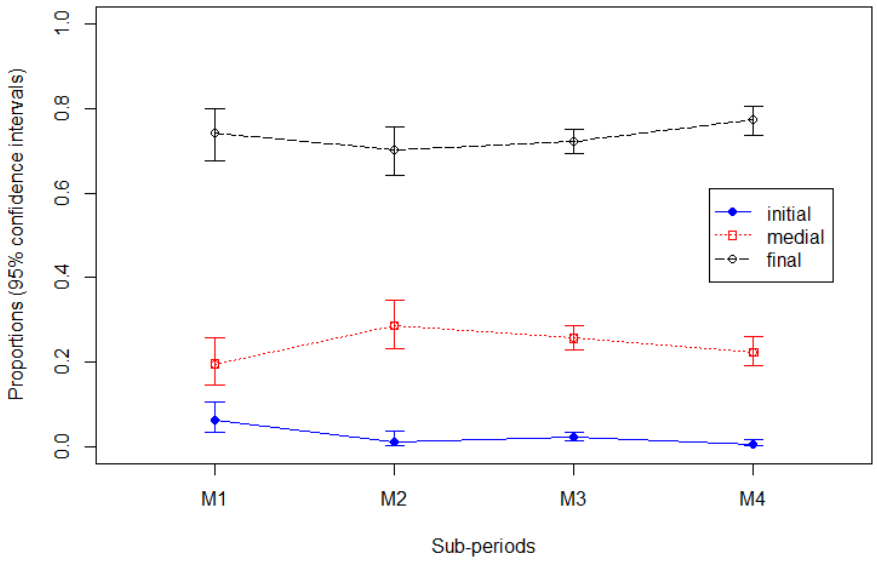

Figure 36 Proportional distribution of positions of POs in total of V/NP/PP combinations

Initial PP-RECs see a decrease over time: while they still constitute approximately six per cent of tokens in M1, their number is reduced to almost zero in the later periods.[159]

These results suggest that on the one hand, PP-RECs seem to strongly prefer a specific pattern, namely clause-final (of post-NP position) position, from early onwards. They also appear to be more restricted in this regard than other, more adjunct-like PP patterns. On the other hand, however, PP-RECs do not follow the overall trend towards clause-peripheral position in that they retain the option of occurring medially between the verb and the NP-theme, i.e. in a [*prep*REC-TH] pattern. The prepositional RECs can therefore be assumed to maintain a certain flexibility in their ordering in relation to the nominal theme argument, which might have had a positive influence on their success against the more synthetic DOCs.

4.2.4.2. Fixation of SVO order

As was discussed at length above, the fact that the English language experienced a fixation of SVO order at some point in its history can hardly be doubted, and a large body of literature has dealt with the issue in detail. This section does not aim to contribute to this more general discussion as such, but presents findings on the regularisation of word order in ditransitive clauses only, in order to find out whether there are any differences between the DOC and (*to*-)POC in this regard as well.

Since non-finite clauses, as well as subject-less clauses were included in the study, the following graphs distinguish between V-OBJ orders and S-V-OBJ orders. 'V-OBJ' here means that the verb (directly) precedes both of the objects. The order of the objects themselves is not taken into account, what matters is only that both objects occur in post-verbal position and in direct sequence. Likewise, 'S-V-OBJ' exclusively refers to those tokens in which the subject immediately precedes the verb, which immediately precedes both objects.

Focussing first on the DOC, Figure 37 indicates that with this construction, the canonical orders rocket between M1 and M4, almost doubling in percentages. The main locus of change is between M2 and M4; before this, there is little development. As expected, the change is less pronounced when the subject is included: V-OBJ orders are almost twice as frequent (proportionally) than S-V-OBJ orders in all sub-periods.[160] As already mentioned, this does not suggest, however, that SVO orders in general were less frequent than VO orders, but only reflects the fact that not all clauses included in the dataset featured an overt subject.

[159] *final*: M1-M4/ M1-M2/ M2-M3: $p>0.05$; M3-M4: $p<0.05$; $\varphi < 0.1$.
medial: M1-M4/ M2-M3/M3-M$: $p>0.05$; M1-M2: $p<0.05$, $\varphi \approx 0.1$.
initial: M1-M4: $p<0.001$, $\varphi \approx 0.2$; M1-M2: $p<0.01$, $\varphi < 0.1$; M2-M3: $p>0.05$; M3-M4: $p<0.05$ $\varphi < 0.1$.

[160] **DOC:**
V-OBJ: M1-M4: $p < 0.001$, $\varphi \approx 0.4$; M1-M2: $p > 0.05$; M2-M3: $p < 0.001$, $\varphi \approx 0.3$; M3-M4: $p < 0.001$, $\varphi \approx 0.1$.
S-V-OBJ: M1-M4: $p < 0.001$, $\varphi \approx 0.3$; M1-M2: $p > 0.05$; M2-M3: $p < 0.001$, $\varphi \approx 0.2$; M3-M4: $p < 0.001$, $\varphi \approx 0.1$.

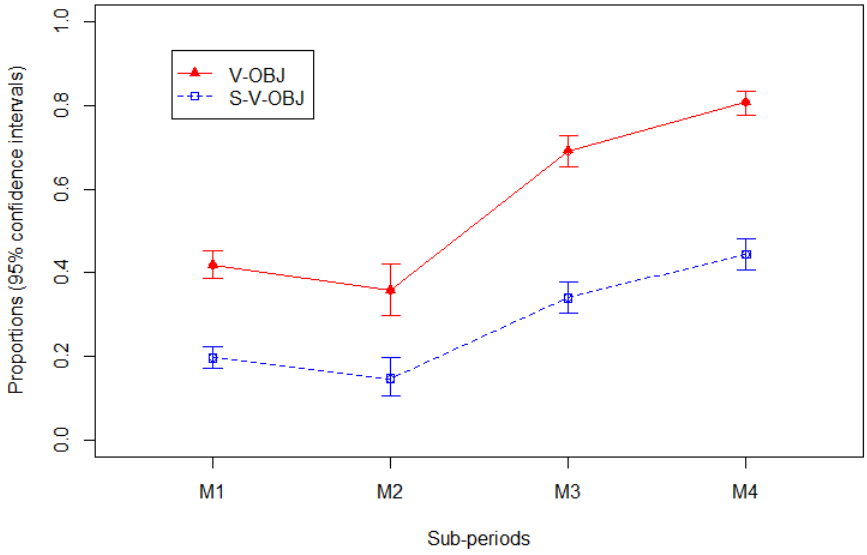

Figure 37 Proportional distribution of (S-)V-OBJ in total of DOC[161]

In contrast to the DOC, which sees an increase of SVO in the later periods, the change concerning SVO in the POC is concentrated in the earlier stages of Middle English (Figure 38).[162] The increase is furthermore slower, or rather, less sharp than in the case of the DOC. While V-OBJ orders do not significantly rise in (relative) frequency between M2 and M4, S-V-OBJ does see a significant increase in the very last stage; nevertheless, the effect size is very low ($\varphi < 0.1$).

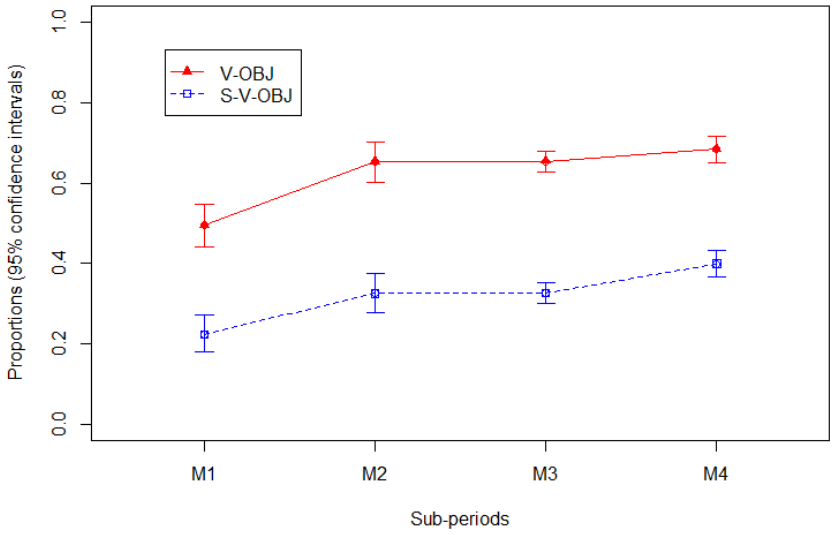

Figure 38 Proportional distribution of (S-)V-OBJ in total of POCs

[161]The figures here show the percentage of V-OBJ (i.e. V-REC-TH/V-TH-REC without intervening material) in the total of constructional tokens (e.g. in the total of DOC). The figures exclude tokens with sentence braces, i.e. the figures only represent tokens in which the auxiliary directly preceded the non-finite verb form.

[162]**POC:**

V-OBJ: M1-M4: $p < 0.001$, $\varphi \approx 0.2$; M1-M2: $p < 0.001$, $\varphi \approx 0.2$; M2-M3: $p > 0.05$; M3-M4: $p > 0.05$.

S-V-OBJ: M1-M4: $p < 0.001$, $\varphi \approx 0.2$; M1-M2: $p < 0.01$, $\varphi \approx 0.1$; M2-M3: $p > 0.05$; M3-M4: $p < 0.001$, $\varphi \approx 0.1$.

If only *(un)to*-POCs are taken into account, the developments seen in POCs in general are paralleled, except that they appear to be even more pronounced in the beginning (Figure 39). Moreover, the fractions of canonical VO and SVO orders are higher in M4 with *(un)to*-POCs than with POCs overall.[163]

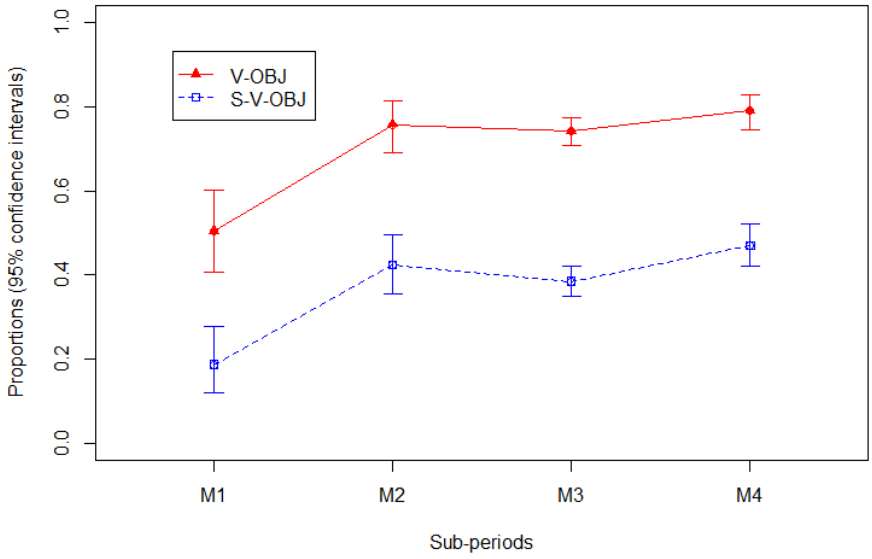

Figure 39 Proportional distribution of (S-)V-OBJ in total of *(un)to*-POC

Based on these results, it thus seems clear that the establishment of word order conventions as present in PDE largely took place in Middle English, at the end of which the canonical position of the verb in relation to the objects, as well as the place of the subject (if present) was essentially fixed. Nevertheless, it is important to note that there are striking differences between the DOC and the POC in that the regularisation of the system followed separate pathways. While SVO seems to be comparatively well established with the (*to*-)POC at an early stage, the DOC is still more flexible at the beginning. In the course of the period, the DOC then sees a rapid move towards strict SVO; a less sharp but still relatively great increase of this order takes place with the *to*-POC. The change is slowest and weakest with the POC. I will argue below that the more pronounced change seen with the DOC might be connected to the greater need to distinguish the similarly topical agent and recipient arguments on the basis of word order once case marking disappeared with this construction. The differences between *to*-POCs and POCs in general are in turn assumed to result from the increasingly close association between this particular POC type and the DOC in later times. That is, I will below assess the hypothesis that the establishment of the dative alternation drove its members to align to each other also in terms of clausal word order.

[163] ***(un)to*-POC:**
V-OBJ: M1-M4: $p < 0.001$, $\varphi \approx 0.3$; M1-M2: $p < 0.001$, $\varphi \approx 0.3$; M2-M3: $p > 0.05$; M3-M4: $p > 0.05$.
S-V-OBJ: M1-M4: $p < 0.001$, $\varphi \approx 0.2$; M1-M2: $p < 0.001$, $\varphi \approx 0.2$; M2-M3: $p > 0.05$; M3-M4: $p < 0.01$, $\varphi \approx 0.1$.

4.2.5. Results E: correlations between the changes

As discussed above (3.2), the different changes investigated in the preceding sections have frequently been claimed to be correlated and also causally related in various ways. The results of the present corpus study strongly corroborate a correlation between the developments: significant changes took place in regard to all aspects within the examined period. More specifically, it has been shown that the ambiguity of case marking increased within Middle English, that prepositional constructions came to play a greater role in the system of semantic role marking, that the meaning of the double object construction was narrowed due to the loss of certain sub-senses, and finally, that constituent order in ditransitive clauses became more rigid. At the same time, there seem to have been slight differences in timing of the individual changes. Ambiguity of case marking was already very high at the beginning of the period, suggesting that the demise of the morphological case system was comparatively advanced at this point. The rise of prepositional alternatives and the establishment of the dative alternation, in contrast, is clearly a Middle English development, meaning that the main changes took place within this period. This holds true for the dative alternation proper, with the distribution of the *to*-POC in relation to the DOC changing significantly throughout the period, until in late Middle English a stable state which persists to this day is reached. However, also in other cases such as the defeat of the DOC in favour of the POC with verbs of dispossession or pure benefaction/malefaction, the crucial changes occurred within Middle English. This change is strongly correlated with the semantic specialisation of the DOC: those verb classes which show an increasing preference for prepositional patterns are the same that are progressively ousted from the DOC. Again, this change seems to take place mostly within the confines of the time span covered by the Middle English corpus. Finally, word order fixation is evidently a quite complex phenomenon. In general, this change can be located at a slightly later point in time than the other developments. Although certain tendencies are clearly already seen at earlier stages, some flexibility in ordering both in regard to the clause level and the relative position in the objects is retained even in late Middle English.

In order to potentially provide further support for the assumption of correlations between the changes, I conducted hierarchical agglomerative cluster analyses on various aspects of the data. This tool, as mentioned above, allows its user to check whether texts with similar features (such as a period of composition/manuscript, or similar degree of case marking salience) cluster together in regard to other variables (e.g. the proportional distribution of DOC and POC, or the extent of word order restrictions). Figure 40 and Figure 41 show the outcome of such a hierarchical agglomerative cluster analysis (HCA) with the proportion of DOC versus POC and *to*-POC, respectively, as the main variable. Two other variables, namely sub-period of the text (1-4), and presence or prominence of case marking, are included as labels after the abbreviated text names in the figures. As to the latter, 'imp' marks a text as case-impoverished, while 'rich' identifies texts still rich in case-marking (featuring

comparatively unambiguous case markers), and texts labelled 'NA' represent an intermediate stage. This classification of texts was taken over from De Cuypere (PC). The red boxes in the figures distinguish the four main clusters of texts.

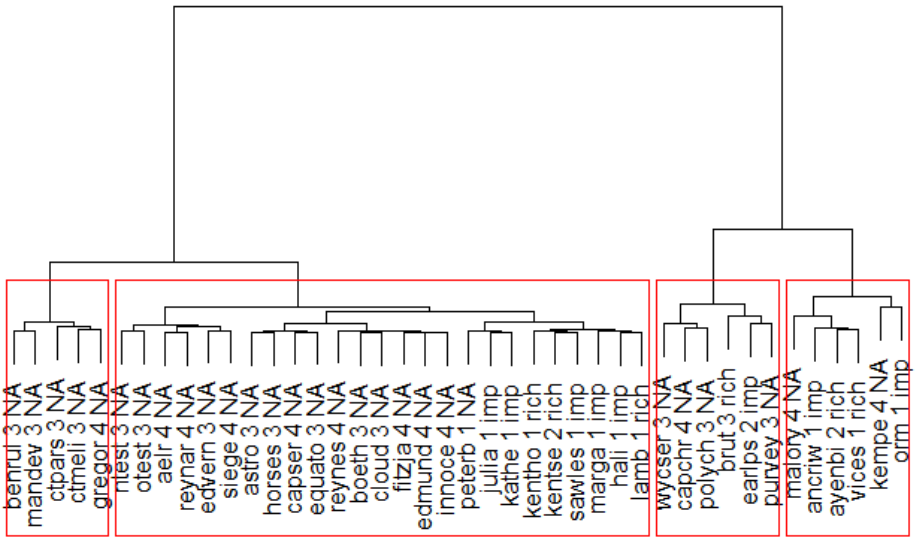

Figure 40 Hierarchical agglomerative cluster analysis (HCA) of distribution of DOC and POC in individual texts (marked according to case marking salience)

As can be seen, no entirely clear conclusions can unfortunately be drawn from these analyses, since the relative proportion of prepositional patterns does not systematically correlate with case marking salience. For example, while the left-most box in Figure 40 includes texts very similar in degree of case marking ambiguity (NA), such intermediate texts also cluster together with case-rich and case-impoverished texts (cf. e.g. the right-most box in the same figure).

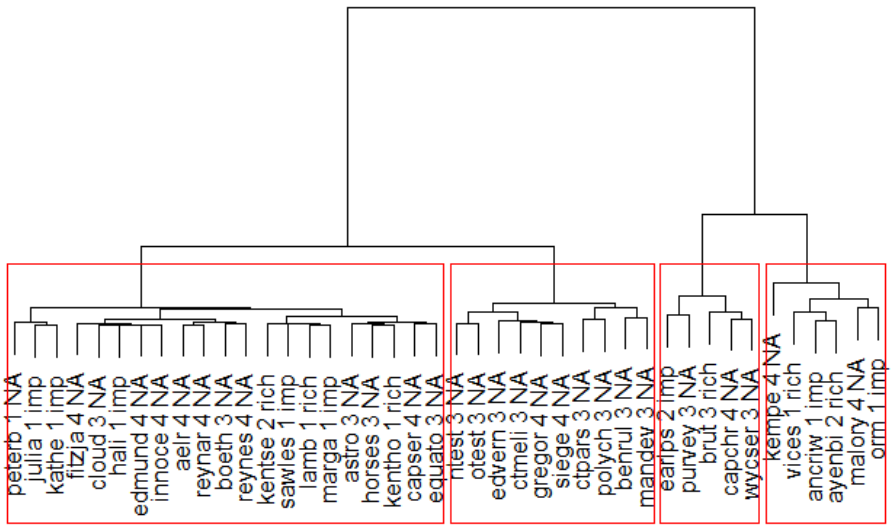

Figure 41 Hierarchical agglomerative cluster analysis (HCA) of distribution of DOC and *to*-POC (alternating) in individual texts (marked according to case marking salience)

Similar results were obtained by HCAs with other variables. Since they were all rather inconclusive, however, the discussion below will be largely based on the correlations indicated by the basic frequency lists as presented above.

In sum, the temporal sequence of changes affecting ditransitive verbs and their complementation patterns in the history of English that I tentatively propose here is the following: loss of case marking is earliest, followed by the rise in prepositional ditransitives and the semantic narrowing of the DOC, and last, the increasing rigidity in constituent order. However, it is evident that this proposal is simplified to a great extent. I furthermore do not take this correlation to always suggest a straightforward causal impact of one change on the following one(s). Instead, I will below argue for a co-evolutionary scenario, in which the various constructions and sub-constructions (most importantly the DOC and the *to*-POC) gradually and continuously adapted to each other. A micro-change in one construction could then trigger a micro-change in the other, which would in turn cause the first construction to respond, and so on. Furthermore, the final discussion will also draw on findings of an evolutionary game theoretic approach to the history of ditransitives (cf. Chapter 5.2). It will be shown that the use of such innovative mathematical and computational methods can be of great benefit in testing specific hypotheses about causality in language change. In our case, these results are expected to supplement the assumptions about temporal correlation between the changes with ideas about the causal relationships involved.

4.2.6. Summary of results

Summing up the results as presented in the preceding sections, there are several (basic) conclusions we can draw: first, the loss of case marking seems to have been highly advanced already by early Middle English, meaning that ambiguity concerning the semantic roles in the case of ditransitives was likely resolved on the basis of context and animacy asymmetries rather than morphological clues. This ambiguity furthermore increased over the course of the period, and inflection-less DOCs became more frequent.

Second, within the period of Middle English, we see a rise of the prepositional competitors; the main locus of change in this case appears to be the transition from M1 to M2. Very importantly, though, this increase of POCs does not lead to an ousting of the DOC, but the trend is reserved towards the end of the period, with a situation of 'sharing the workload' being established by M4. Even more conspicuous is the fact that if we restrict the prepositional paraphrases to those including *to*, the DOC overtakes its alternative construction again after some time, which results in a stable distribution with the DOC as the strong variant and the *to*-POC as the weaker variant of the alternation. This distribution is still found in the dative alternation today.

As has been shown, these broader results can also be broken down to the level of individual verbs and verb classes, which vary in their behaviour regarding their preferences for either one or the other construction (DOC vs. POC). These verb classes essentially fall into three groups. On the one hand, there are verb classes such as transfer and transfer-related verbs, which more or less directly reflect the more general development just described – while in the beginning, the DOC is clearly more frequent, it decreases in proportional frequency at the expense of the POC in the course of the period. In the end, however, the DOC gains in strength again, and the tokens are more or less equally distributed between the two constructions. On the other hand, verb classes such as dispossession verbs show a slightly distinct behaviour. Despite the DOC similarly being the more frequent construction in the earliest period, and the POC rising from M1-M2 onwards, the DOC does not recover. Instead, it concedes to the POC, which is the only option available to the verbs, i.e. becomes almost categorical, by M4. The last group is then markedly different in that the POC is the preferred variant in all sub-periods; furthermore, there typically is little to no change in the course of the period. Among the verb classes included in this group are mental/attitudinal verbs as well as verbs of reversed transfer. Concerning the specific POC-types involved, the three groups differ in behaviour as well: while the first two groups have, or develop clear associations with particular prepositions (e.g. *to* in the case of transfer verbs, and *from* in the case of verbs of dispossession) in the course of the period, the latter group is not systematic, but the verbs and verb classes select for various POC-types without clear systematicity and development.

Third, it has been found that a reduction in the range of verb classes associated with the DOC, i.e. a narrowing of the construction's semantics, can indeed be witnessed. Importantly, the findings on this issue correlate with what has been shown concerning the competition between the DOC and POC in specific verb classes. Verb classes which increase in proportional frequency in the DOC, such as transfer(-related) verbs, correspond to the first group mentioned above (DOC and POC compete at first, but arrive at a stable equilibrium in M4). Other verb classes are increasingly marginalised from the DOC (e.g. verbs of dispossession). In these groups, the POC then takes over. Verb classes of the mixed type, i.e. verb classes which show a predilection for the POC in all periods, but see no change in the course of the period, accordingly only account for a relatively low fraction of DOC tokens. However, they remain present in this constructions at all times.

Regarding the development of object orders, and the establishment of canonical orders for both the DOC (REC-TH) and the *to*-POC (TH-REC), it is interesting to note that the constructions follow remarkably different pathways: in the DOC, tokens with the regular order greatly increase from M2 onwards, while those with the reverse order (which are significantly less frequent already in the beginning) decrease over time. In the POC, in contrast, the canonical order [TH-REC] starts out at a higher level than in the case of the DOCs, but only slightly grows over the course of the period. Even

less change, or in fact no change at all, is seen in the *to*-POC. Here, the prevailing order is [TH-REC] in all periods.

As to word order in the ditransitive clause, the data indicate that there is a clear increase of SVO orders over the course of the period. This means that both in regard to the order of the objects, and the order of clause constituents, the system is greatly regularised within Middle English. However, the constructions again differ quite substantially in their behaviour in this context – first, they diverge in regard to the fraction of SVO orders in the beginning of the period, with the figures being higher with the POC and significantly lower with the DOC. Second, between M1 and M4 SVO orders only slowly rise in the case of the POC, whereas there is a greater increase with the *to*-POC, and an even more rapid and sharp rise with the DOC. In M4, the fraction of SVO in the total of POCs is therefore slightly lower than in the other two constructions.

What these findings suggest is that the (*to*-)POC shows a stronger tendency for the PP-REC to be placed at the end of the clause, as well as a stronger tendency towards fixed SVO from the very beginning of the period onwards. At the same time, however, the (*to*-)POC retains a large amount of flexibility in that alternative constituent orders are still available even at the latest stage. The DOC exhibits a rather different behaviour; while word order is less rigid in this construction in early Middle English still, the fixation of the clause constituents to certain positions, as well as the fixation of the canonical order [REC-TH], proceeds rapidly from M2 onwards, until the standard orders are nearly categorical in M4.

Finally, the relationship between these different changes has been assessed. In this context, it has been shown that the changes clearly correlate in that they all (at least to some extent) took place in Middle English. Nevertheless, slight temporal differences could be distinguished. The specific chain of events that has been suggested is as follows: case-marking → rise of prepositions and the dative alternation → semantic specialisation of the DOC → decrease of word order flexibility. The implications of these results will be discussed at length in (6.2) below. Before doing so, however, the second framework the present thesis works in will be introduced, including also the results of a second method applied, namely Evolutionary Game Theory. As already mentioned, the inclusion of an evolutionary linguistic perspective, and the application of innovative methodologies to problems in historical linguistics and language change is one of the major assets of this thesis.

PART II

5. Evolutionary linguistics and Evolutionary Game Theory

This chapter introduces the second main framework this thesis is grounded in, namely that of evolutionary linguistics. It also presents the second methodological approach taken in the thesis, i.e. evolutionary game theory. The application of this method to specific issues in historical linguistics builds on the assumption that language is an evolutionary system, and involves replicating units. These replicators, which in our case constitute constructions like the DOC or strategies like 'NP(CASE)' compete against variant constructions and stratgies, e.g. the *to*-POC or 'PP'. Their respective success is determined by a range of cognitive, social or systemic factors. While competition may lead to the ousting of a less successful variant, the replicators can also form allliances, and enter into mutualistic relationships in which they cooperate and benefit from each other's expression. In the specific evolutionary game presented in this chapter, I aim to investigate whether such a mixed strategy or construction cooperation plausibly emerged in the history of English recipient marking. That is, I attempt to investigate whether under universal pragmatic constraints such as the focus-last principle (focus elements like discourse-new, non-topical recipients typically being placed late in the clause), changes in the system-internal constraints of a language (e.g. case loss or increasing word order rigidity) can trigger the establishment of constructional/strategic mutualism.

The main reason for taking an evolutionary perspective in this thesis is that it provides a better explanatory basis for addressing questions concerning language change in general, and particular changes in the history of a language. Applying an evolutionary approach means taking a more analytic instead of hermeneutic approach, and allows us to investigate possible motivations for historical changes in a very systematic and more enlightening way.

The chapter is structured as follows: first, I will outline the framework of evolutionary linguistics in some more detail (5.1). Starting with a brief introduction to the field and its history (5.1.1), I will then comment on the main implications of viewing language as a cultural evolutionary system, and language change as reflecting natural selection of linguistic replicators (5.1.2). This includes comments on the precise nature of linguistic replicators and their material basis, the specifics of the replicating mechanism, as well as a discussion of (the emergence of) variation, competition and selection in language. All of these issues are to some extent debated; therefore, the chapter will take care to spell out the particular assumptions this thesis follows.

5.1. Evolutionary linguistics

5.1.1. Introduction and history of the field

Most basically, evolutionary linguistics, as the term already suggests, aims to investigate correspondences between evolution in the biological world and language. Although seemingly a rather

recent field, the idea of a relationship or at least a similarity between biological and cultural/linguistic systems has been around for quite some time already. More specifically, it can be traced to the 19th century, when evolutionary biology emerged as a theory of life – above all with Darwin's highly influential publication *On the origin of species* (1859) – and modern (historical) linguistics as an academic discipline was established (cf. Rosenbach 2008: 24-25; Croft 2013a: 1). A clear example of analogies being drawn between biological and linguistic evolution can be found in Schleicher's (1863) discussion of 'family trees' of languages, which highlights similarities between languages and organisms, and in particular between linguistic diversification and biological speciation. Although representing language families as branching trees, that is, grouping languages together based on shared, common inherited features, is still very much standard practice in historical linguistics, these early endeavours to integrate linguistics and evolutionary theory were largely misleading and rather problematic (for a more detailed analysis, see e.g. Sampson 1980; Lass 1990; McMahon 1994; Ritt 1995, 2004). For this and other reasons, evolutionary approaches did not play a major role in the development of linguistics in much of the past century. Quite on the contrary, evolution, as McMahon (1994: 314) claims, "ha[d] become a 'dirty word' in modern linguistic theory".

Things appear to have turned within the last decades, though, with evolutionary models being more frequently applied both in the social sciences in general, and in linguistics in particular (Croft 2006b: 91). As it seems, interest in the idea of connecting evolutionary (biological) theory and linguistics as well as other disciplines has increased considerably since the 1980s. Ritt (2004: 57) identifies two main reasons for this development: first, writings by evolutionary biologists such as Richard Dawkins (1989[2006], 1982, 1986, and others) or Stephen J. Gould (e.g. 1983, 1989) have made evolutionary theory accessible to a larger audience. Second, and possibly resulting from this, the 'argumentative core' of evolutionary biology came to be transferred to a range of different areas such as philosophy, mathematics, medicine, economy, sociology, history of science, as well as cognitive science (Ritt 2004: 57). In many works going in that direction, explicit attempts to extend evolutionary ideas beyond the domain of biology and, in particular, to language, can be found; see, for example, Cavalli-Sforza & Feldman's (1973) or Lumsden & Wilson's (1981) discussion of the role of cultural evolution besides biological evolution (also Hull 1988; Dawkins 1989[2006]; Dennett 1990, 1993, 1995; Plotkin 1994; Cziko 1995). Further crucial developments within the last thirty years include the establishment of important research programs into complexity and complex adaptive systems such as the Santa Fe Institute (http://www.santafe.edu/), founded in the 1980s. There, researchers such as Gell-Mann (cf. e.g. Hawkins & Gell-Mann 1992) continue to investigate the fundamental principles of evolutionary systems of all kinds and on all levels. This includes molecular systems, tissues, animal and human individuals, and systems of technology as well as economy and culture (Santa Fe Institute 2015). Some ten years after the foundation of the Santa Fe Institute, in 1996, the *Evolution of language*

conference (EVOLANG) was brought to life, a very influential and inter-disciplinary biennial meeting bringing together a large number of researchers working on aspects of evolutionary theory in connection to language. The same year also saw the first publication of the *Journal of Memetics*, an important research outlet for evolutionary accounts of cultural information transfer (cf. also Ritt 1995, 2004) .[164]

The broader research area of evolutionary linguistics is highly diverse, and subsumes a range of sub-disciplines. These are tied together by a shared interest in language and evolution, but are typically concerned with different ontological domains as well as different timescales, levels of analysis, and accordingly methods and tools (cf. Ritt 2013a; also Deacon 1997; Christiansen & Chater 2008; Kirby 2012). There are three main areas of investigation in evolutionary linguistics. First, and very prominently so, the origin of language itself, i.e. the evolution of the human linguistic capacity or language faculty, has been subject to discussion (cf. e.g. Pinker & Bloom 1990; Hauser, Chomsky & Fitch 2002; Jackendoff & Pinker 2005; Hurford 2007, 2012a, 2012b, 2014; Fitch 2010; McMahon & McMahon 2013, among many others).[165] A second way in which evolutionary ideas have been introduced to language concerns the diversification of language and the descent and spread of specific language families, issues which have recently begun to be approached with phylogenetic methods. These methods, as Dunn (2014: 190) points out, allow us "to test hypotheses about human dispersals, processes of cultural change, and the evolution of other linguistic subsystems" (see also Croft 2000: Ch.8).[166] While these two areas of evolutionary linguistics are not of immediate relevance to the present investigation, the third domain, namely historical language change or cultural evolution, clearly is. This area evidently differs markedly especially from the first one, since the modifications observed in the history of particular languages occur within a comparatively short time span, and were therefore most certainly not caused by genetic, i.e. biological, changes (Rosenbach 2008: 23; cf. also McMahon 2000: 154; Ritt 2004: 26).

Within the field of historical language change approached from an evolutionary viewpoint, there have again been two major strands: on the one hand, there have been attempts to transfer concepts from evolutionary biology to linguistics, acknowledging certain parallels between the evolving systems, yet treating these correspondences as little more than superficial analogies or metaphors (cf. Croft 2013a: 2; Kaźmierski 2015: 67-68). Examples of such metaphorical approaches include Blevins (2004),

[164]Hurford (2012b: 473) adds another reason for the growing popularity of research into the evolution of language, namely the "impressive empirical advances in relevant fields such as genetics, psychology of language, ethology (especially primatology), computer modelling, linguistics (especially language typology and some formal modelling) and neuroscience" that were made within the last decades.

[165]For further references see e.g. relevant contributions in *The Oxford handbook of language evolution* (Tallerman & Gibson 2012).

[166]Examples of such approaches are e.g. Dixon (1997), Nettle (1999), Atkinson & Gray (2005), as well as the large amount of publications by Michael Dunn (e.g. 2014), and others. For a short introduction to the issue, see Croft (2008: 224-230).

but also Lass (1980) and Mufwene (2001, 2008). Considering that there are considerable risks and problems involved in employing the 'biological metaphor' in this way, it is questionable whether there is any real use in doing so. A strictly Darwinian, generalised evolutionary approach to language change, by contrast, is of greater explanatory value, and therefore certainly desirable. What such an approach entails will be discussed in more detail in the sections following this one.

The enterprise of expanding ideas of evolutionary (biological) theory to other domains, including cultural systems, was taken up more rigourously from the late 1980s onwards. Influential researchers in this context include Dawkins (1989[2006]) and Hull (1988), as well as Dennett (1993, 1995, 1999), Plotkin (1994) and Cziko (1995). These and ensuing approaches, now typically subsumed under the cover-term of 'Generalised Darwinism' or 'Universal Darwinism', more specifically suggest that language is not subject to mechanisms of biological evolution. Instead, language systems, biological systems and many others, constitute manifestations of a more general, domain-unspecific phenomenon (cf. e.g. Lass 1990: 96; Ritt 2004: Ch.5; Rosenbach 2008: 25; Croft 2013a: 3).[167] In order for systems to be capable of evolution, or to qualify as evolutionary systems, the following crucial properties have to be present:

> there must be 'replicators', items 'heritable' in some medium (biological, cultural, whatever); variation, i.e. imperfect replication, must be possible; and there must be a selection process (what particular kind is unimportant) that biases survival in favour of some particular variant(s). (Lass 1997: 316; cf. also Dennett 1995: 343; Cziko 2000: 287; Ritt 2004: 91)

Although biological evolution is the most extensively studied and probably best understood example of a replicator system, it is therefore thought to be only one instance of evolution processes next to many others, including also e.g. vertebrate immune systems, economies, and human cognition. What follows from this is furthermore that the details of genetic, biological evolution might not be met by each and every evolutionary system; rather, we are concerned with those features that are shared by all of them (Cziko 2000: 287).[168]

In order to avoid the bias towards biological evolution inherent in labels such as 'Generalised Darwinism', evolutionary systems are now frequently approached in terms of complex adaptive systems theory, commonly abbreviated as CAS (cf. e.g. Hawkins & Gell-Mann 1992; Gell-Mann 1994; Lansing 2003; Solé et al. 2010; and any publications from researchers associated with the Santa Fe Institute). Most basically, complex adaptive systems are self-organising, and control is not

[167]A historical overview of literature on the correspondences between linguistic and biological evolution (among others), can be found in Atkinson & Gray (2005).

[168]It is precisely due to this argument that commonly discussed issues such as what corresponds to the biological phenotype, organism or species, etc. in language will not be given too much attention in this thesis. Although this debate has certainly been fruitful in some regards, and has led to more refined ideas about how language and language change can be approached from an evolutionary perspective, I believe it may also at times have caused people to digress from other, equally or possibly more relevant questions. See also McCrohon's (2012: 158-161) discussion of the relevance of the 'phenotype' concept to language.

concentrated in one point, but is distributed through the systems. The properties of CAS emerge through multiple and complex interactions between constituents (cf. Ritt 2004: 99-109; Frank & Gontier 2010: 37-39; Beckner et al. 2009: 15). Even though only some evolutionary accounts of language and language change explicitly adopt a CAS approach (see e.g. Beckner et al. 2009; Steels 2000, 2011b; Frank & Gontier 2010), the framework is easily compatible with most Generalised Darwinism accounts as well (e.g. Ritt 2004; Rosenbach 2008). In the present thesis, no difference is therefore made between the two approaches, but language is taken to represent an evolutionary, Darwinian, complex adaptive system. In the next sections, the main characteristics of language as such a system will be presented. Focussing first on general properties of language as an evolutionary system, I will then comment on some of the main areas of debate that arise in this context, and specify which positions this thesis takes.

5.1.2. Language as a cultural evolutionary system

Among the linguists that have in some way or the other taken an evolutionary approach to language and language change are Lass (1980, 1990, 1996, 1997, 2000, 2003), Keller (1990[1994]), McMahon (1994), Haspelmath (1999), Croft (2000, 2006a, 2006b, 2008, 2010, 2013a), Ritt (1995, 1996, 2004), furthermore Seiler (2006), Wedel (2006), Rosenbach (2008), Frank & Gontier (2010) and other contributions in Winters, Tissari & Allan (2010), Beckner et al. (2009), and McCrohon (2012), as well as the group around Luc Steels working in Fluid Construction Grammar (cf. e.g. Steels 2011a; van Trijp 2013; Wellens et al. 2013). The following discussion will be based mainly on Croft (2000, 2013a) and Ritt (2004), who to date provide the most extensive treatments of what it means to take an evolutionary approach to language change.[169] While the former is basically an elaborated application of Hull's (1988) *Generalised analysis of selection* (GAS) model to linguistic evolution, the latter builds on Dawkins' (1989[2006]) concepts of cultural replicators. As will be shown, the accounts differ quite substantially in regard to many fundamental issues, including the question which ontological domain linguistic constituents should be ascribed to (Ritt 2013a). Before diving into these issues, however, a quick assessment of whether language fulfils the basic requirements of evolutionary systems in the first place will be given.

5.1.2.1. General features of language as an evolutionary system

As seen above, the crucial conditions necessary for systems to qualify as 'evolutionary' are that they exhibit the following features:

(1) variation: there is continuing abundance of different elements

[169]Croft (2013a) is in fact the revised version of the second chapter of Croft (2000), available as a draft online from http://www.unm.edu/~wcroft/Papers/ELC2-Chap02.pdf , and due to be published as part of the second edition of Croft (2000) by the Oxford University Press.

(2) heredity or replication: the elements have the capacity to create copies or replicas of themselves
(3) differential 'fitness': the number of copies of an element that are created in a given time varies, depending on interactions between the features of that element and features of the environment in which it persists. (Dennett 1995: 343)

In a nutshell, the central ingredient of any theory of evolution, including biological change, but not restricted to it, is therefore the process of replication. By this process, an element is copied, or rather produces an as close as possible copy of itself. Since replication does not occur once, but is iterative, and cumulative, lineages of replicators are established. Change then takes place in two steps: first, variation is constantly generated by mutation, or 'altered replication'. That is, variation presupposes replication. Second, variants are selected for via particular mechanisms, meaning that natural selection causes 'differential fitness' and 'differential replication' of variants. Those variants (replicators) that are more adaptive in regard to certain environmental constraints or pressures will be more successful in replication, and thus possibly oust competing variants (Ritt 1995: 54; Croft 2000: 23, 2006b: 94, 2008: 221; Rosenbach 2008: 26).

Approaching language from this perspective, it appears to fulfil the necessary conditions for an evolutionary system quite obviously. Language is passed on, i.e. transmitted, from generation to generation, and thus in child language acquisition (a position that is typically held by generativists, e.g. Lightfoot 1999). In addition, however, language constituents also get transmitted through imitation in communication, that is, in language use among adult speakers (cf. e.g. Croft 2000; Ritt 2004; Rosenbach 2008).[170] By being transmitted, linguistic replicators form lineages (Croft 2013a: 5). Every time an instantiation of a DOC is used (e.g. a person uttering the request of *can you pass me the salt* at the dinner table), this particular construction is transmitted, and thereby establishes a lineage.

Furthermore, variation is abundant in language, manifest on three different levels: first-order variation, according to Croft (2006b: 98, 2012: 4-5), concerns intra-systemic variation. For example, individual phonemes can have different phonetic realisations in actual language use, and different words or constructions can express the same meaning (without any social values attached to them). Second-order variation, in contrast, is socially-significant variation. Typically, this is dealt with in sociolinguistic research, which investigates social values of particular variants, e.g. formal vs. informal pronunciations of a sound. Last, there is third-order, or cross-linguistic variation. This type of variation is a result of variation within a community of speakers together with the divergence of languages over an extended period of time (Croft 2012: 4).

[170]Rosenbach (2008: 51) points out, that is in this regard also "interesting to see how the old controversy between formal and functional approaches to language change on the question of where to assume the locus of change […] may become more 'relaxed' when taking an evolutionary approach to language (and change) […] all [such approaches] acknowledge change taking place within adult speakers in language usage as well as in the process of first language acquisition".

This thesis is clearly concerned mainly with first-order, intra-systemic, variation, since it investigates different constructions which are 'two ways of saying the same thing' (Labov 1972: 271). More specifically, the main and fundamental focus of this thesis is on the functionally near-equivalent members of the dative alternation, the double object construction and the *to*-POC, in Middle English. The two constructions therefore constitute replicator variants of each other. Other instances of variation that this thesis is concerned with include the availability of more than one case frame for the DOC in Old English as seen above: these case constructions, e.g. [DAT-ACC], [ACC-ACC] or [DAT-GEN] fulfil a very similar function and are therefore variants. Furthermore, the fact that particular verb classes occur with a range of different but (near-)synonymous prepositional paraphrases counts as variation in the system. For example, the *from*-POC and *of*-POC found with verbs of dispossession (*John stole a book from Mary*/ *John stole a book of Mary*) qualify as variants of each other. Second- and third-order variation, in contrast, are only dealt with in passing here – see e.g. the social dimension involved in the retention of [TH-REC] DOCs in certain regional dialects of British English, or the differences between Modern German and Present Day English regarding the semantic scope of the DOC.

Crucially, variants do not just exist, but the variants compete against each other for territory, which equals 'being expressed' or more generally 'being activated' (Ritt 1995: 54; Mesoudi, Whiten & Laland 2004: 4; Croft 2012: 6; also Ritt 2004, Hilpert 2013: 3). What this really means is that constituents that exist through being transmitted/replicated are critically dependent on the frequency with which they are instantiated. For them to count as existent or stable, this frequency needs to be above zero. It also implies that they need to be transmitted at least once before disappearing. In competition, what variant types then really compete for is the relative frequency of their instatiations among all instantiations of the superordinate type. Although it might be interesting to measure that frequency on the competence level, this is unfortunately not possible. What we therefore do instead is measure the relative frequency of textual attestations and either assume that it reflects representation on the competence level, or remain agnostic about this issue and decribe evolution on the textual level. This thesis, in taking a usage-based perspective on language use and representation, clearly opts for the former approach. The important thing here is that every constituent is at any time instantiated as a population of copies (tokens) – what changes in time is the size of the population. In the case of emergence, this size moves from zero to above zero, while in the case of loss, it changes from >0 to zero.

Drawing again on the example of the DOC and *to*-POC, the emergence of the latter in the history of English means that its population size grows above zero. The loss of the DOC with some verb classes, by contrast, means that the size of the DOC (dispossession) population falls to zero. Being variants of each other, the population size of one construction fundamentally depends on that of the other: the DOC and the *to*-POC are taken to compete against each other for relative frequency of instantiation

(among all instantiations of the superordinate type, i.e. among all instantiations of ditransitive constructions). Ways to establish or measure the relative frequency of the respective constructions, and thereby also find out about ways of competition resolution in these cases, is to investigate their frequency in text corpora. This is precisely what was done in Chapter (4) above.

Once variation is generated, and the variants compete against each other, selection takes place, with differential replication of the variants being caused by various selectional pressures (Rosenbach 2008: 32). This means that the success of the variants is determined by a range of environmental pressures, possibly including cognitive-physiological, social, and intra-systemic factors. Depending on how well a variant fares in respect to these pressures, it will be replicated more successfully/frequently, or less successfully/frequently than its competitor. A higher activation rate of one variant can then result in the complete loss of the other variant. This development can e.g. be observed in the ousting of the DOC in favour of POCs in the case of dispossesion verbs (**John stole Mary a book* vs. *John stole a book from Mary*). A further case in point is the move towards a single case construction of [DAT-ACC] at the expense of other constructions, or the loss of the dispossessive *of*-POC compared to the success of the dispossessive from-POC (**John stole a book of Mary* vs. *John stole a book from Mary*).

Importantly, however, antagonistic competition between variants and ousting of one variant is not the only option for interaction between variants (cf. Ritt 2004: 221-229). Rather, competition can also lead to mutualistic relationships, which are beneficial for both variants, i.e. represent "interaction[s] between organisms in which each participant experiences a gain in *fitness*" [original italics] (Moore & Cotner 2011: 277). Such cooperative, mutually beneficial associations are frequent in the biological world. For instance, yucca moths and yucca plants depend on each other for reproduction: on the one hand, the moths profit from the plants in that they lay their eggs in them, and the larvae can then feed from their seeds. On the other hand, the moths act as pollinators for the plants, meaning that there is reciprocal benefit in their relationship. Transferring this concept to linguistics is one of the major points of this thesis. That is, I propose that competition between constructional variants can lead to mutualistic cooperations between them. Typically, these cooperations are characterised by niche construction by the variants, meaning that the variants specialise to particular, complementary functions (cf. also Traugott & Trousdale 2013). Among the clearest examples of constructional cooperation with niche construction are, as I will argue, linguistic alternations.

In sum, the necessary conditions for language to qualify as an evolutionary system are clearly given, and an evolutionary approach to language and language change therefore appears to be justified. It is nevertheless evident on closer investigation that such an approach raises of number of essential questions, which are neither easy to answer nor agreed upon in the literature. Apart from

the question of what ontological domain linguistic replicators are attributed to, or which units we assume as replicators in language, the most striking, and most debated problems that have come up in the literature are the following (cf. also Ritt 2004: Ch.6; Rosenbach 2008: 27):

- What is the material basis of the replicators?
- What precisely are the mechanisms of linguistic replication?
- What precisely is the role of the speaker in this scenario?
- How does variation arise?
- How does selection proceed? What factors determine replicative success?

A discussion of these major issues, as well as the ways this thesis will deal with them are presented in the next sections.

5.1.2.2. Linguistic replicators and the replication process

The first of the questions mentioned in the previous section, namely what entities can be identified as linguistic replicators, is – although very basic – arguably also the most important one in approaching language from an evolutionary perspective. This is because it crucially determines whether an 'integrated evolutionary model of language and language change' is possible (Ritt 2004: 122). One of the first (and possibly most influential) contributions to this issue is Dawkins' monograph on 'selfish genes', in which the author famously coins the name of 'memes' for cultural replicators, an analogical formation to the biological 'gene' (1989[2006]: 192). These lineage-forming units of cultural transmission, as Dawkins specifies, necessarily exhibit the same general features as biological, and any other replicating entity: longevity, fecundity, and copying fidelity (1989[2006]: 194; cf. also Ritt 2004: 123; Croft 2013a: 8). However, Dawkin's original (1976) conception of memes is rather vague.[171] Instead of a rigorous definition, he offers a list of potential candidates for memes, such as "tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches" (Dawkins 1989[2006]: 192); as well as "[p]opular songs and stiletto heels […] Jewish religious laws" (Dawkins 1989[2006]: 194). Similarly, Dennett (1991: 201) argues that memes are "the smallest units that replicate themselves with reliability and fecundity", providing examples like wheels, wearing clothes, or calculus. The inherent ambiguity of such (quasi-)definitions lies in the fact that they comprise replicators of different ontological domains. That is, they involve *concepts*, i.e. mental, internal knowledge, such as 'ideas' or 'laws', *artifacts* (heels, wheels), as well as *behaviours* like building an arch or wearing clothes. The latter two constitute different types of physical, external manifestations of replicators (cf. McCrohon 2012: 153; Croft 2013a: 9). [172] On the other side, elements of culture are

[171]Admittedly, providing a clear definition of memes, upon which a theory of cultural evolution could be built, was not the primary aim of Dawkins. They were rather used "to illustrate the replicator centric theory of biological evolution he was arguing for at the time" (McCrohon 2012: 153; referring to Dawkins 1999: xvi).
[172]Incidentally, the ambiguity of Dawkins' initial definition, and the diverging (and often incompatible) theories of memetic/cultural evolution resulting from it, have also led to a drop in popularity of the field of *memetics*, inspired by Dawkins' writings (cf. McCrohon 2012: 52; Kaźmierski 2015: 64). Generalised Darwinian accounts of

typically not restricted to one such domain – compare language, which is both a behaviour in that it is spoken, and an artifact (acoustic signals, written texts, etc.). However, it also involves concepts in some way or the other, as speakers can be presumed to have some abstract linguistic knowledge in their minds. Therefore, theories of cultural evolution building on Dawkins' suggestions have diverged quite substantially on this issue (cf. Croft 2013a: 9-10). Basically, there are three strands of approaches to cultural replicators in general, and linguistic replicators in particular:

First, Dawkins himself in a later publication clarifies that memes should be considered as "unit[s] of information residing in a brain" (1982: 109).[173] Accordingly, replicators would be competence constituents (Ritt 2004: 157). Similar views are presented in e.g. Delius (1989), Brodie (1996), as well as Blackmore (1999, 2000), and Aunger (2002), typically associating themselves with the framework of memetics. Arguments for linguistic replicators as "neuronally implemented instructions" (Ritt 2013a) rather than 'external' products include the fact that (knowledge of) abstract (or structural) linguistic patterns such as e.g. constructions or syntactic categories, as well as meaning itself, appear to be represented in speakers' minds. This means that these properties must have been and can be transmitted even though they do not have an articulatory expression (Ritt 2004: 153-157, 197, n39; Rosenbach 2008: 49). Furthermore, as McCrohon (2012: 154) asserts, brain-internal replicators are able to exert a direct impact on their hosts' behaviours, and can therefore be seen as more active.

On this account, the specific units of linguistic replication then correspond to the commonly agreed upon building blocks of linguistic structure, both formal and functional, i.e. phonemes, morphemes, syntactic patterns as well as semantic concepts. Furthermore, combinations of these (clusters of phonemes, 'constructions' in the sense of form-meaning pairs, etc.) might function as replicator associations, also called 'memeplexes' (Ritt 2004: 132, 134; also Lass 1996; Blackmore 1999; Rosenbach 2008: 52). The physical manifestations of these replicators in the environment – artifacts and behaviours – are treated as merely the effects, or products of the mental replicators (cf. also Croft 2013a: 10). Languages are accordingly populations of competence constituents, and thus constitute replicator/complex adaptive systems.

As regards the concrete physical substrate of cognitive memes/ replicators, Dawkins (1999: xiii) does not commit himself to anything, but states that "[m]emes have not yet found their Watson and Crick; they even lack their Mendel" (cf. also Lass 1996: 5). Ritt (2004: 122, n1, 157-169) agrees that current neurolinguistics (or neurophysiological) research is not yet empirically and theoretically

cultural change, avoiding an explicit association with memetics, are gaining in acceptance, as mentioned above. While I believe that there is still high value in the early as well as later memeticist accounts, I will similarly refrain from using this particular label, since I feel that the terminology of generalised and CAS accounts is more encompassing, and less culture-centric.

[173]Dawkins here draws a comparison of memes to Cloak's (1975) i-culture instructions (cf. also McCrohon 2012).

sufficiently advanced in order to be able to corroborate any assumptions in this respect, and that any account will therefore have to remain speculative to a certain degree for the time being.[174] Nevertheless, he fervently supports the assumption of replicators as real entities in the mind (2004: 157). Presenting an elaborate sketch of how these cognitive units might be materially instantiated, the author finally proposes that a replicator might conceivably constitute a cluster of nodes within a network that consists of neutrally implemented constituents. This assembly of nodes is taken to have a distinct internal structure as well as a definite position in the network (Ritt 2004: 169). Language use is then the activation of these neural structures under particular circumstances (Rosenbach 2008: 50). By defining linguistic replicators as neuronal, associative activation patterns, Ritt (2004: 161, 169, n27) also links his account to Donald Hebb's (1949) cell assembly theory, as well as contemporary connectionist models to cognition and learning which build on this view, without, however, restricting himself to one particular connectionist approach (cf. also Rosenbach 2008: 53, n36, n37, and the references mentioned there). Despite the certain uncertainty thus surrounding the material basis of memes, it is generally contended that neuronal process are involved in cultural replication (Hull 2001: 58; cf. also Rosenbach 2008: 54). This is (evidently) also acknowledged by advocates of 'brain-external' replicators.

A connected, yet slightly different issue is posed by the question of discreteness versus gradience of linguistic replicators (or rather, of linguistic competence in general). While e.g. Ritt (2004: 159, 196-204), following Dawkins, argues for replication to be digital, involving non-gradient, categorical entities, Wedel (2006: 249), who takes an exemplar model to language, claims that "reproductive 'units' have no discernable boundaries" and that we are rather dealing with a continuum from non- to fully discrete (cf. also Rosenbach 2008: 49-51). The question of discreteness will be taken up in more detail in Section (6.1) below.

The assumption of brain-external replicators, which constitutes an almost diametrically opposed approach to the memetic, replicators as cognitive units-view, is followed by a number of researchers most prominently including Croft (2000, 2002, 2006a, 2006b, 2008, 2013a; also Baxter et al. 2006, 2009; Blythe & Croft 2009, 2012), following Hull (1988, 2001), as well as e.g. Csikszentmihalyi (1993), Benzon (1996), and Gatherer (1998). Here, the focus is on the empirically observable behaviours and/or artifacts, i.e. on the acoustic or written manifestations of linguistic constituents. The replicating

[174]As Blackmore (1999: 54) rightly asserts, methodological or technical limitations in physically identifying replicators have not prevented biologists such as Darwin from hypothesising about them: "[the] intrinsic uncertainty about just what to count as a gene has not impeded progress in genetics and biology. It has no made people say, 'We cannot decide what the unti of the gene is so let's abandon genetics, biology and evolution.'" (cf. also Ritt 2004: 122, n1). It is, however, plausible that progress in theoretical and empirical neurolinguistics research will provide a sounder basis for ideas about the physical implementation of replicators in the not-too-distant future; Rosenbach (2008: 53), for example, refers to Pulvermüller (2002) "for a first step towards a neurobiologically realistic model of language".

entities involved in language are termed 'linguemes' by Croft (2000: 28).[175] These linguemes have linguistic structure, and make up an utterance, that is to say, "a particular, actual occurrence of the product of human behaviour in communicative interaction (i.e. a string of sounds), as it is pronounced, grammatically structured, and semantically and pragmatically interpreted in its context" (Croft 2013a: 34, 36). An utterance is thus defined as a spatiotemporally bounded and observable entity, whereas a language is a population of linguemes, and consequently of utterances (Croft 2013a: 35).

Such a brain-external account has the clear advantage of dealing with more easily observable constituents. As argued by Ritt (2004: 158-159; 2013), however, its main and fundamental disadvantage – which also casts doubt on its more empirical foundation – is that due to the great variability of actual utterances it is difficult to see how they should be identified as copies of each other. In a similar vein, Mufwene (2002: 47) criticises that what speakers acquire is not in fact the ability to reproduce the utterances of others. Rather, they acquire 'instructions' for how to produce such utterances. The essential problem that opponents of Croft's approach thus take issue with is his failure to clarify where utterances 'get their structure from', although he repeatedly makes mention of structure being passed on in the lingueme replication process (cf. e.g. Croft 2013a: 13-14, 37; also Rosenbach 2008: 49).[176] Croft himself recognises the problem, and in the revised version of his (2000) work concurs that the question of how meaning, which constitutes the conceptual, internal part of a linguistic symbol can be integrated into his definition of linguistic replicators, cannot be answered at this point (2013a: 19; cf. also Croft 2000: 41, n5). A further challenge for Croft's external replicator-account is the emergence of variation: if changes to linguistic constituents occur in the perception or production processes, they arguably affect or are caused by mind-/body-internal processes rather than external ones. For example, sound waves or written utterances typically do not change once produced (apart from fading). What is subject to change is rather cognitive representations. As will be discussed below, this is also predicted by usage-based constructionist accounts, even if usage is an essential factor in language change in this approach.

In sum, the Dawkinsian/Rittian assumptions about the units of replication might suffer from a certain vagueness, or rather, still await empirical confirmation. Nevertheless, they are better warranted than the lingueme-account proposed by Croft. Therefore, the present thesis will follow the former in assuming replicators to constitute cognitive representations, and in particular, constructions as mental form-meaning pairings. The external effects of such cognitive replicators will be incorporated via McCrohon's (2012) i-/e-meme model as presented below.

In regard to the mechanism of replication, i.e. the means by which linguistic constituents self-replicate and produce copies of themselves, is typically taken to be *imitation* (cf. Dawkins 1989[2006]:

[175]As Croft (2013a: 36) indicates, the creation of this term is attributed to Martin Haspelmath.

[176]Cf. also e.g. Hull (1988: 409): "In order to function as a replicator, an entity must have structure".

192; Blackmore 2000: 66; Ritt 2004: 196). However, how this process of imitation is supposed to work specifically is not discussed in greater length (cf. e.g. Dawkins 1989[2006]: 192). Ritt (2004: 160-169; 1995, 1996), as well as Lass (2003: 59), argue that imitation is ultimately a neuronal mechanism, in that particular synaptic connections are strengthened by being activation or perception. This presumption, which of course logically follows from the Dawkinsian definition of replicators as neuronal units is very plausible. However, it has the same drawback of remaining rather speculative at this point: as Rosenbach (2008: 54) points out, "[i]n general, evolutionary approaches to language change (as to cultural change in general) still face the problem of relating linguistic replication to more specific cognitive mechanisms or even a physical (i.e. neurophysiological) basis". A promising, but not yet fully explored possibility to account for cultural replication is the so-called 'mirror system hypothesis' by Michael Arbib and colleagues (Arbib 2012: 207). Furthermore, 'priming' has been proposed as a driving mechanism behind replication (Rosenbach 2008: 56; see further Jäger 2007; Jäger & Rosenbach 2008).

Apart from the issue of what imitiation actually boils down to, a drawback that both the memetic and the 'lingueme' approaches ultimately have in common, although arriving at it from opposite directions, is a problem of linkage (cf. Kirby 1999: 20). Both accounts need to assume indirect replication of some sort, and neglect to clarify how the fact that replication necessarily occurs in actual language use can be united with the fact that it at the same time evidently involves structure and mental representation (cf. also Lass 1996: 7; Hull 2001: 58-61; Rosenbach 2008: 50; Croft 2013a: 10). This issue is captured nicely in Ritt's programmatic question-headline 'How can one copy what one cannot see?' (2004: 196). Very simply put, in order for an internal replicator to get transmitted, it needs to be physically realised in the environment in some way (e.g. via sound waves). This will in turn activate the cognitive unit the external manifestation corresponds to in another brain. Vice versa, if we assume the replicator to be external, it is dependent on some mental representation being activated in order to be replicated again (cf. McCrohon 2012: 159). It is worth noting that in Ritt (2004), the issue of indirect replication is not as prominent as in other accounts, since the author never denies the relevance of external manifestations for the replication process. Quite on the contrary, the cognitive replicators crucially depend on being 'activated', i.e. on being expressed or perceived.

A rather elegant and, I believe, plausible solution to the linkage problem is put forward in McCrohon (2012), who follows the path of Dennett (1991, 1995), Durham (1991), and Blackmore (1999) in considering replicators to be combinations of brain-internal and brain-external entities (2012: 154). Assuming an intermediary position between the 'replicators as concepts' and 'replicators as utterances' approaches, or rather, combining the two alternatives, McCrohon proposes a two-stage model of cultural replication. In this model, which is illustrated in Figure 42, replicators appear in

different forms (or stages): they are either stored in the brain, in which state they are called 'i-meme', or appear in the external environment as e-memes (McCrohon 2012: 162).[177]

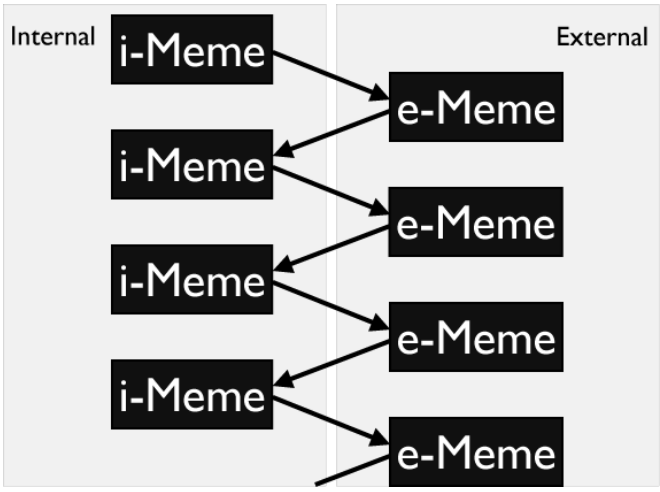

Figure 42 Cultural replicator heredity (taken from McCrohon 2012: 159)

Both internal and external replicator-manifestations are incapable of direct self-replication, but depend on intervening, or mediating instances of the opposite stage (McCrohon 2012: 158-161).[178] Replication is furthermore incremental and iterative, meaning that both i-memes and e-memes can potentially produce a multitude of copies of each other. While i-memes can create and therefore trigger the expression of e-memes, the latter act as models for the learning, recalling and (re-)activation of i-memes (McCrohon 2012: 161-169). As McCrohon (2012: 170) points out, a clear advantage of this two-stage model then is that it,

> by not committing a priori to a brain-internal or brain-external perspective, allows either to be adopted interchangeably as is necessary to explain the phenomena under consideration. This adds considerable flexibility to the model and allows a wider variety of explanations than was possible working under earlier definitions.

Furthermore, by clearly differentiating the two phases, the model allows us to analyse mechanisms of selection and variation on both levels separately, which might lead to a better understanding of how they actually work. However, variation is arguably more difficult to emerge in external replicators. Hence, even though this thesis supports a two-stage cycle model of replication in linguistic evolution, the level of cognitive representations is still clearly emphasised, and will receive most attention.

Note that a further (final) difference between Ritt's and Croft's approach concerns the role of the speaker in linguistic replication (cf. e.g. Rosenbach 2008: 49-50, n33). Ritt (1995, 1996, 2004), as already alluded to in the title of his book *Selfish sounds and linguistic evolution*, again adopts and

[177]The labels 'i-meme' and 'e-meme' are evidently reminiscent of Chomsky's (1986) as well as Cloak's (1975) terminology; however, the author explicitly denies any deeper meaning behind this choice (McCrohon 2012: 158).

[178]Cf. Blackmore's (1999: 66) description of memetic evolution as a "zigzag" process.

extends Dawkins' (1976) notion of 'selfish genes' in this context. He and other memeticists thus follow Dawkins' idea that memes actively replicate. This proposed inherently active nature of replicators should, however, not be taken to imply that they constitute rational agents in any way. Rather, they proceed "stupidly and mechanically", as Ritt clarifies (1996: 36; also Ritt 2004). By contrast, the organism's (i.e. the speaker's) role is simply that of a passive host or 'vehicle', instead of that of the primary agent driving the copying/replication process (Ritt 1996: 37).[179] Importantly, however, this does not mean that the speaker, as well as social factors and physiological and other properties pertaining to the speaker, play no role at all in the replication process. In fact, speakers are highly relevant in this account: although they do not represent replicators themselves, and are not focussed on as a single irreducible source of rational agentivity, they are treated as a fundamental part of the environment of the linguistic replicators. More specifically, features of the speaker (and 'speaker needs') are taken to crucially determine the success or failure of replicators (cf. also Dawkins 1982: 60; Keller 1990[1994]; Schendl 1996; Deumert 2003).[180] [181]

To sum up, this thesis views cognitive, neuronally-implemented patterns as replicators, which get transmitted via imitation in language use. This process can be conceptualised as a zig-zag process of competence constituents such as constructions (i-replicators) generating external manifestations of themselves (e-replicators), which in turn activate brain-internal replicators in others (etc.).

5.1.2.3. Variation and selection in linguistic replication

Having determined the nature of replicators and the replicating process, i.e. having discussed the first essential question 'what is the replicating unit?' and issues connected to this, let us move on to the

[179]Dawkins, in the preface to his seminal work *Selfish genes*, programmatically states that "[w]e are survival machines – robot vehicles blindly programmed to preserve the selfish molecules known as genes" (1989[2006]: xxi); genes (as well as memes) are here compared to parasites or viruses, who 'possess' their hosts (Dawkins 1989[2006]: e.g. 182). The idea is summed up in a somewhat provocative manner by Dennett (1991: 202, 1995: 346): "A scholar is just a library's way of making another library" (cf. also Deumert 2003: 23).

[180]That the thought of humans as a means of reproduction for language constituents, rather than language as a tool used by humans for communication, is somewhat disturbing or at least difficult and unsatisfactory for us, who like to conceive (and are used to conceiving) ourselves as free-willed and agentive subjects, is evident. In the end, the matter in any case appears to pertain more to the domain of philosophy and the question of rationality and free will. Nevertheless, I feel that the sole exercise of changing one's perspective from time to time certainly can be beneficial in trying to explain any kind of issue (cf. also Ritt 2004: 230-233).

[181] Critical accounts of the Dawkinsian approach have tended to misinterpret its stance on this particular issue, and have often overstated its 'neglect' of the speaker. Parly due to these points of critique, more speaker-based accounts have been put forward, which stress the role of the speaker as an 'interactor' (cf. Hull's generalised theory of selection [1988, 2001], embraced by Croft [2000, 2013a]). On this view, speakers have a direct agentive and causal, and thus more active, role in the process of linguistic replication in that they interact with whatever needs to be communicated, their interlocutors, as well as the social context the conversation is situated in (Croft 2013a: 16, 36, 49; cf. also Hull 1988: 408; Beckner et al. 2009). The main difference between this account and the Dawkinsian approach is that the former includes the speaker as a third unit besides replicators and the environment, while in the latter, they (and their needs) are treated as environmental conditions. This thesis clearly supports Dawkins' approach as the more appropriate and convincing account.

two remaining big questions of 'how does variation arise?' and 'how does selection proceed?'. As already mentioned above, there is some disagreement in regard to these issues, for example on the locus or timescale of change (child-based versus adult-/ usage-based change; cf. Croft 2006b: 108-110). Connected to this, the specifics of the process of change have been subject to debate. While some linguists assume a one-step model (e.g. Keller 1990[1994]), others such as Croft (2000, 2006b) argue for a two-step model of 'innovation' (or actuation), i.e. the creation of new elements, and the subsequent 'propagation' of the innovated forms. The latter process, frequently also referred to as 'transmission', 'spread', or 'diffusion', would then correspond to selection in evolutionary approaches, while the former is altered replication, which produces variation in the system (Lass 1997: 315; Croft 2000: 3, 2006b: 104-112; for a proposed three-step model see Rosenbach 2008: 34). A two-step model of altered replication/innovation and selection/spread is also supported in this thesis.

Variation as such is generally considered an integral part of language and language use, meaning that language is intrinsically characterised by diversity on various levels (Beckner et al. 2009: 15; Croft 2013a: 4-6). Concerning potential sources of such innovations, most accounts focus on innovation by means of using or changing already existing material (Lass 1997: 305). The particular processes typically included here are the well-known mechanisms of analogical extension/ analogy and reanalysis (Rosenbach 2008: 28; also Croft 2000: Ch.5). A further process sometimes mentioned is that of 'exaptation'. Exaptation is a concept originally used in biology to describe "features of organisms [which are] are non-adapted, but available for useful cooptation in descendants" (Gould & Vrba 1982: 12). A prime example of such a phenomenon is feathers of birds, which most certainly represent adaptations for thermoregulation rather than flying, for which function they were exapted (Gould & Vrba 1982: 12; Kaźmierski 2015: 80). Lass, in his 1990 paper 'How to do things with junk', introduced the term into linguistics, referring to the acquisition of new functions by old, 'useless' linguistic material. Since then, the notion of linguistic exaptation has been applied in a number of publications. Lass later extended the label to processes of perfectly functional material acquiring another function, thus connecting the issue to grammaticalisation (1997: 318; cf. also Vincent 1995; Giacalone Ramat 1998; Croft 2000; Norde 2002; Traugott 2004, as well as the contributions in Norde & van de Velde 2016). All three of these processes can evidently be drawn on in describing the expansion of prepositions into new contexts: the emergence of a new, prepositional construction for encoding ditransitive events is triggered by the reanalysis of a spatial preposition to recipient role marking (*to*: GOAL → *to*: RECIPIENT). Since this new construction does not appear out of the blue, but represents a functional extension of an already existing pattern, it also qualifies as a process of exaptation. Analogy is then involved (among other things) in that the process can be assumed to have started with high-frequency tokens such as *give*, from which the pattern could have been analogically extended to other, less frequent verbs, as well as connected verb classes.

A problematic, but unresolved issue in this regard is the question of when a deviation, or speaker-hearer mismatch counts as an innovation proper. That is, the question arises how different a copy of a replicator needs to be in order to qualify as 'altered', since every linguistic interaction is likely to involve some degree of alteration. Furthermore, there is disagreement on whether variation, or rather, innovation is entirely random, or instead guided by certain principles.[182] The latter view is supported by Croft, who argues that innovation is driven by functional mechanisms, and restricts any impact of functional (processing-related) factors such as economy to the emergence of variation (Croft 2000: 8; 2006b: 124). Haspelmath (1999: 192), in contrast, proposes that only some innovation is guided by functional factors, while other variants are functionally unmotivated, and occur randomly (cf. also Croft 2000: 118-119). Complete randomness of variation, as in biological evolution, is postulated in works such as McMahon (1994: 337) or Ritt (2004), the latter of which states that "[s]ince innovations come about through 'copying mistakes', evolution proceeds blindly, that is, by trial and error, merely preserving 'adaptive' mutations once they have occurred and discarding those that turn out not to be viable" (Ritt 2004: 84). The emergence of a new variant might be motivated by the functions it serves in the context of its emergence, meanings its first use. However, this does not mean that it will be functionally directed towards establishing the variant as historically stable in the population of replicating constituents. That is, it can be a random variation from the evolutionary point of view, even though its emergence might be strongly conditioned, perhaps functionally. – Note that also genetic mutation is not random in the strongest sense of the word, but is, for example, clearly constrained by bio-chemical factors. Therefore, not all mutations are equally likely. Nevertheless, from the evolutionary perspective it is random, i.e. it is not constrained to produce fit variants (Ritt 2004; cf. also Cziko 1995: 288; Rosenbach 2008: 39-40).

Regardless of its source, variation is an essential precondition for selection, since selection needs to act on something, namely variants, in order to result in evolution (Croft 2013a: 8). As already mentioned, which forms count as variants of each other is of course dependent to a large extent on one's definition of a replicator. Most typically, however, they are taken to be structures that count as alternative expressions of the same function or meaning, e.g. two constructions or words used to express more or less the same meaning, morphemes fulfilling the same function, or also different phonetic realisations of a phoneme (Croft 2013a: 6, 37). A prime example of such variants are the constructions that constitute the focus of this thesis: the DOC and the *to*-POC qualify as variants of each other because they are more or less synonymous, i.e. are used for a highly similar function. Although formally distinct, they are used with an overlapping set of verbs, and both express a meaning of caused reception or caused transfer. That this is more than a mere coincidental semantic overlap,

[182]In some accounts, such as Blevins (2004), the 'randomness' of replication is used in order to signal 'non-teleology' rather than blind, random mutation proper (cf. also Rosenbach 2008: 39-40).

but that the constructions are perceived as different ways of encoding the same meaning is strongly supported by experimental evidence (cf. e.g. Goldwater et al. 2011; Perek 2015). Similarly, the different case frames of the DOC in Old English, as well as the different prepositional patterns found with individual verb classes constitute variants in the sense advocated here.

Once a variant of a resident form has arisen, the replicator variants then compete for expression, or rather, for activation (which translates into relative textual frequency). Since the variants typically differ in their fitness concerning environmental constraints, they are replicated differentially. Differential replication always means changes in the frequency distribution of variants. In contrast to the emergence of variation, this differential replication of variants, i.e. the operating of selectional forces, is clearly not random, but shaped by specific factors. The nature of these factors is, however, again argued over, with the most conspicuous differences lying in the inclusion or exclusion of functional pressures in the selection process. An example of an account explicitly denying any influence of functional factors in selection is Croft. On his account, propagation, that is, the (non-)successful replication of a variant, is instead determined exclusively by social factors (cf. 2000: 32, 38-39, 54-56, 178). This means that selection operates only on the basis of socio-linguistic principles such as accommodation or prestige (cf. also Seiler 2006: 167-169; Rosenbach 2008: 42).[183]

The more broadly accepted view is to give functional factors a prominent role in linguistic selection, with e.g. Haspelmath suggesting that "frequency of use is determined primarily by the usefulness (or 'user optimality') of linguistic structures" (Haspelmath 1999: 190; also Keller 1990[1994]; Kirby 1999; Nettle 1999; Givón 2002; Jäger 2007; Rosenbach 2008). Evidence for either account can, as Rosenbach (2008: 42) maintains, only be gained by investigating the precise locus of functional pressures in language change. The mere presence of functional factors in variation is insufficient. Most recently, Seiler (2006) has set out to explore this issue: based on a study of dialect variation in German-speaking areas concerning the competition between double-object constructions and prepositional patterns, he finds that while comparable variants start out with the same arbitrary distribution in different dialects, they eventually take on very different functions (such as avoidance of stress clashes or marking differential information structure). This phenomenon is then taken to indicate that functional factors are at play in selection rather than in the emergence of variation as such (cf. also Mondorf 2004). Nevertheless, social factors are not denied any part in these accounts. In general, it seems plausible that a number of different factors are at play in linguistic selection, including functional and social ones.

[183]Interestingly enough, Croft's model is often presented as highly compatible with work by the LEC research unit at Edinburgh, despite the fact that many of the projects there are concerned precisely with investigating the role of functional factors in language evolution and change.

The particular model adopted in this thesis is that of Ritt (2004), which distinguishes between three types of factors: genetic, memetic, and social pressures (2004: 221-229). As regards the first set of selectional pressures, Ritt (2004: 222) here subsumes physiological and cognitive, processing-related factors, stating that greater ease of expression of a replicator will increase the likelihood of this replicator to be expressed/replicated. Similarly, ease of perception can positively influence probability of replication. In the case of the dative alternation, it could e.g. be expected that the DOC be more successful, since it is shorter and more economical than the *to*-POC, meaning it is easier to express. On the other hand, the *to*-POC is arguably easier to perceive, because it is more expressive and more clearly indicates the semantic roles involved.

In addition to these "body-friendly" aspects (Ritt 2004: 235), the replicative success of variants is dependent on intra-systemic factors. Replicators are extremely rarely expressed on their own, but typically occur in 'replicator-plexes', and are thus crucially linked to other replicators at all levels in the replicator network. The activation and success of particular replicators is then to a large extent dependent on the success of these other replicators (Ritt 2004: 223). A good case in point is the success rate of prepositional constructions: in a language where case marking is abundant, they are probably not too successful, meaning that the strategy of case marking selects against the strategy of PP-marking. However, under changed conditions such as a decrease in case marking salience and the ambiguity resulting from it, prepositional constructions possibly do much better. As already indicated above, it is physiological-cognitive and intra-systemic factors, and in particular the latter, that will be focused on in this thesis.

The last type of factors indicated by Ritt is social ones. On the one hand, it can be assumed that the social environment of a speaker is highly variable, and replicators might therefore be able to resist being influenced by it. On the other hand, changes in the social environment proceed at a relatively slow pace; it is therefore stable enough to still affect the replicators' success. Among the social variables Ritt (2004: 236) mentions are prestige, meaning that replicators that are associated with powerful or high-status speakers (or groups of speakers) will have a greater fitness than those associated with non-prestigious individuals. Furthermore, the degree to which a given variant signals group-membership (conformity to in-group convention) or particularity (non-conformity to in-group convention) likely plays a role. In general, the frequency of a particular variant within a particular group will be of relevance (Ritt 2004: 225-227, 236). Regional preferences such as the continuing availability of [TH-REC] order in DOCs with two pronominal objects in certain dialects in Britain can be subsumed

here: variant tokens such as *Give it me!* have presumably remained stable in these areas due to social factors.[184]

The result of these different selectional pressures is, as already pointed out, differential replication, and the resolution of competition. There are two typical scenarios of such competition resolution. The first option is that one variant declines, while the other variant wins out, managing to become the only expression. This is likely what happened with the case constructions of the DOC in Old English: the frame of [DAT-ACC] ousted the other available, but less successful frames. Similarly, with verbs of dispossession, the prepositional construction is supposed to have driven out the DOC uses. The second pathway is for both variants to survive, but to come to diverge functionally and construct their own complementary 'niches' (cf. Traugott & Trousdale 2013: 18). In this case, variation is maintained rather than eliminated, but the competing forms typically become restricted to and are systematically used in specific functions (social or systemic). I argue that this scenario then represents the emergence of a cooperative, mutualistic relationship rather than one of competition. Although the distribution of the variants in such cooperation is often quite stable, however, proportional frequencies might still vary over time even here (Rosenbach 2008: 40).[185] Constructional cooperation can be illustrated by the members of the dative alternation: as has been repeatedly shown, the DOC is typically used when the recipient is unfocused (discourse-given, pronominal, etc.), the *to*-POC is the preferred choice with discourse-new, focal recipients. The constructions therefore seem to have developed a complementary distribution according to discourse-pragmatic factors. It should be noted that neither scenario is clearly more profitable than the other for the system and the replicators involved. Although a bi-unique system might be beneficial in some respects, (continued) variation could itself be advantageous since it allows for an expanded range of options to express meanings (cf. also e.g. Smith, Tamariz & Kirby 2013 on the evolutionary trade-off between learnability and expressivity).

In conclusion, in regard to the emergence of variation and selection of variants, I assume here that the former is random in that variation is produced by copying mistakes in the replication process. The latter, by contrast, is fundamentally driven by three kinds of factors, namely cognitive-physiological (functional) and social ones as well as intra-systemic, network-related pressures. These factors crucially determine the success of the competing variants, with differential replication leading either to the ousting of one variant in favour of the other, or the development of a cooperative relationship in which the variants come to take over complementary functions.

[184]The sets of factors assumed to be at play in linguistic selection clearly "interact and feed into one another" (Beckner et al. 2009: 16). This can result in a 'tug-of-wars' between different factors (cf. Ritt 2004: 229; also Zipf 1949; DuBois 1985; Lindblom 1990; Cooper 1999; Steels 2006; Christiansen & Chater 2008).

[185]Selection ceases to play a role once a variant has been ousted, or a stable equilibrium has been reached (cf. also Rosenbach 2008: 40).

5.1.3. Summary

Summing up, the basic assumptions that this thesis works on are the following: languages are replicator systems, meaning that they constitute populations of linguistic replicators. These replicating units are competence constituents such as constructions, and likely represent neuronally implemented patterns. Copies of these competence constituents are distributed (i.e. shared) in a population of speakers, which means they have been transmitted and imitated. The process of replication is taken to involve both i-replicators (competence constituents) and e(xternal)-replicators; these types constitute the two stages of the life cycle of cultural/linguistic replicators. On a diachronic dimension, this suggests that constituents may emerge or disappear, and that constituent tokens establish lineages (each constituent token owes its existence to one or more previously existing ones, and may cause new constituent tokens to exist). Importantly, constituent transmission is rarely, or indeed never, completely faithful. Therefore, variation among constituent types is constantly produced by altered replication (copying mistakes). In this, the emergence of variation is random, meaning that it is not goal-directed in any way, and is not influenced by functional or other factors. The variants generated in this way then compete against each other for expression, manifest in relative textual frequency. Whether a replicator variant is successful or not is determined by selectional pressures – these come in three types, namely cognitive-physiological factors such as economy or expressivity, intra-systemic factors, and social factors such as prestige. Differential replication caused by differences in performance of variants on these factors can, on the one side, result in the disappearance of one variant, and the 'victory' of the other. On the other side, the variants can come to form their own (functional) niches, and co-exist alongside each other in a cooperative instead of competitive relationship. Crucially, differential replication and accordingly linguistic change in this approach is always frequency change: if construction A changes into, or is overtaken by construction B, this means that tokens of variant B become more frequent in the population than tokens of variant A. If construction A and B develop a cooperative relationship, their relative frequency distribution is stable, with tokens of both variants being around. This implies that an evolutionary perspective is highly compatible with (or indeed suggests itself as the most appropriate framework for) a frequency-based empirical approach as taken in this study.

5.2. Evolutionary Game Theory

Building on the assumptions outlined in the preceding chapters, the present thesis employs methods developed within the general mathematic framework of Evolutionary Game Theory (EGT), in addition to the corpus study presented above. As pointed out by Deo (forthc.: 30), "[e]volutionary game dynamics have been used to describe and understand the behavior of large populations over time as an evolving game, and in particular, changes in the frequencies of different strategies in a population

over time" (cf. further Maynard Smith & Price 1973; Taylor & Jonker 1978; Hofbauer & Sigmund 1998, 2003; Nowak 2000, 2006; Jäger 2004, 2007, 2008; Benz, Jäger & Rooij 2006). In sight of the sometimes comparatively scarce and certainly very limited amount of data available for historical stages of a language, such methods of modelling language change are considered highly valuable in testing and potentially providing further support for hypotheses about particular changes in language. In the following sections, I will first introduce the basics of game theory and, in particular, evolutionary game theory (5.2.1). I will then go on to discuss one way in which EGT modelling could be used to address questions in historical linguistics and the development of ditransitives in Middle English (5.2.2). The main aim of the chapter is to outline and test a theory of why – under paradigmatic constraints that are assumed to be universal – changing environmental conditions such as the loss of inflections and the fixation of word order might bring about a stabilisation of the mixed strategy that characterises the PDE dative alternation. That is, I aim to demonstrate that strategies for recipient marking (like expression as NP or PP), and correspondingly, constructional variants (DOC and *to*-POC) can be forced into cooperation through changes in the systemic environment.

5.2.1. Introduction to EGT

Most basically, game theory can be defined as "a branch of applied mathematics that models situations of strategic interaction between several [typically two] agents" (Jäger 2008: 406; cf. also von Neumann & Morgenstern 1994). The framework has been applied in and extended to various disciplines such as economics, biology, political science, and more recently, also linguistics (cf. Nowak 2006: 45-46; Jäger 2008: 406-407). The key assumptions in game theory are the following: the interacting agents, usually referred to as 'players' can choose from a set of different strategies that are at their disposal. Whether the choice of one behaviour over the other will be beneficial or costly to the player is dependent on the behaviour of the other player, as well as (possibly) on the circumstances of the interaction. The results of the interaction are determined in terms of payoffs or 'utilities' for the respective player-strategy pairs.

An example of a simple game involving two players is 'Rock-Paper-Scissors'; here, the participants simultaneously select for one out of three strategies without being able to predict the outcome, since the utility of one behaviour depends entirely on the actions of the other player (cf. Jäger 2004: 3, 2007: 90, 2008: 408; Benz, Jäger & van Rooij 2006). This game also illustrates a symmetric game in that all strategies are available to all players, who are not restricted to one particular position. Furthermore, the payoffs do not depend on the position of the player (cf. Hofbauer & Sigmund 1998: 114). In asymmetric games, on the other hand, players can assume different roles, possibly disposing of a different set of strategies. In contrast to symmetric games, in asymmetric games the payoffs do depend on position, meaning that the players get different utilities.

A typical example of an asymmetric game is the so-called 'battle of the sexes' (cf. Maynard Smith 1982: 130-131; Dawkins 1989[2006]: Ch.9; Hofbauer & Sigmund 1998: 114-116). This game concerns parental investment, i.e. the costs and benefits involved in raising offspring for females and males. The underlying assumptions then are that both females and males profit from successfully bringing up their children (e.g. +15 points each). However, there is also substantial costs in terms of time and energy (e.g. -20); these can be either shared by both parents, or met by only one of them. For both females and males, two different strategies are available: females can be either 'coy' (insisting on a long courtship period) or 'fast' (short engagement period). Males, in contrast, can be 'philanderers', in which case they are not willing to engage in a long courtship, and are not prepared to take care of their offspring – or, they are 'faithful', meaning they conduct courtship and stay with the female to help in upbringing. A long courtship is costly to both players (e.g. -3). The results of this game turn out to be cyclical, with the payoffs differing according to position. In a population of coy females, males profit from being faithful, since moving on to other partners would mean another costly courtship. If males are faithful, however, it pays for females to be fast: if they will stay on in any case, the expenses involved in courtship are unnecessary. With fast females, philandering men profit, since they can avoid both the costs of courtship and of bringing up the offspring – if males are predominantly philanderers, then, there is greater benefits for females in being coy (cf. Maynard Smith 1982: 130).

A further characteristic of games in the classical game theoretic set-up is, as Jäger (2008: 408) points out, that they are rationalistic. This means that the involved players are presumed to be perfectly rational, seeking to maximise their payoffs (cf. also Nowak 2006: 46; Jäger 2007: 84). Evolutionary Game Theory (EGT), in contrast, "studies the general problem of strategy selection and its propagation across a population, attributing a non-central role to rationalistic reasoning in this process" (Deo forthc.: 23; cf. also Nowak 2006: 46). This framework was developed above all by John Maynard Smith and George Price (Maynard Smith & Price 1973; Maynard Smith 1982) as well as by Josef Hofbauer and Karl Sigmund (Hofbauer & Sigmund 1998, 2003) and Peter Taylor (Taylor & Jonker 1978), who linked game theoretic assumptions to biology and also population thinking (cf. Nowak 2006: 46). As indicated in Deo's quote, EGT is not concerned with analysing one single game and its players, but rather investigates larger populations of potential participants (Jäger 2004: 2). These players, each of which invariably plays the same strategy, randomly interact with each other in a pairwise sequence of games. The payoffs gained in each of these encounters are then added up in order to establish what a strategy's average utility is. More precisely, the payoffs are averaged across all the encounters involving all different strategies, taking into account their proportional distribution in the population (Deo forthc.: 30). 'Utility/payoff' can here be translated into fitness, and accordingly, into replicative success. That is, a strategy whose average payoff is higher than that of other strategies will reproduce more rapidly, thereby outperforming less successful strategies and influencing the

composition of the population. Importantly, it is the differential reproductive success of strategies rather than that of a single player that EGT is concerned with, i.e. we are dealing with natural selection acting on the strategies present in a population (Nowak 2006: 46; cf. also Jäger 2004: 18, 2007: 90-91, 2008: 408-409; Deo forthc.: 30). Last, it is worth noting that strategies can also be non-deterministic, meaning that there can be mixed strategies in addition to pure strategies. Playing mixed strategies in EGT can, with Jäger (2007: 91), either be understood as a population being mixed, with different strategies being around, or it can be interpreted in a way that each player in the population chooses one strategy or the other with a certain probability.[186]

The payoffs of symmetric 2x2 (two players - two strategies) games such as the one that will be proposed in the next section are typically represented in matrices like the following (98), indicating that playing strategy *A* against *A* yields a payoff *a*, *A* against *B* will result in a payoff of *b*, and so on.

(98)

	A	B
A	*a*	*b*
B	*c*	*d*

Equating payoff with fitness, and presuming x_A and x_B to be the frequency of strategy *A* and *B* in a population (with 'frequency' corresponding to the probability of interacting with an *A* or *B* player), the expected fitness of the two strategies is given by $f_A = ax_A + bx_B$ and $f_B = cx_B + dx_B$, respectively (Nowak 2006: 49; Deo forthc.: 32). If we furthermore take selection to be frequency-dependent rather than constant,[187] we arrive at five possible dynamics between the two strategies, as illustrated in Figure 43 (Nowak 2006: 50).

[186]The second interpretation is of course slightly at odds with the claim of each player in a population being programmed for a specific strategy, the contradiction could, however, be resolved by assuming that the programme assigning strategies is itself non-deterministic (Jäger 2007: 91).

[187]The difference between constant and frequency-dependent selection (dynamics) is dealt with at length in Nowak (2006: 46-49), among others.

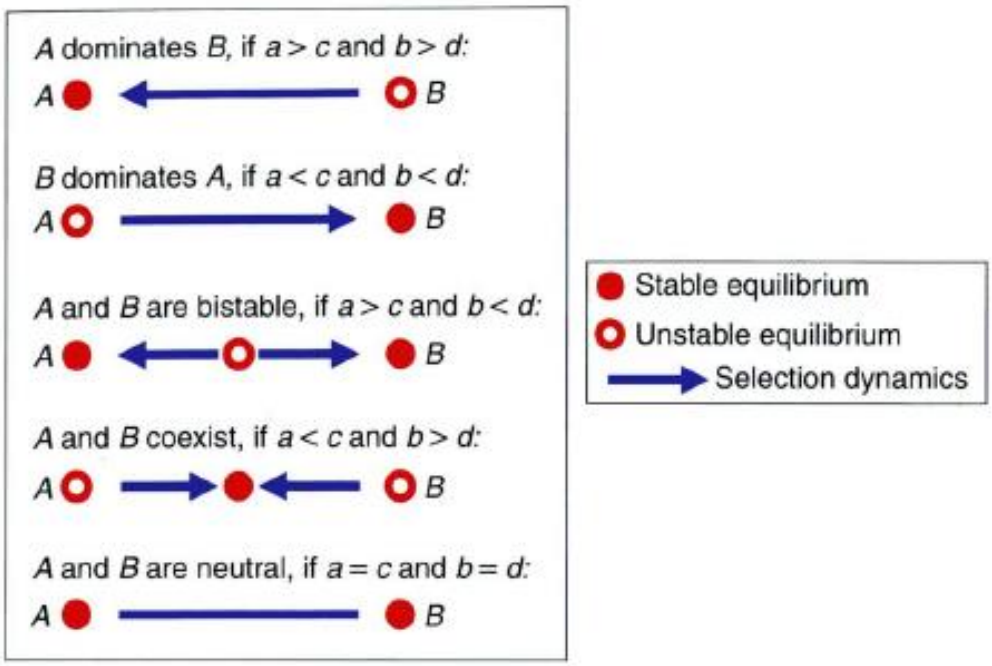

Figure 43 Five possibilities for (frequency-dependent) selection dynamics between two strategies (taken from Nowak 2006: 50)

On the basis of these assumptions, it is then also possible to determine which situation would be most optimal for both players. In such a setting, usually referred to as 'Nash equilibrium', unilaterally changing strategy is not beneficial to any of the player. In a Nash equilibrium, it is therefore impossible to improve one's payoff by switching to another strategy (Nash 1950; Jäger 2007: 87; cf. also Nowak 2006: 51-53, among others). In other words, a Nash equilibrium describes a strategy pair whose members are the best responses to one another. If the strategies are furthermore the unique best responses to each other, we speak of a 'strict Nash equilibrium' (SNE). The criteria for identifying (strict) Nash equilibria established by Nowak (2006: 52) are the following:[188]

(i) *A* is a strict Nash equilibrium if $a > c$.
(ii) *A* is a Nash equilibrium if $a \geq c$.
(iii) *B* is a strict Nash equilibrium if $d > b$.
(iv) *B* is a Nash equilibrium if $d \geq b$.

A further concept, of particular importance in evolutionary game theory, is that of *evolutionarily stable strategies* (ESS). As Hofbauer & Sigmund (1998: 59) state, "[a] type of behaviour is said to be *evolutionarily stable* if, whenever all members of the population adopt it, no dissident behaviour could invade the population under the influence of natural selection" [original emphasis]. An ESS can thus be said to have an "**invasion barrier**" [original emphasis] protecting it against mutant strategies (Jäger 2007: 91). The notion of evolutionary stability is related to the concept of Nash equilibria in that it can

[188]See e.g. Hofbauer & Sigmund (1998: Part 2), Jäger (2004: 3, 2007: 87) and Nowak (2006: 51-53) for a more detailed discussion of the concepts and other criteria/ formulae used to calculate the optimal (possibly mixed) strategy pairs.

also be defined as '$a > c$, or $a = c$ and $b > d$' (drawing again on the general payoff matrix as presented above; this formula applies to scenario (i-ii), (iii-iv) work analoguously). Each strategy that represents a strict Nash equilibrium is thus also an ESS (Jäger 2004: 5; Nowak 2006: 53-54). In asymmetric games, it is strategy combinations or pairs rather than one single strategy that turn out to be evolutionarily stable (Hofbauer & Sigmund 1998: 113-114).

As mentioned above, (evolutionary) game theory has found application in a number of disciplines, and has most recently also been employed in studying cultural and linguistic change, as well as the evolution of language itself (cf. e.g. Nowak 2006; Jäger 2007, 2008; Deo forthc.). In these accounts, strategies are typically identified with grammars, and games are taken to represent utterance situations (cf. e.g. Jäger 2007: 92). Since replication in the case of language means imitation and learning (Chapter 5.1), the utilities or payoffs generated by a specific strategy here refer to the probability of a strategy to get imitated (Jäger 2004: 21, also Jäger 2008: 419; Deo forthc.: 31).[189] A higher payoff of one strategy could accordingly be translated into higher communicative success and consequently a higher probability of being adopted. The factors determining the utility of a given strategy are assumed to include cognitive/ physiological and functional (discourse-pragmatic) issues, as well as intra-systemic and social factors. As repeatedly pointed out, assumptions about the impact of these different sets of factors are typically made on the basis of psycholinguistic and sociolinguistic research. While it is clear that further investigations are certainly needed in this regard, it is expected that, as Jäger also comments, "[a] combination of game theoretic and experimental methods is a very promising route for future research" (Jäger 2008: 419).

Nevertheless, and quite importantly, though, it has to be pointed out that (evolutionary) game theoretic models cannot be used to predict or explain diachronic change. Although linguists can profit from investigating the consequences of particular changes within this framework, EGT does not provide explanations for the changes themselves (Jäger 2007: 93). For example, EGT cannot be used to address the question why and how a new strategy (i.e. a mutation) entered the stage, or why the fitness landscape changed. However, it can be very valuable in explaining the success or non-success of the innovative strategy in comparison to the established strategy/strategies after it beomes available to the players. In the following section, I will do exactly this, namely test which strategy out of two (or strategy combination out of four behavioural types) emerges as most beneficial under differing conditions, dependent on a fixed set of functional factors.

[189]A few pages earlier in Jäger's EGT primer, utility is interestingly equated with "social impact" (2004: 21) rather than imitation likelihood, which is taken to be based on various factors including, but not restricted to, social ones.

5.2.2. Application of EGT to the history of English ditransitives

This chapter reports on an attempt to integrate and transfer evolutionary game theory (in)to the domain of historical linguistics. In particular, I will apply EGT to one aspect of the history of English ditransitives, namely the competition between (cases-marked) NPs and prepositional phrases as strategies for expressing the recipient of a ditransitive event. It should be mentioned beforehand, however, that the changes involved in the larger development of ditransitives in English, and even the specifics of this particular change, are much more complex than what is presented or assumed in this account. That is, the game presented below is unfortunately but also necessarily (in order for things to remain mathematically feasible) highly simplified and radically abstracted. Nevertheless, as Jäger (2007: 102) claims, this need not be a drawback, since "[t]he purpose of a scientific model […] is not to approximate reality as closely as possible, but to explore the consequences of theoretical assumptions and to generate empirically testable hypotheses". Although the specific games played here are supposed to resemble the language situation in different stages of English as closely as possible, the main objective of including EGT in this study therefore is to assess whether this approach can be used to find support or refute specific assumptions that are difficult to test otherwise (for example due to lack of psycholinguistic, experimental data). In our case, the central question is whether optimal strategies for recipient marking could change in a certain way depending on a fixed set of factors and changing environmental settings. By addressing this issue in an EGT setting, I hope to show that applying mathematical modelling to linguistic problems can yield interesting and also plausible and valuable results. While these results might not be the ultimate answer to open questions in historical linguistics, they are still able to make predictions from assumptions based on more traditional methods. That this is indeed the case has been shown in a number of relatively recent studies modelling specific changes and trajectories of changes in the framework of evolutionary game theory, such as e.g. Benz, Jäger & Rooij (2005), Jäger (2004, 2007, 2008) or Deo (2015).[190] These, and other studies also demonstrate that the great complexity of language systems does not necessarily preclude the possibility of approaching them by means of mathematical modelling (Ritt & Baumann 2012: 220).

In line with the general approach to language taken in this thesis, which views competence constituents as cultural replicators, and does not put focus on the speakers as such (see Chapter 5.1 above), the role played by the speaker as an individual who uses language with a particular communicative intention in particular contexts is disregarded almost entirely in the EGT account presented below (Ritt & Baumann 2014). This is due to the fact that, as will be explained below, the

[190]It has to be pointed out, however, that these studies are primarily concerned with pragmatics, and highlight the roles of the speaker/hearer in communication games. The present account is, as already mentioned, different in that the language users are largely left out of the picture; the focus is thus on the linguistic constituents themselves. This approach is in line with the general assumptions on the nature of replicators and the question of agency in language use as explained above (cf. also Ritt & Baumann 2012).

'players' of the game are defined as (populations of) variants of a particular meaning/function instead of (populations of) speakers and listeners, i.e. the users of such meanings. Similarly to Jäger (2007: 92), this study is therefore concerned with replicator-based games, and takes (populations of) player/strategy pairs to represent (populations of) grammars.

5.2.2.1. Set-up of the recipient game

The model presented in this thesis, which could be called the 'recipient game', is a two-player two-strategy game, and can be either symmetric or asymmetric. The central issue to be dealt with in the present game is the development of RECIPIENT marking in the history of English: as we know from the discussion above, this changed considerably between Old English and PDE, shifting from case suffixes to zero-marked NPs (in the DOC) or PPs (in the POC). The players or 'agents' we assume in the game are two discourse-pragmatic variants of this meaning, namely on the one hand, REC in focus, i.e. a discourse-prominent REC (REC as rheme or comment), and unfocused REC (theme, topic) on the other hand. The variants are labelled 'REC [+focus]' and 'REC [-focus]', respectively in the remainder of this section.

The choice of these two particular functions as players was motivated by the fact that the two members of the PDE dative alternation differ in discourse-pragmatic features: while the DOC is prototypically used when the recipient argument is unfocused, i.e. animate, pronominal, discourse-given, definite, concrete, etc., the *to*-POC is the preferred choice with focused, i.e. non-topical, inanimate, nominal, discourse-new, indefinite, abstract, etc., recipients. The same distribution has also been shown to have been present in earlier periods. In Old English, for example, the different object orders in the DOC (REC-TH or TH-REC) were driven by factors like animacy, givenness or pronominality as well (De Cuypere 2015a). Similar trends can be observed in the Old English *to*-POC, with topical recipients being biased towards [*to*REC-TH] order, and non-topical, focal recipients favouring [TH-*to*REC] patterns (De Cuypere 2015c). This tendency for placing non-focus-elements early in the clause, while focus constituents tend to come in clause-late position, is a well-known phenomenon, and is variedly referred to in the literature as the 'principle of harmonic alignment', the 'given-before-new'-principle, the principle of end-focus, and others (cf. e.g. Quirk et al. 1985: Ch.18). How this universal constraint is implemented and what consequences it has, however, differs between individual cases (and also between languages). The present games now explore what bearing it had on the history of ditransitives in English.

The set of strategies among which both players can choose comprises first, the option of being expressed as a NP, and second, expression as a PP. The available options amount to four behavioural types in total, namely G1 (both players choose NP), G2 ([-focus]: NP, [+focus]: PP), G3 (both players select for PP), and G4 ([-focus]: PP, [+focus]: NP). In each round of the game, that is, whenever one of

the variants is used in an utterance (and perceived), the players receive a payoff which reflects the quality and appropriateness of the selected strategy concerning a number of (functional) factors.[191] More specifically, the strategies are evaluated on the basis of the following criteria, mostly reflecting processing requirements (cf. e.g. Hawkins 1992, 1994; Rohdenburg 1996; Jäger 2004, 2007; Croft 2006b; Steels 2007, 2012c; Bisang 2009; Leino 2013):[192]

- First, the degree of **explicitness** or **distinctiveness** of a strategy is determined, meaning that a given player will receive a higher payoff the higher the information value or cue reliability of the given strategy is; cf. e.g. Haspelmath (2006: 3) principle that "utterances should contain the information necessary for understanding what is meant". A higher score concerning the disambiguation potential of an expression is therefore beneficial for a player (cf. also Lightfoot 1991: 160, 171; Heine 1994: 259; Goldberg 1995: 67-68; Harris & Campbell 1995: 54, 73; Jäger 2004, 2007; Croft 2006b: 119).
- Second, the criterion of **economy** or **parsimony** is taken into account – as famously stated by Zipf's (1949) 'principle of least effort', and as generally proposed, speakers tend to favour shorter, unmarked expressions over longer and marked ones, striving to minimise their effort (cf. Haspelmath 2006: 3; Jäger 2007: 78). Accordingly, strategies that are less complex and involve fewer linguistic elements will receive a higher payoff in the game (cf. also e.g. Goldberg 1995: 67-68; Clark 1996: 69; Croft 2000: 75).[193]
- As a last factor, the strategies' **compatibility with word order requirements** of the language is examined. While this issue might not be as cross-linguistically or psycho-linguistically salient as the preceding factors, it can be argued to have been relevant in the history of the English language, especially in light of the increasing fixation of word order in the period under investigation. The details of how this issue was implemented and translated into payoffs will be presented below.

Further factors that could have been included in determining the utility of a linguistic item or strategy are 'cooperation (coordination)' vs. 'defection' or 'anti-cooperation (anti-coordination)'. In our case, this would have meant that there is a benefit in either arriving at the same decision or, vice versa, in

[191]The two variants do not actually meet in language use in the sense of being expressed at the same time (a produced recipient is either in focus or not, but not both). Nevertheless, there is interaction in that the game also involves perception of the utterance.

[192]As Jäger (2007: 75) points out, and as discussed in Chapter (5.1) above, "[i]t seems plausible to assume that functional, cognitive, and social factors interact in linguistic selection"; the focus in this approach is, however, only on functional (and systemic) factors, since these can be operationalised most easily.

[193]The combination of the two first factors is evidently highly reminiscent of the well-known 'minimax principle' (Carroll & Tanenhaus 1975), stating that language users attempt to minimise complexity (and effort) while at the same time striving to maximise the information value of an expression (cf. also Jäger 2007: 81). For a comparable (but more elaborate) agent based modelling approach to such issues see van Trijp (2013).

opting for opposite strategies. It could, for example, be argued that the players profit from choosing the same strategy in that, according to the principle of bi-uniqueness (one meaning – one form), their common meaning (RECIPIENT) might be recognised more easily if it is always expressed in the same way, i.e. either as a NP for both [+focus] and [-focus] recipients, or as a PP in both cases, respectively. At the same time, however, the question arises whether the potential advantages of bi-uniquely indicating the overarching meaning supersede the gains to be had for the variants from differentiating themselves from the other and constructing, in a way, formal niches that correspond to their (even though subtle) meaning differences. Since taking into account both 'cooperation' and 'defection' as factors would have resulted in the payoffs cancelling each other out in any case, it was decided to exclude them from the game beforehand. Nevertheless, a closer investigation of this problem would certainly be interesting.

In order to address the issue of diachronic development, three different games were then devised. Although all games start with the same assumptions and the payoffs are calculated on the basis of the same factors as just described, they differ with regard to two changing parameters. This means that the utility functions of the individual player/strategy pairs change from game to game due to a changing fitness landscape (cf. Jäger 2007: 93). The changes posited are, on the one side, changes concerning the salience of case marking. More precisely, the degree of case marking salience is taken to decrease from game to game. On the other side, the degree of indicativeness or fixation of word order increasingly grows between the first and the third game. The games are thus supposed to reflect different stages in the history of English: the first game represents a simplified Old English language situation, where case marking is still highly salient, while word order is flexible. The second game, in contrast, models early Middle English, a 'mixed' state with reduced yet still present case marking that although only marginally, still carries some content. Word order at this point is similarly in transition – while not yet entirely fixed, tendencies can already be observed and constituents are more restricted in their movement within the clause. Finally, a hypothetical 'late Middle English and beyond' situation is modelled in the third game. At this stage, case marking is largely absent und thus not indicative at all, whereas word order is fixated in a way that NP-recipients always appear in first position after the verb, while PP-recipients are bound to the last (second) position, following the THEME-argument. As concerns the utilities (or payoffs) calculated for the individual meaning-strategy pairs, I argue, with Jäger (2004: 27), that they "represent the difference in the absolute abundance of a certain strategy at a given point in time and at a later point[; a] negative utility thus simply means that the number of utterances generated by a certain strategy is absolutely declining". As can be seen in the tables in the

following section, the payoffs are represented by real numbers in the individual games. Importantly, it is the order of respective payoffs that matters rather than the size of the numbers as such.[194]

5.2.2.2. Results of the recipient game[195]

Moving on to the details of the games and their results, it can first be seen that regarding explicitness, NPs receive a score of 1 in Old English, due to case marking still being comparatively prominent, and semantic distinctions thus still being expressed rather faithfully by means of morphology (

Table **13**). Even at this stage, however, PPs can be assumed to have a slight advantage over NPs since, as Kittilä, Västi & Ylikoski (2011: 4) point out, it generally "holds that adpositions [in this case prepositions] are semantically more specific, whereas cases are more abstract in nature (especially if a language has both […])". In addition to their inherently more explicit nature, the use of prepositional phrases furthermore allows speakers to make finer distinctions concerning the meaning to be expressed. For example, while the dative case in Old English was considerably semantically bleached and was ambiguous between various different semantic roles, the specific semantic role, and even possible sub-senses within this category could be expressed in a much more explicit way by the (comparatively) wide range of prepositions available. This is illustrated in the following examples (99a-b), where the same verb is used with two separate, even though related, prepositional phrases. Although difficult to assess on the basis of out-of-context examples, these differences in form in all probability reflect at least minor differences in function.

(99) a. to *quyte* **to the sones of Bersellay**$_{REC}$ the trewthe and kyndnesse of her fadir$_{TH}$
'to repay their father's truth and kindness to the sons of Bersellay'
(CMPURVEY,I,12.452; M3)

b. we *schule* […] *quiten* ure dettes$_{TH}$ **toward ure lauerd**$_{REC}$
'we shall repay our debts to our lord'
(CMANCRIW-1,II.102.1229; M1)

While PPs remain stable over the different stages/games concerning explicitness (see Table 14 and Table 15), the scores of NPs are increasingly lowered due to the increasing case syncretism and eventual complete loss of case markers. For the intermediate stage, we assume that there is still some indication of semantic role present despite the relative advancedness of the reduction process, for which reason NPs get a neutral score of 0. In contrast, in the last game, which simulates the latest stage in the development, the 'bare' case-less NPs are highly ambiguous (at least significantly more ambiguous than other means) concerning the explicit role they express; their payoff is therefore negative at -1.

[194]Cf. e.g. scenario (i) as referred to above (strategy A is NE if $a > c$). If $a > c$, then also $x \cdot a + y > x \cdot c + y$.

[195]I am grateful to MMag. Andreas Baumann for his valuable help with the mathematical analysis involved.

Table 13 Extended payoff-matrix for Old English recipient game

OE		explicitness	economy	word order compatibility
[+foc]	NP	1	1	0
	PP	2	-1	0
[-foc]	NP	1	1	0
	PP	2	-1	0

Table 14 Extended payoff-matrix for early Middle English recipient game

eME		explicitness	economy	word order compatibility
[+foc]	NP	0	2	0
	PP	2	-1	1
[-foc]	NP	0	2	1
	PP	2	-1	0

Table 15 Extended payoff-matrix for late Middle English (and beyond) recipient game

lME		explicitness	economy	word order compatibility
[+foc]	NP	-1	3	-1
	PP	2	-1	1
[-foc]	NP	-1	3	1
	PP	2	-1	-1

As regards economy, it has been reported that prepositions are cross-linguistically longer than case affixes and vice versa – this general distributional fact predictably also holds true for English (Hagège 2010: 29). Accordingly, PPs are consistently ranked lower than NPs on the payoff scale for this criterion (-1 in all games). The scores of the latter, however, although more compatible with the requirement at all stages, again vary between the games. While NPs start out with a rather low score of 1 since they still contain more phonological material and are thus not yet entirely economic, this score is increasingly raised from game to game (eME: 2, lME: 3) in correspondence with the increasing loss of case inflections and the shortening of the word form resulting from this.

Finally, the payoffs of the strategies in the respective games differ in regard to compatibility with word order requirements. What this criterion is in effect about is the following: we assume, with e.g. Quirk et al. (1985: Ch.18), that the principle of end-focus as a discourse-functional constraint on recipient expression is present in all hypothetical (and actual) language stages we are dealing with here (cf. also above on the principle of given-before-new etc.). This means that while REC [-focus] is always (or at least typically) found in first position in the clause (in relation to the theme), REC [+focus] categorically appears in second/clause-late place (again in relation to the theme). This is a fixed parameter; however, the flexibility of the strategies as to which positions they can fill gets increasingly restricted over time. In the first (OE) game, both NPs and PPs are equally likely to serve as input for the

first and second position.[196] They are thus equally compatible with both [-focus] and [+focus] meanings, and receive a score of 0 in all cases. The intermediate game, however, sees a slight restriction on this flexibility. NPs are now somewhat more closely associated with first position, in contrast to PPs, which (reflecting their adjunctival origins) tend to occupy the later slot in the clause. Nevertheless, at this point the associations are preferential rather than categorical. The favoured strategies, i.e. NPs for [-focus], PPs for [+focus], therefore score slightly better than their competitors, which nevertheless still get a neutral rather than a negative payoff (1 vs. 0). This changes in the last game then, where word order is fixed almost completely, and the strategies are clearly and firmly linked to one position only. Choosing the dispreferred strategy here results in a negative payoff (-1).

Although not explicitly dealt with in the payoff-matrices here, the factors are also assumed to be interrelated to a certain extent. For example, as Jäger (2007: 85) points out, "[c]ase marking will […] be more useful in languages with free word order […] than in languages with strict word order" (Jäger 2007: 85). The factors of explicitness and economy can accordingly be taken to be inversely related to the word order-factor in the case of NPs.

By calculating the joint payoffs for each meaning-strategy combination, we then arrive at the following more comprehensive payoff matrices (Table 16 to Table 18). In each cell of the tables, the first number gives the utility of the row player (i.e. REC [-focus]), whereas the second number represents the payoff of the column player, in our case REC [+focus].

Table 16 Payoff-matrix for OE recipient game

OE		**[+focus]**	
		NP	PP
[-focus]	NP	**2,2**	2,1
	PP	1,2	1,1

Table 17 Payoff-matrix for eME recipient game

eME		**[+focus]**	
		NP	PP
[-focus]	NP	**3,2**	**3,2**
	PP	1,2	1,2

Table 18 Payoff-matrix for lME recipient game

lME		**[+focus]**	
		NP	PP

[196] It is sometimes (at least implicitly) claimed that since "PPs in OE can be found in virtually any position in the clause" (Lundskær-Nielsen 1993: 66), they exhibit greater flexibility than other constituents in moving around the clause. However, this is arguably also the case for NPs (whether case-marked or not) in earlier stages of the language. Assuming a balanced distribution of NPs and PPs in both clause positions for the OE game thus seems to be warranted. In fact, as reported on above, studies on the order of objects in Old English have shown that NP-recipients are found in either position with a more or less 50/50 chance, whereas PPs – supposed to be more flexible – actually show a slight preference for the last position from early on (cf. Chapter 4.2.4 above).

[-focus]	NP	3,1	**3,2**
	PP	0,1	0,2

A first glance at the tables suggests that behavioural type G1 (NP for both meanings) wins out in the Old English game, while G2, i.e. [-focus]:NP/ [+focus]:PP, is most successful in the third game (lME). The intermediate, early Middle English game, in contrast, appears to represent a transient stage where both G1 and G2 receive an equally high payoff. Before drawing any conclusions, however, let us look at the games in a bit more detail, and calculate the (strict) Nash equilibria and ESS of the games. As pointed out before, for a cell to constitute a strict Nash equilibrium, the first number in the cell needs to be the unique maximum of its column, at the same time as the second number is the unique maximum in its row (Jäger 2004: 17). This corresponds directly to Nowak's (2006: 52) method of calculation as presented above and reproduced as (100) here:

(100) (i) *A* is a strict Nash equilibrium if $a > c$.

(ii) *A* is a Nash equilibrium if $a \geq c$.

(iii) *B* is a strict Nash equilibrium if $d > b$.

(iv) *B* is a Nash equilibrium if $d \geq b$.

Assessing the three games in turn, we first find that the Old English game is in fact a symmetric game in the sense that both of the players dispose of exactly the same strategies, and position does not play a defining role concerning the payoff (Hofbauer & Sigmund 1998: 114). This means that the payoff matrices for both players can be conflated into one, namely the following (101):[197]

(101) A/B= $\begin{pmatrix} 2^a & 2^b \\ 1^c & 1^d \end{pmatrix}$

In this matrix, a is greater than c, and b is greater than d; accordingly, strategy *A* (NP) is strict Nash for both players. Furthermore, the NP-strategy also constitutes an ESS since the condition of 'either (i) $a > c$ or (ii) $a = c$ and $b > d$' is fulfilled (Nowak 2006: 53). Strategy *B*, i.e. PP, is in contrast not a (strict) Nash equilibrium ($c < a$ and $d < b$), which means that ultimately, *A* dominates *B* (Nowak 2006: 50). The same result is obtained following Hofbauer & Sigmund's (1998: Ch.6) approach. The exact steps in the formulae for deriving Nash equilibria are described in detail in their work as well as in many other handbooks of evolutionary game theory. Therefore, the calculations will only briefly be presented here, and not be given for the early ME and late ME game at all. As shown above, in the OE game we are dealing with the following utility matrices (102):

[197]Lower case letters in the matrices refer to the payoff constants as seen in the equations presented above.

(102) A [-focus] = $\begin{pmatrix} 2^a & 2^b \\ 1^c & 1^d \end{pmatrix}$; B [+focus] = $\begin{pmatrix} 2^a & 2^b \\ 1^c & 1^d \end{pmatrix}$

If we assume *p* and *q* to indicate the probability distributions of both strategies for [-focus] and [+focus]-player, respectively (103a), the most promising candidate is a distribution of 100 per cent NP for both strategy *A* and *B*, as reflected in (103b).

(103) a. $p = \begin{pmatrix} p_1 \\ p_2 \end{pmatrix}; q = \begin{pmatrix} q_1 \\ q_2 \end{pmatrix}$

b. $(\hat{p}, \hat{q}) = \left(\begin{pmatrix} 1 \\ 0 \end{pmatrix}, \begin{pmatrix} 1 \\ 0 \end{pmatrix} \right)$

Having determined this, we then have to check (i) whether '**p̂** is a best reply to **q̂**' and (ii) whether '**q̂** is a best reply to **p̂**', i.e. whether $p \times A\hat{q} \leq \hat{p} \times A\hat{q}$ (for all $p \in S_n$) and $q \times B\hat{p} \leq \hat{q} \times B\hat{p}$ (for all $q \in S_m$) (Sigmund & Hofbauer 1998: 113-114). If this is the case, then the pair $(\hat{p}, \hat{q})$ is a Nash equilibrium. For a strict Nash equilibrium, both equations need to involve 'strict inequalities', meaning that 'p ≠ p̂' and 'q ≠ q̂' (Hofbauer & Sigmund 1998: 114). As shown in the operation process in (104), and as the analogous procedure for the second player would show (if laid out here), this is indeed what we find for the OE game.

(104)

$$\hat{p} \times A\hat{q} = \begin{pmatrix} 1 \\ 0 \end{pmatrix} \times \begin{pmatrix} 2 & 2 \\ 1 & 1 \end{pmatrix} \cdot \begin{pmatrix} 1 \\ 0 \end{pmatrix} = \begin{pmatrix} 1 \\ 0 \end{pmatrix} \times \begin{pmatrix} 2 \\ 1 \end{pmatrix} = 1 \times 2 + 0 \times 1 = 2$$

$$p \times A\hat{q} = \begin{pmatrix} p_1 \\ p_2 \end{pmatrix} \times \begin{pmatrix} 2 & 2 \\ 1 & 1 \end{pmatrix} \cdot \begin{pmatrix} 1 \\ 0 \end{pmatrix} = \begin{pmatrix} p_1 \\ p_2 \end{pmatrix} \times \begin{pmatrix} 2 \times 1 + 2 \times 0 \\ 1 \times 1 + 1 \times 0 \end{pmatrix} = \begin{pmatrix} p_1 \\ p_2 \end{pmatrix} \times \begin{pmatrix} 2 \\ 1 \end{pmatrix} = p_1 \times 2 + p_2 \times 0$$

$\rightarrow 2 > p_1 \times 2 + p_2 \times 0 = 2p_1$ for all $p = \begin{pmatrix} 1^{p1} \\ 0^{p2} \end{pmatrix}$

$\rightarrow \hat{p} \times A\hat{q} > p \times A\hat{q}$

Strategy *A* is thus proven to represent a strict Nash equilibrium for both players/meanings, which means that behavioural type G1 ([+/-focus]: NP) indeed seems to be the most successful option in the first, Old English game.

In the second, early Middle English game, strategy *A* (NP) clearly dominates *B* (PP) in the case of the [-focus] player (cf. matrix A: $a > c$, $b > d$). For the [+focus] player, however, the strategies are neutral

(*a* = *c*, *b* = *d*), i.e. there is no Nash equilibrium (105). In combination, the strategy pair (106), that is, for [-focus] to choose NP, and for [+focus] to choose any strategy, turns out to be NE, but not strict NE.

(105) A [-focus] = $\begin{pmatrix} 3^a & 3^b \\ 1^c & 1^d \end{pmatrix}$; B [+focus] = $\begin{pmatrix} 2^a & 2^b \\ 2^c & 2^d \end{pmatrix}$

(106) $(\hat{p}, \hat{q}) = \left(\begin{pmatrix} 1 \\ 0 \end{pmatrix}, \begin{pmatrix} q_1 \\ q_2 \end{pmatrix} \right)$ (for any combination of q_1, q_2, with $0 \leq q_1, q_2 \leq 1$; $q_1+q_2 = 1$)

Last, as predicted above, behavioural type G2, which is strategy *A* (NP) and *B* (PP) for the [-focus] and [+focus] players, respectively, constitutes a strict Nash equilibrium in the late Middle English game. This is illustrated in (107) and (108), where for player *A*, the *NP*-strategy strictly dominates *PP* (a > c, b > d), whereas in the *B*-matrix, *PP* strictly dominates *NP* (*c* > *a*, *d* > *b*).

(107) A [-focus] = $\begin{pmatrix} 3^a & 3^b \\ 0^c & 0^d \end{pmatrix}$; B [+focus] = $\begin{pmatrix} 1^a & 1^b \\ 2^c & 2^d \end{pmatrix}$

(108) $(\hat{p}, \hat{q}) = \left(\begin{pmatrix} 1 \\ 0 \end{pmatrix}, \begin{pmatrix} 0 \\ 1 \end{pmatrix} \right)$

Summing up, if the three games are taken to represent a temporal sequence (which is of course not entirely warranted), with the fitness environment for the players and strategies changing from game to game, a change from NPs being the preferred and most beneficial option for both players (OE) to a situation in which the highest payoff is achieved if both players select for different strategies (lME) can be observed. This corresponds to a move from behavioural type G1 (NP) to G2 (NP/PP). Early Middle English in this scenario reflects a less clear-cut, in-between state in which more than one behavioural type (G1 and G2), or rather, both the OE and the late ME strategy pairs are acceptable (see Figure 44).

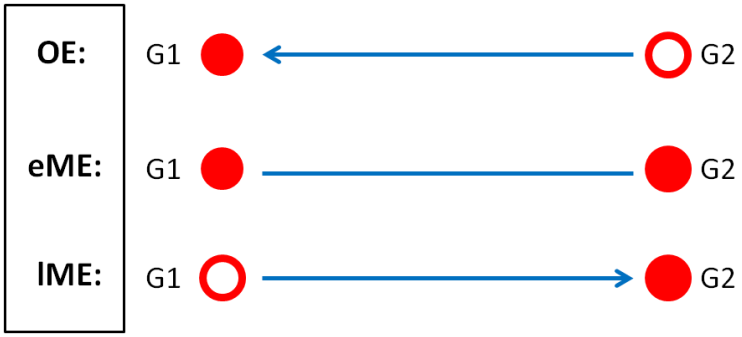

Figure 44 Depiction of the development of preferred behavioural types from game to game

To conclude, this chapter has corroborated the hypothesis that under universal pragmatic constraints relating to the principle of end-focus, changes to the system-internal environmental conditions for the replication of strategies (and constructional systems corresponding to them) can lead to symbiotic cooperation between different strategies. For the specific case of the history of the dative alternation in English, this means that a decrease in case marking salience/indicativeness concomitant to an increasing rigidity in constituent ordering could have triggered a change away from a single strategy for recipient marking in ditransitives (and core semantic role marking in general) and the development of a mixed strategy involving both synthetic and analytic means of expression (NP vs. PP). As will be shown below, I argue that these results not only provide support for assumptions made on the basis of the more traditional empirical data analysis presented above, but also further add to our understanding of the emergence of the dative alternation. Moreover, the approach taken here is thought to confirm that integrating mathematical modelling into linguistic research is valuable and can lead to interesting insights, not least because it allows one "to re-approach [an issue] from an entirely new perspective" (Ritt & Baumann 2012: 236).

PART III

6. An evolutionary construction grammar approach to the history of the English dative alternation

The main objective of this thesis is to provide an evolutionary construction grammar account of the development of the dative alternation in the history of English, with a particular focus on Middle English. That is, I aim to find a historical explanation for the synchronic phenomenon of ditransitive verbs typically appearing in two different constructions, namely the double object construction and a prepositional pattern involving *to*. This issue will be tackled in the following in two steps: first, in chapter (6.1) the innovative merged framework of evolutionary construction grammar, which constitutes a fusion of evolutionary linguistics and usage-based construction grammar, will be introduced in more detail. This will be followed by the main discussion part of this thesis, where the history of ditransitives in English will be modelled in evolutionary constructionist terms, and a plausible scenario for the development of the constructions in question will be devised (6.2). Skeching this scenario will prominently also involve an analysis of how different changes such as the loss of case marking, or the increasing fixation of word order, affected the members of the dative alternation over time. Methodologically, the account to be presented in this chapter is based on the results of the large-scale corpus study carried out within this project, as well as the outcome of an evolutionary game theoretic approach to the issues at hand.

Within this evolutionary construction grammar approach to the history of the English dative alternation, the most important concepts to be used will be those of constructional networks, constructionalisation, variation, competition and competition resolution, cooperation, niche construction, symbiosis, alternation-based productivity, mutual adaptiveness, and co-evolution. Constructionalisation in this context refers to the emergence of new constructions, often taking on similar meanings as that of already existing constructions. If this is the case, links form between these pairings, and they count as variants of each other in a constructional network. For example, variation is produced through the extension of prepositional patterns to cover new and more grammatical functions, including that of encoding ditransitive events. Through this process, the prepositional patterns are linked to the resident, non-prepositional construction, namely the double object construction. Since the two constructions can be used to express similar types of events, they enter into competition with each other. Competition can then be resolved in various ways, most prominently by either one variant being ousted, or by niche construction. The dative alternation is claimed to be an example of the latter: rather than the DOC being lost in favour of the *to*-POC (or vice versa), the constructions have developed a relationship of cooperation, in which both patterns fulfil discourse-pragmatically distinct functions. In this symbiotic 'division-of-labour'-relation the constructions stabilise each other; this can also be observed in priming and alternation-based

productivity effects. The patterns are furthermore taken to exhibit signs of co-evolution and mutual adaptiveness in their development. Once they become associated with each other, a change to one construction typically triggers a response in its variant, which in turn reacts again, etc. Such a co-evolutionary scenario is e.g. argued to have taken place in regard to the semantics of the constructions, as with the semantic widening of the POCs, the DOC became semantically narrower.

6.1. Evolutionary construction grammar

Views on the degree to which cognitive linguistic approaches in general and construction grammar in particular are compatible with taking an evolutionary linguistic perspective on language structure and language change are largely very affirmative. For instance, Hurford (2012b: 176) mentions that constructionist approaches are "more compatible with evolutionary considerations" than nativist or generativist theories. Similarly, Arbib (2012: x) claims that such approaches "may provide a more suitable framework for studying the evolution, historical change and acquisition of language", while Croft points towards the various points of agreement between the frameworks in several places (cf. e.g. 2013a: 40). The connections are implicitly also visible in the fact that Croft, as one of the major proponents of integrating evolutionary thinking into linguistics, works within a particular strand of construction grammar – namely Radical Construction Grammar, developed by Croft himself (cf. e.g. 2001, 2013b). Likewise, Steels and colleagues, who assume a fundamentally evolutionary perspective in their work, use the formalism of Fluid Construction Grammar for the operationalisation of their agent-based modelling experiments (see e.g. Steels 2011a, and the contributions therein; Wellens et al. 2013). Further explicitly fusional accounts include Wedel (2006), who outlines possible ways to integrate evolutionary ideas with exemplar-based models of language, and tackles specific issues such as phoneme mergers or splits by applying such considerations. From his perspective, combing exemplar models with evolutionary linguistics is particularly appropriate, since variation is an intrinsic part of exemplar-based categories, with the language system as a whole representing a population of exemplars/ variants (Wedel 2006: 248). Frank & Gontier (2015), as well as Pleyer (2014), Pleyer & Lindner (2014), and Pleyer & Winters (2015), in contrast, address the potential benefits in merging concepts from cognitive linguistics (including construction grammar) with evolutionary accounts. More specifically, they propose that incorporating findings from cognitive linguistics can be useful in identifying and specifying cognitive processes and mechanisms that might qualify as selective pressures in linguistic evolution (Pleyer & Winters 2015: 19). That is, evolutionary linguistics is thought to provide a meta-framework for approaching language change, language acquisition, and the evolution of the language faculty, whereas cognitive linguistic approaches deal with the more fine-grained details of the mechanisms influencing the replication and selection process. This concerns in particular domain-general cognitive mechanisms such as statistical learning, categorisation,

generalisation and schematisation, analogy, entrenchment, chunking, or automatisation, as well as sociocognitive motivations and skills like mutual coordination and cooperation, joint attention, shared intentionality, and perspective-taking (cf. e.g. Clark 1996; Christiansen & Chater 2008; Tomasello 2008; Beckner et al. 2009; Croft 2009; Hurford 2012b; Bybee 2013; Goldberg 2013; Bybee & Beckner 2014).[198]

In general, there are some relatively obvious and basic correlations between the form of evolutionary linguistics advocated in this thesis and usage-based, cognitive construction grammar. Among these are the principled view of language as a non-static, dynamic system in constant flux, the rejection of an ideal speaker and ideal system in favour of ubiquitous presence of variation, as well as the assumption that language change occurs both in adult communication and child acquisition, rather than only in the latter – cf. e.g. Bybee's conclusion that "representations are dynamic and change with usage events, not just across generations but within the individual as usage patterns change" (2013: 68). Moreover, both approaches see language as influenced by domain-general cognitive processes

[198]A good example of a negative evaluation of the compatibility of the frameworks is Rostila (2007). Drawing on Croft's (2000) notion of linguemes in his discussion of construction grammar, he concludes that "die Memtheorie erscheint zumindest aus meiner KxG-Perspektive vollkommen verfehlt [the meme theory seems to be entirely misguided, at least from my construction grammar perspective]" (Rostila 2007: 97). The author's main reasons for this rebuttal lie in the nature of the replication/spreading mechanism and the role of the speaker in this process – he vigourously rejects the assumption of imitation proceeding 'mechanically' and instead proposes that constructions are used and propagated due to speakers' rational considerations about their social values. However, Rostila's argument is misguided in two important ways. First, he seems to confuse or conflate two different processes: while it is true that imitation is assumed to operate 'automatically', this does not mean that communication is completely unconstrained and random (cf. e.g. Lass 1980; Ritt 2004). Quite the contrary, the question which variants will successfully propagate in the community is heavily determined by various factors such as social convention and prestige, physiological and cognitive factors pertaining to speaker bodies and brains, as well as systemic features, i.e. properties of the system of replicators itself. In other words, as already discussed above, while replication/imitation may proceed blindly and mechanically, selection is not random at all, but responds to various influences, i.e. linguistic variants are acted on by selectional pressures including social values (cf. also Beckner et al. 2009). Second, Rostila (2007: 93-95, 96-97) in my view clearly overstates the role of the rational speaker in language acquisition and use, claiming that the fact that speakers have and act according to their intentions, desires, and beliefs are entirely ignored by evolutionary linguists. This is, however, clearly not the case; while rational decision-making on the part of the speakers is denied, the speakers' feelings and intentions (however rational or conscious they may be) are certainly taken into account nevertheless. More specifically, speakers' cognitive states of any kind are considered as one type of selectional pressures, meaning that the variant which most successfully aids my communicative (or other) intentions will have a higher fitness, and will thus likely be used again in future discourse. Moreover, restraining the role of the rational language user in this way does not negate the fact that humans have developed a very 'powerful cognitive system' which allows us to make predictions about the intentions, beliefs, knowledge status (and so on) of our interactants (Steels 2012c: 16). Rostila's (2007: 97) demand that evolutionary linguistis need to familiarise themselves with findings from functional linguistics and sociolinguistic research thus seems to be more than unwarranted. Interestingly enough, the account mainly drawn on in Rostila's critique of the memetic/evolutionary enterprise is Croft (2000, 2001), who highlights the role of the interactor in the replication and selection process more than many other authors. It is therefore somewhat surprising that the approach is so forcefully rejected on these grounds. Although Rostila's particular take certainly represents the extreme end of the spectrum of views on the role of the rational speaker in language use, the claim of an active, rational and consciously decisive speaker is, however, implicitly or explicitly found in other constructionist accounts as well (cf. e.g. Beckner et al. 2009: 6; Pleyer & Lindner 2014: 246). Nevertheless, construction grammar is not dependent on this conception, i.e. taking a constructionist approach to language without speakers as rational agents, and without language viewed primarily as a tool or instrument used by speakers is entirely possible (cf. also Bybee 2013: 50-51; Ritt 2013b).

instead of being a separate, uniquely human capacity. Accordingly, the processes at play in language use are taken to correspond to more general mechanisms involved in other forms of human (and animal) behaviour as well (e.g. Steels 2012c: 16-17).[199]

More particularly pertaining to this thesis, I argue that an approach joining the two perspectives of construction grammar and evolutionary linguistics is appropriate and useful for the research topic at hand for a number of reasons. Most basically, an evolutionary construction grammar framework presents itself as the best choice for the operationalisation, analysis, and explanation of the phenomena in question, since I am mainly dealing with syntactically complex patterns (namely the argument structure constructions of DOC and (*to*-)POC) and since the history of these constructions involves competition between variants on many levels. More detailed reasons include the following:

Starting with construction grammar, this framework is in the present thesis mainly employed as a heuristic. If we want to assess the development and use of particular patterns (such as the members of the dative alternation) in a language, it certainly pays off to have a very clear conception of what constitutes a linguistic sign, how the various parts making up a sign are connected, and what the individual elements contribute. All of these criteria are fulfilled in construction grammar. As was seen above, the definition of linguistic units in this framework is very straightforward: constructions represent pairings of form/structure and meaning/function, i.e. formal features of a sign are stored together with its functional properties and a symbolic correspondence link between these components. A construction such as the DOC, for example, relates a structure of [NP_X V NP_Y NP_Z] to a meaning of 'X causes Y to successfully receive Z', further specifying discourse-pragmatic aspects like 'Y is (prototypically) given', and 'Z is (prototypically) new'. By contrast, the *to*-POC pairs a form of [NP_x V NP_Z *to* NP_Y] with a sense of 'X causes Z to move to Y, who thereby receives Z'. In this case, Y is typically new, while Z refers to a discourse-given entity (cf. e.g. Goldberg 1995). The strong emphasis on distinctive (syntactic) units that characterises construction grammar clearly matches the central importance of replicating units in evolutionary linguistics.

Usage-based construction grammar as a framework in which the actual usage of such constructions plays a fundamental role is then particularly practical, due to the empirical focus of this thesis lying on patterns that are identifiable on the surface, i.e. in texts. That is, this approach lends itself better to the investigation of changes in usage than a framework whose main agenda is the identification of universal constraints on grammar design. The great interest in frequency within usage-based construction grammar is a further clear advantage in this regard, as it combines well with an evolutionary approach that attempts to account for the stability of patterns and requires to measure or estimate their frequency in populations.

[199]As Steels (2012c: 16) so nicely puts it: "Biological evolution gets physics and chemistry 'for free'. Linguistic evolution also gets something for free, namely cognition".

Finally, a compelling argument for using construction grammar is that it conceptualises patterns as being integrated in a network, with whose constituents they interact. This is particularly interesting for the present thesis in its focus on the emergence of the dative alternation, which is taken to constitute a constructional network involving the allostructions DOC and *to*-POC as well as a more schematic ditransitive constructeme (cf. Cappelle 2006; Perek 2015). The network structure posited in this approach also facilitates the conceptualisation of co-evolutionary interactions between constructions; for example, the members of the dative alternation can be assumed to co-evolve and adapt to each other.

It is also clear that a great amount of work has been carried out already within construction grammar on the issue of how constructions are acquired, used and change throughout time. Often-used and relevant concepts such as reanalysis and analogy, entrenchment and productivity, or construal and perspective, have been incorporated in the framework and have thereby received firmer theoretical as well as empirical grounding. These notions are also central to any discussion of ditransitives in Present Day English and in the history of English: for instance, the development of prepositional patterns to include recipient marking in their function certainly involved reanalysis processes (e.g. from spatial goal to recipient), while analogy aided and furthered the spread of the innovative meanings. The higher type and token frequency of transfer verbs, and accordingly the higher entrenchment of this particular sub-sense of the DOC, on the other hand, was probably responsible for this meaning to persist, while sub-senses more peripheral to this meaning were lost. This move to a more basic transfer-meaning also had a clear effect on the productivity of verb-classes associated with the DOC – while the more central sub-constructions are highly productive (cf. e.g. communication verbs), more removed sub-constructions have become unproductive (e.g. verbs of refusal such as *deny*). Working with well-developed definitions of such concepts, based in a particular theoretical approach in which they play an important role, is therefore certainly valuable for the analysis of ditransitives in English and their history.

Evolutionary linguistics, on the other hand, is used here as an explanatory rather than a descriptive tool. Starting from the assumption that linguistic elements such as the DOC are present in PDE because they have managed to successfully produce copies of themselves at a higher rate than old copies fade, and have moreover successfully competed against other variants, the question why this should be the case can then be tackled in a very systematic way. For instance, this can be done by looking at a clearly defined range of factors that determine the success of linguistic replicators. These pressures can be divided into different types, namely cognitive-physiological, social, and intra-systemic ones. The first two of these allow us to systematically capture the often-mentioned but highly variable ‘speaker needs’. While cognitive-physiological factors include human cognitive biases or preferences such as the tendency towards ease of articulation or perception (economy vs.

explicitness), social pressures relate to social values of certain variants, group conformity, and the like. Both types of factors can be drawn on to explain the success of certain replicators over others. Investigating intra-systemic factors, on the other hand, means that the fate of individual constructions can be analysed and explained in the context of other, connected constructions in the network. An evident benefit of this practice is that instead of being overwhelmed by the complexity of the linguistic system and changes to it, related constructions can simply be regarded as environmental pressures, similar to cognitive factors. Taken together, we arrive at a still highly intricate and complex, yet more systematic and transparent model of language change, which in my view also provides a sounder basis for explaining specific linguistic changes.

In general, the application of evolutionary concepts (such as competition between replicator variants, the resolution of which can also lead to mutualistic cooperation between variants) to issues in linguistics can add to our understanding of mechanisms and developments observed in language change. Although e.g. the notion of 'competition' is already occasionally drawn on in all kinds of linguistic frameworks including construction grammar (cf. e.g. Traugott & Trousdale 2013), evolutionary linguistics as understood in this thesis takes things a step further: rather than using such terms metaphorically, and treating correspondences between biology and language as mere analogies, competition between linguistic variants is thought to be fundamentally subject to the same general evolutionary mechanisms as biological ones. Connecting language and language change to other domains in this way may then also be profitable since we can gain from progress made in these other fields.

In sum, I argue that combining the two approaches is not only possible, but also of advantage to the present research project and to (historical) linguistic investigations in general. A joint approach is also beneficial for both sides in providing a new, and possibly more enlightening, perspective on various issues. This is because the decision to study language in evolutionary terms does not remove the necessity of an analytic framework by which linguistic constituents or units can be identified, distinguished, categorised and related to one another. On the contrary, since evolutionary changes always involve changes in the number of 'tokens' representing (potentially competing) 'types', it is crucial for any evolutionary approach to language to employ a framework that allows one to identify constituent types, and to decide when a specific token represents an instatiation of it. Construction grammar represents a highly suitable framework for that purpose, because 'constructions', which play a central role in its conception of grammar, represent cohesive, yet at the same time internally structured units whose internal structure allows them to be distinguished from one another and to be categorised into different types, and whose instantiations in texts can be counted. Thus, an evolutionary approach to language combines well with a framework such as construction grammar. Conversely, construction grammar clearly profits from being applied in evolutionary accounts of

linguistic change, because evolutionary theory represents the most coherent and best-understood framework for studying the diachrony of 'units' that are instantiated in terms of populations of copies and that are transmitted under environmental constraints.

To conclude, I am convinced that a joint framework is useful because it supplies evolutionary linguistics with a highly developed analytic framework and provides construction grammar with an explanatory framework for diachronic investigations. Nevertheless, and although the frameworks seem to be compatible in many ways, it will be shown that the attempt to merge them also raises some problematic issues, which this thesis will attempt to tackle. This is done in the following sections. First, in section (6.1.1), the focus will be on the very basic questions that arise when trying to fuse evolutionary linguistics and construction grammar, namely the following:

i) What do we assume as linguistic replicators/the unit of replication in language?
ii) How does variation arise?
iii) How does selection proceed? What factors determine replicative success?

For instance, it will have to be decided whether it is constructions or parts of constructions that constitute replicators, whether constructions at all degrees of schematicity replicate, and whether replicators are actual constructions in usage or rather their mental representations. As to the second point, the notion of constructionalisation will be drawn on, and it will be determined to what extent this concept is compatible with the concept of emerging variation in evolutionary linguistics. Finally, the types of factors influencing the success of variants over others will be discussed.

Subsequently, in section (6.1.2), I will attempt to relate these issues to Steel's (2007, 2010, 2011b, 2012b, 2012c) model of language evolution by linguistic selection, which distinguishes between selection on the level of language strategies and on the level of paradigmatic choices in language systems, i.e. constructional variants.[200] Last, the main principles of an integrated evolutionary constructionist framework, to be followed in the rest of this thesis, will be restated and summed up (6.1.3).

6.1.1. Main questions in evolutionary construction grammar

Arguably the most essential question in trying to integrate evolutionary linguistics and construction grammar is the question of how to define and identify plausible units of transmission and selection, i.e. constituents that emerge, are transmitted, give rise to variants, and are sometimes lost in linguistic evolution. In short, the nature of linguistic 'replicators' needs to be determined. This necessity is also pointed to in Hruschka et al. (2009: 467, Box5), who inquire about "What is actually changing? Forms, functions, form-function mapping, rules, and/or exemplars?". As far as constructions are concerned, there are three (interrelated) dimensions on which to address this issue: first, we have to determine

[200]Cf. also e.g. Bleys & Steels (2011), van Trijp (2012), and others.

whether it is parts of a construction (form or function) that are replicating, or whether it is the construction as a whole (form and function, and the link between). Closely connected to this is the debate of the nature of a replicator present in evolutionary linguistic accounts as presented above – is it the external behaviour, i.e. the utterance, that constitutes a replicator, or is it rather the internal cognitive representation, meaning neuronal patterns in the brains of speakers? Framed in constructionist terminology and conceptual inventory, the choice in regard to this dimension is thus between constructs (concrete actual tokens in usage) and constructions. If we assume that the latter is the case, a further question then raises itself, namely whether it is lowest-level constructions only that replicate (micro-constructions, which roughly correspond to exemplars, or stored categorised token memories),[201] or whether more abstract, higher-level constructions qualify as replicators as well. Related to this last point (at least in some aspects) is furthermore the potentially problematic issue of the discreteness of replicators.

As regards the first of the dimensions involved, the most straightforward option is to consider the whole construction as a pairing of meaning and form as the replicator. The main reason for this is that both form-only and function-only replication are difficult to conceive if the choice is not taken to correspond to the question between external and internal replication. Form-only replication is, for example, doubtful considering idiomatic expressions which are formally equivalent to less idiosyncratic, more compositional constructions (cf. *kick the bucket* 'die' vs. *kick the bucket* 'hit a round open container with your foot'). The idea of function-only replication, on the other hand, seems hard to maintain when taking into account highly atomic constructions such as individual phonemes, which arguably have a very abstract meaning only, or rather only have the function of differentiating meaning (cf. also the discussion in Ritt 2004: Ch.6.1). I would therefore argue that form-meaning pairings of various sizes and degrees of complexity represent the most appropriate and easiest to argue for options for linguistic replicators. This selection also does most justice to the focus on constructions inherent to construction grammar approaches. The idea of constructions as replicators is in fact also the route taken by Croft (2013a: 42), who states that "they [i.e. constructions] are independent linguistic replicators that specify properties of their component parts". Interestingly enough, however, this assumption is highly problematic for Croft's own account, as he also acknowledges himself (at least to a certain extent): seeing grammar as symbolic, with constructions as symbolic signs combining form and meaning, and taking such constructions to be linguistic replicators appears to be rather incompatible with Croft's concept of linguemes, i.e. replicators as utterances (2013a: 42). That is, drawing on the second dimension as mentioned above, if Croft assumes replicators to be acoustic

[201]There is of course no full correspondence between these concepts; however, the definitions of both terms also vary between accounts or are in fact relatively vague anyway. I will therefore continue to use the terms interchangeably.

signals rather than mental representations, this necessarily entails that it is constructs rather than constructions that are replicating. Although Croft admittedly does not stick to the terminology used here, it nevertheless seems that there is a certain conflict in his assumptions, and even if the inconsistency could be resolved, a less ambiguous definition of what we are actually dealing with is certainly desirable.

In general, the notion of replicators as utterances is rejected in this thesis, since as explicated above, it can hardly account for the structured nature of linguistic elements (cf. Chapter 5.1; Ritt 2004). However, following the tenets of usage-based construction grammar, namely that all cognitive representation of language is crucially influenced and shaped by usage, it is similarly problematic to argue for replication to involve mental, 'brain-internal' elements only. The basis for a compromise solution in this respect is provided by McCrohon's (2012) distinction between i-replicators and e-replicators. Applying this proposal to language as envisaged by usage-based construction grammar, e-replicators would then correspond to constructs, meaning actual tokens in single usage events (cf. Traugott & Trousdale 2013). I-replicators, on the other hand, correspond to cognitive patterns, and therefore to constructions. It is at this point where the third dimension on which decisions have to be taken comes into play: i-replicators can be thought of as either micro-constructions only, or as encompassing constructions at all levels of schematicity. In the latter option, any member of the constructional network, whether substantive or abstract, would constitute a replicator and would therefore be able to compete against other constructions.

Arguments for both posibilities can easily be found. On the one hand, the former approach seems to be intuitively more appropriate, since replication essentially takes place between micro-constructions and constructs – replication involves the memorisation and storage of an encountered acoustic sign (e- to i-replication) or the (re-)production of a stored memory (i- to e-replication). Abstract generalisations over individual usage events (subschemas and schemas at various 'heights' in the constructional network/ exemplar clouds) can on this account hardly replicate on their own, but are always dependent on expression 'via' lower-level, completely filled micro-constructions, and their formation and storage is a secondary process. Furthermore, individual tokens are discrete rather than fuzzy, whereas categories or constructions are assumed to be gradient at least to a certain degree. Since discreteness is an important defining feature of replicators in the Dawkinsian tradition (cf. also Ritt 2004), this factor would clearly speak in favour of micro-constructions as replicators. On the other hand, limiting replicators to the lowest level seems rather restrictive, and also entails that it is only micro-constructional tokens that are able to compete against others. This assumption, even if not necessarily theoretically problematic, seems to be practically inconvenient for linguistic investigations of many kinds. Also, it calls into question the relevance of higher-order constructions, and the part played by them in language use.

A possible solution to this predicament is to follow an essentially 'micro-construction as i-replicator' account, but at the same time take into account the possibility of higher-order constructions nevertheless being activated in any encoding/production or decoding/perception event. In other words, I will presume in the following that while the replication process proper only concerns the level of exemplars as such, once abstractions have formed, each replication event involves the activation of whole parts of the constructional network. Replication on the brain-internal level therefore almost always means replication of what could be called 'i-replicator-plexes'. Importantly, however, higher-order constructions cannot replicate on their own but are always dependent on lower-level instantiations. To illustrate this proposal, we can draw on the example of the DOC: the abstract double object construction [[NP_X V NP_Y NP_Z] / ['X causes Y to receive Z']] as well as the lower-level (verb-class-specific) 'intended transfer'-construction [[NP_X V_{int} NP_Y NP_Z] / ['X intends to cause Y to receive Z']] and the verb-specific construction [[NP_X *promise* NP_Y NP_Z] / ['X promises to cause Y to receive Z']] do not replicate independently, but are nevertheless activated as soon as they are instantiated by a construct such as *John promised me a chocolate cake* in usage. While only this particular clause is in fact replicated, its production and perception involve a range of other constructions at all levels of schematicity (like those exemplified). These constructions can therefore be said to replicate 'through' their concrete instantiation; together, they form replicator-plexes. I will in the following nonetheless often take a shortcut and refer to e.g. the replicative success of the schematic DOC. It should be understood that this then still refers to the fitness of the specific micro-construction the higher-level pattern is replicated through, and which is instantiated in use by a construct.

Note that these assumption are possibly at odds with Wedel's (2006: 249) notion of evolutionary exemplar theory. On Wedel's account, non-discrete, gradient categories constitute replicators, or rather, we are dealing with "a system that has no real independent replicators, but simply consists of a distribution that replicates each point along the distribution in each generation by interpolating gradiently between all nearby points" (Wedel 2006: 249). In the present account, by contrast, discreteness of replicators is retained as it is individual exemplars composing a category that are involved in replication proper. At the same time, the account allows for a certain 'fuzziness' of categories in the sense that abstract constructions can relate to a range of different lower (as well as horizontally near) constructions with varying degrees of strength of the links, which might give the impression of gradience. Furthermore, gradience of categories is always present at the population level, since individual speakers will never completely overlap in their precise representations of specific labels. That is, gradience emerges in a speech community as a result of variation in the distribution of exemplars across different speakers.

The process of replication itself, following McCrohon (2012), as well as Wedel (2006), involves both production and perception. In the former, i-replicators (micro-constructions) are drawn on to

create e-replicators (constructs), whereas the latter process involves e-replicators activating i-replicators in the listener's brain. Repeated activation leads to increased entrenchment of the respective i-replicators, which positively impacts the probability of the construction to be activated again in the near future, and thus the likelihood of the corresponding e-replicators to be produced as well (cf. e.g. Croft 2000: 236; Croft & Cruse 2004; Hoffmann 2013; Traugott & Trousdale 2013; Frank & Gontier 2015). Furthermore, frequently activated patterns will more likely be extended to other contexts, meaning they have an increased productivity. For instance, the sub-sense of 'communication' with the DOC is frequently expressed in usage, and this sub-construction is therefore taken to be highly entrenched. This in turn positively influences the future activation rate of this particular construction, and also its productivity, as new verbs can easily be added to the construction in analogy to its resident members (cf. e.g. the use of new communication verbs such as *whatsapp* or *skype* in the DOC).

While the fusion of frameworks in regard to the unit of replication therefore does not posit any overly problematic issues, the emergence of variation is more of a minefield. More specifically, the assumption of the initial locus of innovation being the interface of the construct and micro-constructional level is perfectly compatible with what has been outlined so far. The relation between variation through altered replication and the distinction between constructional change and constructionalisation as proposed by e.g. Traugott & Trousdale (2013) is, however, decidedly more difficult to specify. This is due to the fact that if we consider whole constructions to be replicators, it follows that any change to an aspect of the construction generates a variant replicator, which competes against the original entity. However, this is not the case in the Traugottian (and others') approach: here, a new constructional node, i.e. a new replicator, is only created when both the form and the meaning parts of a construction have changed. If these assumptions were to be integrated, it would either mean that constructions cannot be replicators after all, but only parts of the construction, and that the acquisition of replicator (variant) status is not equal to developing construction status, or that variation is really only generated once innovations on both levels have taken place. Accordingly, a construct being stored with a different meaning than intended by the speaker and differently to the meaning present in the user's mind before would not yet cause variation in the system, and would not result in competition between variants. This then implies that if e.g. a specific sentence like *John brought a book to the church*, in which the PP is associated with a meaning of 'GOAL' in the speaker's mind, is analysed and stored as involving a 'RECIPIENT' by the listener alongside other instances of this kind (or even the same expression) with a GOAL-interpretation, there is no competition between these variants. A new node would only be created only when a formal change ensues.

It appears that there are two interconnected issues that need to be dealt with in this regard. First, we need to differentiate between competition and selection between variants on the level of the individual language user on the one hand, and on the population level on the other hand. Second,

there seems to be an inherent contradiction surrounding the notions of synonymy and polysemy in construction grammar. As regards the propagation of innovations in a population, in order for them to be able to compete, they need to affect the formal side of constructions, as they go unnoticed otherwise. Changes in form, which importantly also include changes in the collocational range of a particular element (e.g. host-class expansion) in construction grammar necessarily entail changes in function (see the 'principle of no synonymy'). Therefore, this innovative variant would constitute a new construction in any case, with pre-constructionalisation changes only applying to the individual mind.[202] That is, if synonymy is ruled out a priori, variant forms can never really compete for the same function. Consequently, we either need to accept $form_{new}$-$meaning_{old}$ pairs as an independent variant replicators competing with $form_{old}$-$meaning_{old}$ pairs, or allow for constructional synonymy in the sense of one meaning being linked to two forms ($form_{old/new}$-$meaning_{old}$), or consider the experiment of integrating the frameworks as essentially futile. On the other hand, if competition between variants for expression or activation is thought to take place also within the mind of an individual speaker, linking an encountered form to a different meaning than done before ($SEM_1 > SEM_2$) would lead to a polysemous construction. This is in turn difficult to incorporate in an account that disallows (or argues against) constructional polysemy but instead posits schematicity hierarchies on the basis of collocational, i.e. formal, distinctions (cf. Croft 2003; Barðdal & Gildea 2015). In fact, a change in meaning in constructionist frameworks is unavoidably accompanied by a change in form, and vice versa. While assuming a temporal and causal sequence in alterations to either side still seems plausible and appealing, the difficulties in actually assessing these changes separately (also in empirical data) unfortunately render the distinction between constructional change and constructionalisation somewhat void. The proposal is furthermore problematic to incorporate in an evolutionary framework. Thus, I will refrain from clearly differentiating between these types of changes in the following, but work under the assumption that changes to one aspect of a replicator-construction always lead to the addition of a new variant, i.e. a new construction in the network, which enters into competition with the older one.

As to the triggers of emergence of variation, there is no real conclusion to be drawn on the basis of constructionist accounts – both considering innovation to be random as well as innovation driven by functional motivations, as proposed by Croft (2000, 2013a), seems to be readily compatible with constructionist ideas. As detailed above, I will thus continue to take innovation to be random, since the likelihood of mutations to occur is not causally related to their ensuing fitness (Rosenbach 2008: 39). Despite acknowledging the possibility of entirely blind innovations to occur, altered replication is,

[202]This conclusion is of course not entirely warranted, since the principle of no synonymy does not preclude the possibility of synonymy of constructions, but only really claims that languages tend to shy away from synonymy.

however, thought to be influenced by the main mechanisms identified in constructionist accounts, including analogical thinking, priming, as well as spreading activation, among others.[203]

Independently of how variation emerges, the successful propagation of specific innovations in a community is determined by selectional factors, defined by Wedel (2006: 252) as:

> Any factor[s] that influence[] the likelihood that a given exemplar will participate in production or that influence[] the way a given percept is likely to be categorized will influence the direction in which the category system updates over time. Exemplars that are more 'fit' by these criteria will leave a greater trace in the future behavior of the category than exemplars that are less fit.

These various selective pressures 'implicitly intervene' in the production and perception of the replicator, meaning that in every communicative event those replicators are chosen which appear to be the best solution in the respective case (Steels 2012c: 14). The success of the selected variant is then monitored and registered in memory via self-enforcing causal loops, which can increase or decrease the likelihood of future use of the particular element within individual speakers as well as the speaker population as a whole. That is, success in replication corresponds to repeated and frequent activation and use, which leads to an increased entrenchment of the construction in question, as already pointed out above. As Steels points out, "there is [furthermore] a cumulative effect because solutions that have been successful are maintained in the population, enabling their further use as building blocks for tackling more challenging communicative goals in more demanding contexts" (2012c: 15).

With regard to the types of selectional pressures determining the success of variants, I take these to comprise physiological-cognitive aspects, systemic factors, as well as factors pertaining to the social dimension of communication, as repeatedly mentioned above. In this context, there are clear mutual benefits of integrating evolutionary linguistics and construction grammar: cognitive and usage-based linguistics (and with that, construction grammar) provide insights on the specifics of domain-general cognitive, as well as socio-cognitive factors and motivations at play in language use (or acquisition). Furthermore, the network-character of linguistic knowledge is highlighted and specified in construction grammar, which allows for a ready and accessible assessment of intrasystemic factors determining the success of variants. Among the former, factors that may aid the propagation of individual replicators and thus increase communicative success are learnability and expressivity (or expressive power/adequacy), as well as the cognitive effort that is involved in producing or parsing a construction (cf. Steels 2007, 2010, 2012c; Smith, Tamariz & Kirby 2013). An assessment of the impact of such factors is presented in van Trijp's (2013) experimental investigation of the definite article paradigm in the history of German. Taking into account the specific factors of cue reliability, ease of

[203] The role of priming as a cognitive mechanism in both faithful and altered replication is discussed in detail in Rosenbach (2008: 55-62).

articulation, auditory distinctiveness, and processing efficiency, he demonstrates that case syncretism has led to an 'improved', more economical system in respect to processing as well as perception and pronunciation, while at the same time retaining the language's power of disambiguation (van Trijp 2013: 105). In other words, within the system of definite articles, some (such as OHG *dër* or *diu*) were more successful than others (e.g. OHG *dëro*), due to their better performance concerning e.g. ease of articulation. On the other hand, they still possessed enough expressive power to prevent the system from collapsing. Similar cognitive biases are mentioned time and again in many (usage-based) constructionist accounts, and play a particularly important role in functional and usage-based approaches compatible with constructionist thinking (cf. e.g. Goldberg 2006, 2013; Bybee 2010, 2013; Hoffmann 2013; Bybee & Beckner 2014, *inter alia*; cf. also Hruschka et al. 2009).

As to intrasystemic factors, it is assumed that "[t]he structure of a language itself can also bias the use of one variant over another" (Hruschka et al. 2009: 467, Box3; cf. also Wellens et al. 2013). This presumption fits well with, for example, the concept of alternation-based productivity as explicated above (cf. Perek 2015). If the use of one participant of the dative alternation positively influences the probability of the other variant to be used in succeeding discourse, systemic factors as well as physiological-cognitive ones can be taken to be at play. Moreover, constructions typically do not occur in isolation, but rather form part of larger patterns. For instance, case affixes are dependent on other elements as well as larger argument structure constructions to be produced, and are consequently also influenced by the reproductive success of the latter (e.g. van Trijp 2012).

At the same time, construction grammar has often been criticised for not paying sufficient attention to the social values of constructions, and the social dimension of communication, despite generally stressing the communicative function of language.[204] As is well known, however, the use of particular linguistic features can signal group identity, or conversely function to distance a speaker from membership in a certain group. The degree of social conformity, as well as prestige and status of a replicator is therefore certainly a criterion to take account of (cf. Steels 2010, 2012c). Also, the structure of the population of speakers usually plays a role in the propagation of a replicator; this factor, which roughly corresponds to the criterion of 'coherence' in van Trijp (2012: 189), is especially highlighted in accounts such as Beckner et al. (2009) as well as Hruschka et al. (2009) and Blythe & Croft (2012). The constructionist shortcoming of neglecting such issues is remedied by the inclusion of social factors and population structure as one type of selectional pressures influencing the fitness of a particular replicator.

[204]Cf. e.g. Rostila (2007) for a comment on this issue.

6.1.2. Selection of language strategies vs. selection of language systems

As already mentioned above, a framework that is particularly interesting for the present thesis is Steels and colleagues' *selectionist theory of language evolution*, also referred to as *recruitment theory of language origins* (Steels 2007, 2010, 2011b, 2012c; Bleys & Steels 2011; van Trijp 2012; among many others). In a nutshell, this theory proposes that

> human brains are capable to dynamically recruit various cognitive mechanisms and configure them into strategies for handling the challenges of communication in particular environments. The configurations are retained if they increase communicative success and expressive power while minimising the effort involved (processing time, memory resources, etc.). (Steels 2007: 145)

More specifically, Steels distinguishes between two different levels at which language evolution takes place, namely language systems on the one hand, and language strategies on the other hand (2012c: 4). The former correspond to the more traditional notion of paradigms, referring to sets of particular linguistic choices, i.e. (parts of) networks of horizontally related constructions. Typically, a construction hence does not form part of one subsystem only, but instead incorporates parts of various distinct language systems. A case in point is case marking systems such as the German or Old English one – in a German sentence that includes case markers, other systems such as argument structure systems or tense systems are typically drawn on as well. Further examples of linguistic systems include colour systems in different languages, or (tense-)aspect systems such as that of Russian. Language strategies, in contrast, constitute 'instructions' to form, extend, and also adapt constructions so that a specific communicative goal can be reached (Bleys & Steels 2011: 152). That is, language strategies comprise components for dealing with the formation, learning and alignment of language systems (Steels 2010: 5-6; 2011b: 345). As discussed in van Trijp (2012), for example, German speakers are assumed to have a 'case strategy' for handling the concrete instantiations of participant roles that form the case system of German. Importantly, languages can vary in the strategies that they employ, with e.g. Japanese using a particle system to express participant roles instead of a case system. Even if they apply the same strategy, however, the systems that are formed by means of the strategy may differ substantially (cf. the differences between the German and the Old English case system). Finally, languages frequently use more than one strategy for a particular domain: Present Day English, as will be discussed in more detail in the final chapters of this thesis, for instance employs word order in combination with prepositional phrases to express core semantic roles, while at the same time retaining some minor traces of the Old English case system (Steels 2012c: 5-6).[205]

As to the ontology of these language strategies, it is mentioned that in the agent-based experiments conducted on the basis of these assumptions, they are operationalised as objects in the

[205]As Steels (2012: 6) points out, and as is well-known, the term 'strategy' as used in this regard is common in typological studies.

memories of the language users. More specifically, constructions learnt and used by the agents are tagged, specifying which strategy was used to acquire (or develop) them (Bleys & Steels 2011:254). Steels (2010: 5-10) draws on the distinction between genotypes and phenotypes in biological evolution, taking strategies to correspond to the former, and systems to the latter, but does not comment on the material or non-material basis of either. Elsewhere, however, it is specified that communal language strategies, which are shared by a majority of the members of a speech community, "emerge out of the collective activity of all individuals and is [sic] not explicitly accessible nor represented" (Bleys & Steels 2011: 152). This implies that strategies are fundamentally distinct to the choices within systems, which on our account constitute concrete neuronal activation patterns in individual brains. Rather than being physically real entities, language strategies are thus comparable to e.g. food foraging patterns arising from the collective behaviour of ant colonies without having a material basis in the mind of a single ant. Nevertheless, such a definition of strategies does not preclude the possibility that some speakers might form highly abstract 'strategy-like' constructions such as [[core semantic roles] / [case]], translatable as 'use case for marking core semantic roles'.

Change can then affect both systems and strategies; as to changes at the system level, these basically correspond to what was mentioned above in respect to changes in the constructional network (cf. also Traugott & Trousdale 2013). For example, the complexity or range of choices that are adopted may increase or decrease, i.e. constructions can be added or lost to the paradigmatic network. On the other hand, existing constructions may change in their semantic or form, meaning that the 'semantic territory' covered by a certain choice may grow or shrink. Yet another possibility is that the formal marking of a feature change (Steels 2012c: 7-8; cf. also Steels 2010, 2011b). Importantly, however, such changes do not affect the underlying system and the strategy building it, but only the specific make-up of the system. The collapse of the dative and accusative case in Old/Middle English, for instance, with the accusative form in many cases encroaching on the functional domain of the dative, did not change the fact that Old English had a case system, but merely changed its structure. Nevertheless, "changes in a language system can be very significant and may lead to a ripple effect destabilizing other language systems and eventually requiring the introduction of new strategies" (Steels 2011b: 346). That is, if many micro-changes accumulate into more systematic, larger-scale changes, this can trigger changes on the level of strategies that are used to maintain different subsystems, with individual strategies emerging or disappearing. A particularly apt example in this regard is the expression of core semantic roles in the history of English. While Old English mainly employed a case strategy, as already mentioned, early Middle English saw the emergence of additional strategies such as prepositional phrases and fixed word order (cf. also Chapter 3 above). Further examples of this kind are abundant in the development of the world's languages – compare van de Velde's (2014) discussion of verbal syntax and semantics in the history of Dutch, which can also be read

in terms of strategy competition. As can be seen in Figure 45, this language's history was characterised by a loss of old and an establishment of new links between formal strategies (such as case, prepositions or voice) to express particular semantic relations (e.g. agentivity of experiencer or Aktionsart).

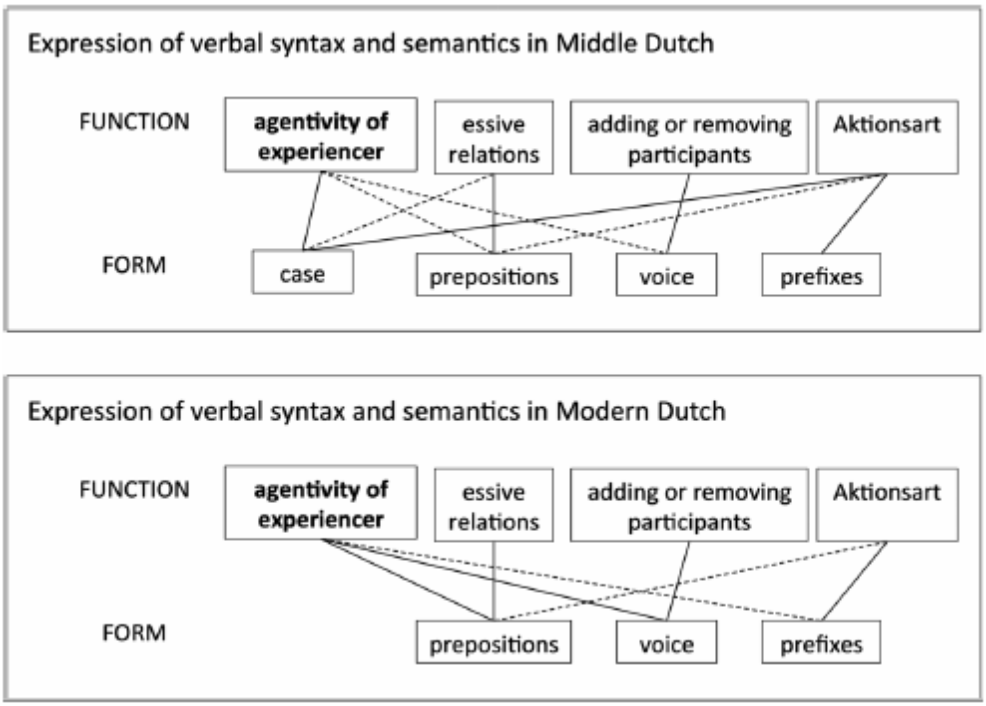

Figure 45 Diachronic degeneracy in the argument realisation of experiencer predicates in Dutch (Van de Velde 2014: 174)

If more than one strategy is present in a population, these strategies frequently cooperate and coexist side by side, with one typically being more successful in certain contexts than in others. Another outcome of competition between strategies is dominance of one and loss of the other, due to the benefits for speaker populations that lie in sharing a default strategy for the same type of problem (cf. Bleys & Steels 2011: 153-154).[206] As has been shown in the evolutionary game theoretic approach above, this is particularly relevant for this thesis, as the strategies involved see a great deal of competition as well as cooperation. Even if a strategy comes to be dominant in part of a speaker population, though, it is not necessary for a whole community to 'agree' on the same strategy. As usually seen in dialect variation, multiple solutions can remain available in a larger population, with some parts converging on a distinct strategy (or combination of strategies) than others. In general, Steel's approach thus coincides with the main tenets of (diachronic) usage-based construction grammar in that change is assumed to be gradual, both in the sense of smaller-scale changes

[206]Strategies of course do not compete directly with each other, but rather do so "through the use of the language systems that they enable their users to build" (Bleys & Steels 2011: 155). Although it is clear that by omitting details, information and a certain clarity is lost, I will continue to do so for the sake of economy and improved reading flow.

incrementally leading to larger-scale changes, as well as concerning the fact that innovations propagate through a community at different speeds (Steels 2012c: 8-9).

Which constructions or strategies are able to replicate successfully and thus remain in a population is determined by the selectional pressures mentioned above, i.e. linguistic selection operates on variants on both levels, paradigmatic choices and strategic variants for the same function. Selection is conceptualised in Steels (2012c) as a process of 'testing' variants according to their performance in regard to particular selective factors. A crucial point is furthermore that the result of selection and the frequency of a variant are connected via a self-enforcing causal loop, making the process cumulative (Steels 2012c: 12; cf. also Garrod et al. 2007; Fay et al. 2010; Steels & Loetzsch 2012). As to selection on the level of systemic choices, those constructional variants (or rather, their concrete instantiations in production and comprehension) that result in higher communicative success due to having greater expressive adequacy, requiring less cognitive effort, or being more learnable and more conforming to social convention, will have a higher probability of being re-used in future communication events. Being more entrenched, they are likely to be activated again (cf. e.g. Bleys & Steels 2011: 153-154). Regarding competing strategies, those that maximise communicative success on the basis of the same criteria as just mentioned will again be retained and propagated even further, with self-enforcing causal loops via communicative success acting on the strategy (cf. Figure 46; Steels 2012c: 14-17). This view directly corresponds to usage-based, bottom-up approaches like the version of construction grammar used in this thesis, which share the fundamental assumption that actual linguistic experiences affect the mental representation of language. Figure 46 demonstrates how such feedback-loops in linguistic selection can be imagined. While the communicative success of specific systemic choices has a short-term effect on the system, and potentially alters its structure, the success of variants within a system generated and maintained by means of particular strategy can on a long-term basis also influence the strategy itself, and thus possibly causes it to be overtaken by a different strategy.

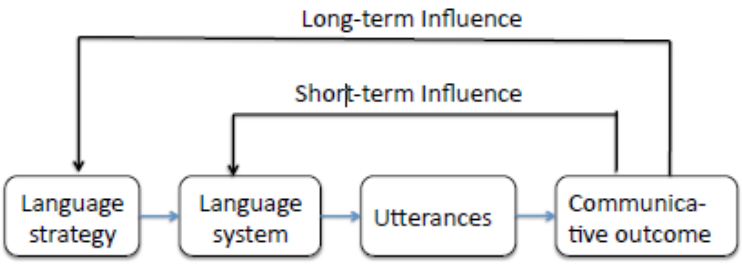

Figure 46 Feedback loops in linguistic selection (Steels 2012c: 16)

As Steels (2012c: 17) points out, language change is accelerated and the selection process is manipulated by cognitive processes allowing language users to monitor language processing as well as

its success. More specifically, in processing constructions the first step is that a layer of routine processing is drawn on; this is based on the stored (i.e. available) language systems in a language user's brain. If there is a clear solution, the default layer is applied, and nothing much happens. However, a second layer of 'meta-level processes' is always activated as well. These processes monitor the processing event on the basis of 'diagnostic procedures' and can instigate repair strategies in cases of mismatches or other failures in communication. For example, in encountering novel or unusual uses of a form, hearers might search for partial matches (constructions partially sanctioning the new construct) in the network, or indeed create new nodes. Other strategies include e.g. the reduction of word forms in order to reduce cognitive effort (cf. Steels 2012c: 19-20).

Linguistic selection is furthermore sped up by the collective process of self-organisation based on alignment, that is, on an increased coherence among the systems available to members of a speaker population. As demonstrated in Steels (2012c: 21-22), alignment can be achieved by various strategies, including priming effects or routinising ('chunking' in Bybee's terminology). The fact that populations of linguistic constituents typically show a large degree of coherence despite alignment always only taking place between individual participants in communicative events can be explained by self organisation. This refers to "a property of a certain class of distributed systems, namely, systems with a multitude of elements which each autonomously behave in a particular way" (Steels 2012c: 22).

The particular predictions made by this approach or rather, questions such as 'how can strategies emerge and propagate' or 'how are systems built given a strategy' that arise in taking such an approach have been addressed and tested in various experiments involving agent-based modelling (cf. e.g. van Trijp 2010, 2012; Beuls & Steels 2013; Lestrade 2016). Of particular interest to the present thesis is van Trijp (2012), who deals with the emergence of case systems and case strategies, specifying the constructional basis of these developments as well as the various factors determining the success (or non-success) of the system. Similarly, Steels (2007) comments on the emergence of strategies and systems for marking predicate-argument structure.

The relevance of the distinction between language systems and language strategies for this thesis will be considered at greater length in Chapter (6.2.3) below, which will attempt to explain the specific changes seen in the history of ditransitives on the basis of the considerations presented here. More precisely, what I will suggest is that there are benefits in distinguishing between linguistic selection on the level of parts of linguistic systems on the one hand, and language strategies, i.e. emergent collective behaviours, on the other hand. In fact, this distinction has already been applied to a certain extent in the evolutionary game theoretic model presented above, where the viability of different strategies (NP vs. PP) under changing environmental conditions was tested. The history of ditransitives in English, but also the history of English in general, perfectly lends itself to a discussion in terms of selection of systems and strategies. The choice between different systemic, constructional variants has

been assessed on the basis of an empirical corpus analysis above – here, it has been shown that the DOC and the (*to*-)POC entered into competition and finally came to form a cooperative relationship. Since this competition for recipient marking (NP vs. PP) was paralleled in other parts of the constructional network, for example in the expression of transitive objects, this could have led to changes in the system of semantic core role marking. This change could in turn have had a long-term influence on the language strategies at hand: while in pre-Old English times, a single strategy of 'NP(CASE)' was employed, the strategy of 'expression through PPs' was added at some point in this history. Ultimately, these strategies developed a cooperative relationship as well, or rather, a mixed strategy of NP/PP established itself.

6.1.3. Evolutionary construction grammar

In sum, what has been suggested in this chapter is that constructionist accounts and evolutionary linguistics are compatible in a number of ways, although compromise solutions need to be developed as well. As to specific issues that have been addressed, the unit of replication in a fused framework is taken to be the construction as a form-meaning mapping. Examples are the members of the dative alternation – both the DOC and the to-POC in Present Day English qualify as replicators in this account. Replicators are assumed to be present in two stages in language use, as external (e-)replicators in utterances, and as internal (i-)replicators in speakers' minds. These types of replicators correspond to constructs, i.e. concrete token instantiations in usage on the one hand, and micro-constructions as the cognitive representations or stored memories of such constructs on the other hand. Replication proper is assumed to take place between the levels of micro-constructions and constructs. However, higher-level abstractions over individual usage events (subschemas, schemas, etc.) are thought to be activated in most communicative situations as well, with frequent activation leading to a higher entrenchment of specific constructions. For instance, as already mentioned above, the abstract, underspecified DOC is replicated together with, or through less schematic, lower-level constructions, such as verb-class-specific, verb-sub-class-specific and verb-specific constructions, and finally the fully filled micro-construction (e.g. *John gave me a book*). Replication is therefore essentially a bottom-up process.

The locus of innovation and change is then also the level of micro-constructions (and constructs). As soon as some aspect of a construction changes, the variant enters into competition with the resident construction. Often, such changes are caused by repair mechanisms in language processing. Examples of resolved mismatches leading to variation in the history of the dative alternation include the reanalysis of prepositional adjuncts (e.g. *to* expressing a locative goal) to markers of core semantic roles (e.g. *to* marking a recipient in ditransitive events). Encountering a goal-preposition with an NP ambiguous between a location and a human recipient could, for instance, trigger a partial mismatch, and the formation a new link from *to* to a meaning previously associated only with synthetic markers.

The replicative success of the variants is determined by cognitive-physiological, systemic and social factors. As to the former, the DOC can be argued to be more economical in being shorter, while the *to*-POC is arguably more expressive and indicative of the precise semantic role involved. As van Trijp (2013) shows, such issues can also be quantified and tested, e.g. through agent based modelling. As to intra-systemic factors, a construction's success is always also determined by its constructional environment: tokens of the *to*-POC with PP-late ordering are fitter than PP-early instances because they correspond better to the positional preferences in other prepositional constructions; a DOC case frame of [DAT_{REC}-ACC_{TH}] is more successful than other frames in a system in which accusative is the prototypical case for themes in other constructions; transfer-related sub-senses of the DOC thrive at the expense of others once the construction becomes more strongly associated with the *to*-POC, which expresses a matching meaning of caused motion/ possession. Finally, social conformity and prestige plays a role in determining a construction's fitness. While [TH-REC] orders with the DOC are clearly non-successful in most regions, their use might signal group membership and therefore succeed in other areas (cf. *give it me* in Northern British English). Independently of which specific factors are at play, how well the competing constructions fare in regard to the different factors, i.e. their communicative success, is assessed in cumulative feedback loops.

In addition to the level of language systems, which comprises parts of the constructional network and thus concerns the choice between constructional variants (such as the DOC and the *to*-POC), linguistic selection also affects language strategies. These 'instructions' emerge out of the collective behaviour of speakers in a population and are shaped by alignment between individual users. Importantly, changes within systems available in a particular language can accumulate to changes in strategies, with new strategies ousting older ones, or different strategies for the same functions developing a cooperative relationship. A clear example is the emergence of PPs as alternatives to synthetic means of expressing semantic roles, meaning that the constructional sub-system of semantic role marking has been extended. This systemic change (and others conforming to it) can accrue to a change in language strategies, in this case the addition of 'PPs' to the strategy inventory.

What has been presented in this chapter then constitutes an essentially bottom-up approach, with changes triggered by usage events influencing lower-level constructions, which can in turn lead to more abstract and schematic constructions being modified. This can even amount to large-scale system-wide changes such as the loss of case markers. Changes in the paradigmatic choices available in language systems can furthermore result in long-term changes on the level of strategies.

Finally, I have tried to show that there are clear benefits in integrating construction grammar (and other cognitive, usage-based approaches) and evolutionary linguistics despite certain drawbacks. From the perspective of the latter, construction grammar provides the necessary specifications to deal with concrete linguistic phenomena and changes in individual languages; it for example lets us model the

network of constructions/replicators and the links between these elements in a highly detailed manner. Moreover, a great deal of research within these frameworks has gone into investigating the cognitive and neural processes at play in language use, meaning that taking into account the neuro- and psycholinguistic literature is certain to yield significant insights and help to pin down developments on a much more concrete level. For instance, the specific trajectory of changes such as those typically described as 'grammaticalisation' or 'lexicalisation' are dealt with at length in (diachronic) construction grammar (in this case under the umbrella term of constructionalisation), while discussions of such regularities and more detailed investigations are usually not part of evolutionary accounts.[207] Constructionist approaches can thus be seen as supplementing evolutionary linguistics in providing important, more specialised information.

In the opposite direction, adding evolutionary linguistic ideas to constructionist accounts is evidently advantageous since this discipline goes "beyond [more traditional linguistic] efforts by developing explanations of how and why certain linguistic phenomena could have evolved" (Steels 2010: 2). By relating language use and evolution to other domains, and through the integration of findings and knowledge about processes at work in these other areas, new perspectives can be taken. Furthermore, and highly importantly, evolutionary linguistics paves the way for the inclusion of methods developed in other disciplines such as systematic experiments involving agent-based modelling, or evolutionary game theory. More specifically concerning construction grammar, evolutionary thinking can be beneficial in allowing for a more general approach to certain issues: for example, distinguishing between language strategies and language systems (or rather, the variants within systems, i.e. the population of constructions available) can be helpful in dealing with larger-scale changes stretching over long periods over time, such as the loss of case marking or the fixation of word order. In the following, the joint framework of evolutionary construction grammar as outlined in this chapter will be applied to the history of the dative alternation in English. The discussion will largely be based on the results of the empirical data analysis as presented in Chapter (4) as well as the evolutionary game theoretic account offered in (5.2).

6.2. Constructionalisation, competition, cooperation

The goal of the following chapters is first and foremost to come up with a plausible scenario for the development of ditransitive verbs and the constructions available to them in the history of English. The underlying assumption here is that ditransitives constitute a network of argument structure constructions linked by the fact that they involve three argument roles: an agent and an entity that is acted upon, as well as a third participant affected by this action. The individual constructions forming

[207]But see e.g. the attempts to link grammaticalisation to the concept of 'exaptation' (Norde & van de Velde 2016).

part of this network constitute the replicators whose success we are interested in. These include a schematic, underspecified DOC, various case constructions connected to it in Old English, as well as several sub-constructions instantiating different meanings. Further relevant replicators include the *to*-POC, as well as a range of other POCs involving e.g. *from*, *of* or *towards* and *till*. Both in the case of the DOC and the POCs, we also find replicator variants regarding constituent order: for example, [REC-TH] and [TH-REC], as well as [*prep*REC-TH] and [TH-*prep*REC] are taken to constitute variants of each other.

As to diachronic change, both the make-up of this network, as well as the formal and functional features of the participating patterns, are subject to quite substantial change. Moreover, the network as such is altered as new links emerge or fade. Concerning structural properties of the constructions, the specific marking of the constituents involved, as well as their relative position in the clause varies over time. In regard to their meaning sides, both semantic narrowing and semantic widening of sub-parts of the systems can be seen. All of these changes can be conceptualised as the outcome of **competition** on different levels. While the loss of case marking, for example, can be modelled as the result of competing case frames as well as case suffixes, competition between different object orders is resolved by the ousting of one, and the fixation of the other (e.g. [REC-TH] with the DOC). Similarly, the demise of the DOC with verbs of dispossession reflects the greater success of the POC in this case. In other cases, however, competition is not resolved by the defeat of one constructional variant, but by the emergence of a **cooperative** relation. This is crucially what happens with the DOC and the *to*-POC: rather than one ousting the other, they have entered into a symbiotic, mutually stabilising relationship. In this relationship, the variants constitute allostructions rather than competing synonymous constructions, meaning that they are paradigmatically connected to each other, and are linked to a more schematic generalisation, the constructeme. Sharing the workload, the allostructions have come to functionally diverge and have constructed their respective niches in order to complement each other. A similar development can be seen in the inventory of strategies for ditransitive event encoding (or semantic role marking in general), where a mixed strategy/ strategy cooperation has formed between the DOC (NPs) and the *to*-POC (PPs) as well as fixed word order. That is, the change in the linguistic system of English correspond and determine changes to the strategies available in the population.

In order to arrive at a comprehensive picture of these developments, I will start by discussing each of the major changes outlined in Chapter (3) in turn, starting with the loss of case marking, followed by the rise of prepositional competitors, changes in the semantics of the DOC, and the fixation of word order. Importantly, these changes will be approached from the perspective of the ditransitive patterns themselves, meaning that the focus will be on the way these patterns participated or were involved in the larger developments at hand. Each subchapter will therefore first see an assessment of ditransitives in respect to a particular aspect (such as the demise of morphological case). Only in a

second step will the patterns then be considered in the context of the larger network they form part of. That is, the various patterns connected to - or indeed forming part of - the double object construction and the prepositional object construction(s) will be regarded as 'environmental' factors which play a major role in determining the success (or fitness) of these particular replicators. Since these surrounding constructions were not investigated empirically in this project, much of this discussion will necessarily have to remain speculative. Nevertheless, I hope to provide a probable account of how systemic changes involved in the history of ditransitives could have come about.

While in Chapter (6.2.1) the various changes will be dealt with separately on the basis of the empirical results presented before, the chapter following it (6.2.2) will address the issues of causality in this scenario: although causality is of course notoriously difficult to prove especially with historical data, I will nevertheless suggest here that the changes affecting the ditransitive constructions in Middle English (and beyond) are causally linked in a number of ways. However, I do not assume a mono-directional and simple effect of one change on another, but will argue for a complex interplay of changes influencing each other in continuous mutual feed-back feed-forwards loops. For example, it seems plausible to presume that the increasingly close association between the DOC and the *to*-POC played a causal role in the narrowing of the former's semantics. At the same time, however, the increase in semantic coherence of the DOC to a meaning more compatible with the *to*-POC could also be seen as triggering or enabling the establishment of a stronger link between the patterns in the first place. Conceptualising these developments as parts of a **co-evolutionary** scenario in which the two constructions successively and gradually adapt to each other, then saves us from having to decide between the two options, i.e. a) the emergence of the dative alternation causing the semantic narrowing of the DOC or b) the semantic narrowing of the DOC causing the emergence of the dative alternation. This also provides us with a more realistic scenario than the assumption of one-directional impacts between monolithic changes. The subsequent sub-chapter (6.2.3) will comment on the question whether we can gain anything from viewing the changes at hand as competition between language strategies which emerge from the collective behaviour of speakers 'implemented with' different constructional systems, and can be influenced by changes within these. Finally, in the last section (6.2.4), the main points of the chapter will be summarised, rounding up the various issues discussed within the chapter.

6.2.1. Ditransitives in and around Middle English

The following sections will discuss the development of ditransitive patterns from various perspectives, starting with ditransitives in the context of the loss of morphological case marking (6.2.1.1), before moving on to the emergence of prepositional competitors and their relationship to the DOC (6.2.1.2). Concerning the latter, most attention will be on the dative alternation, i.e. the relationship between

the DOC and the *to*-POC. However, other ways to resolve the competition between DOC and prepositional periphrases will also be dealt with. The next chapter (6.2.1.3) will then see an assessment of how the semantic narrowing of the DOC in the history of English can be visualised, followed by a final chapter (6.2.1.4) on the fixation of constituent order in ditransitive constructions.

6.2.1.1. Ditransitives and the loss of case marking

6.2.1.1.1. Ditransitive case constructions in Old English

Focussing first on the aspect of case marking of the constituents involved, we have seen above that five distinct argument structure constructions marked by specific case frames can be distinguished for three-place predicates in Old English. This means that ditransitive verbs can be found with variable case marking of their participants – more specifically, it is the object case markers that vary, with the frames of either [DAT-ACC], [DAT-GEN], [ACC-GEN], [ACC-DAT] or [ACC-ACC] used to express the combination of affectee and theme arguments (cf. Visser 1963: 606-636; Mitchell 1985: 453; Allen 1995: 29, 2006: 205-208; Barðdal 2009: 10-11; De Cuypere 2015a: 230-233).[208] In contrast to the objects, the subject argument in ditransitive events is unchangeably associated with nominative case, and will therefore be disregarded for the moment. As indicated in Figure 47 by differences in strength and shape of lining around the respective boxes, the individual case constructions differed in type and token frequency and thus in degree of entrenchment: for instance, [DAT-ACC] is reported to have been the most type-frequent frame (and probably also the most token-frequent one), with Visser (1963: 621-634) listing over 320 verbs observed in this pattern. The second most type frequent frame was, although with a considerable distance, [ACC-GEN] at approximately 75 verb types, followed in descending order by [DAT-GEN] (ca. 60 verbs) and [ACC-DAT] with about 40 types. Finally, the case construction of [ACC-ACC] was instantiated by a very low number of verbs; more precisely, merely 10 verbs are mentioned as occurring in this construction in Visser's inventory (1963: 635-636).

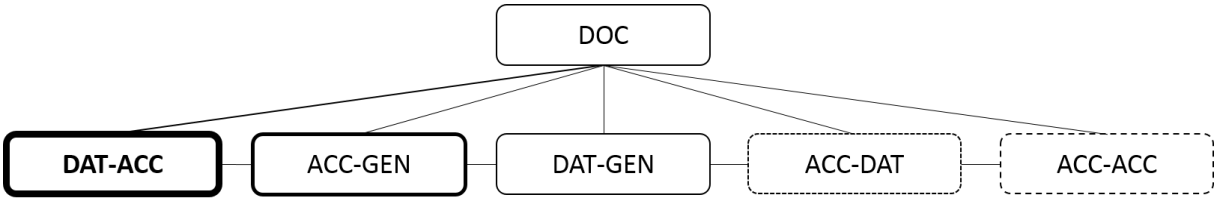

Figure 47 Case frames for ditransitive verbs in Old English

The individual case frame constructions can be taken to be horizontally linked to each other in speakers' minds, and could also be abstracted over, resulting in a higher order double object construction. This abstract DOC has a structure of [$V_{ditransitive}$ NP-case NP-case], meaning that it is

[208]If case frames are given in square brackets, the first element refers to the affectee (REC-argument), whereas the second specifies the case marking of the theme participant.

underspecified regarding the specific case marking on the objects. This schematic form is paired with a similarly underspecified meaning of 'X causes Y to be affected by acting upon Z'. As will be discussed in more detail below, the schematic semantics of this higher-level construction represent a generalisation over the various senses associated with the pattern such as 'dispossession', 'transfer' or 'benefaction/malefaction', instantiated by different verb classes – the common denominator of which is that there is some sort of effect on the second, mostly animate, participant (cf. Goldberg 1995; Croft 2003). The postulation of a schematic DOC linking the case constructions in addition to the case frames as such is motivated mainly by the fact that they show a great amount of semantic overlap. Although they are therefore formally clearly distinct, this does not correspond to clear semantic boundaries. More precisely, the main characteristics of the OE system of DOC case frames are the following:

On the one hand, the choice of case frames with particular verbs or sets of semantic verb classes appears to have been semantically motivated at least to some extent. For instance, as Visser (1963: 621) points out, the pattern [ACC_{DEPR}-GEN_{TH}] is relatively reliably associated with events of dispossession or taking away. If such an event of dispossession is conceptualised as 'agent takes animate person away from an entity', the association between case frame and meaning in this instance seems to rather straightforwardly reflect the prototypical semantic functions of the two nominal cases involved. This is due to the fact that in Old English, the accusative most commonly marked the patient/theme or affectee of an action, and genitive case characteristically indicated the source or "spatial reference point from which another participant originates or can be accessed" (Möhlig-Falke 2012: 38; cf. also Croft 2000: 122). On the other hand, however, the system was far from featuring a bi-unique relationship between forms and functions: neither was one frame consistently linked to one single meaning, nor was one meaning predictably associated with one case construction only. An example of one-to-many relations between form and meaning is presented in Figure 48, which expresses that [DAT-GEN] was e.g. used both with verbs of concrete or intended transfer such as *(ge)unnan* 'grant' (109a) as well as with verbs of deprivation like *bereafian* or *beniman* (109b), and others.

(109) a. and **him**$_{DAT\text{-}REC}$ <u>mancynnes</u>$_{GEN\text{-}TH}$ *benæmde*
'and took mankind away from him'
((*COE*) ÆCHom I, 31 460.8; taken from Allen 1995: 28)

b. Se cyning *nolde* **him**$_{DAT\text{-}REC}$ <u>his feores</u>$_{GEN\text{-}TH}$ *geunnan*
'the king would not grant him his life'
(Bt. 29, 2; Bosworth-Toller, s.v. *ge-unnan*)

The frame of [DAT-ACC], on the contrary, is found with a large range of different verb classes including transfer (*agyfan* 'give'), caused motion (*asendan* 'send'), indented transfer (*behatan* 'promise', *beodan* 'offer'), refusal (*ofteon* 'deny') as well as communication (*cweþan* 'say') and dispossession (*ætbredan*

'take away'); cf. Allen (1995: 28). This frame therefore appears to have been the semantically most open one, in addition to being most type and probably token frequent. As argued below, however, [DAT-ACC] nevertheless likely exhibited a strong affinity to 'transfer' semantics in Old English; this is also clear from Visser's (1963) list of verbs found in this pattern. Accordingly, this frame was probably also the most prototypical pattern in regard to the semantics of the more abstract DOC construction, in which a sense of transfer was most certainly relatively salient as well.

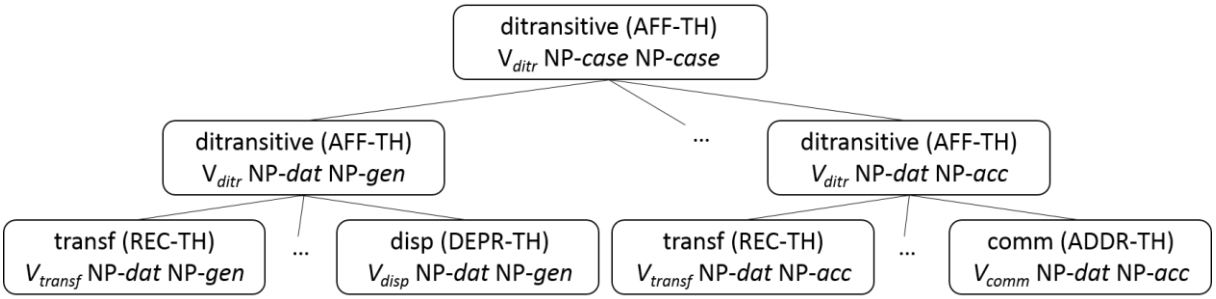

Figure 48 Constructional network of case frames and associated verb-class specific meanings in Old English

In regard to many-to-one relations between form and meaning, the same broader meaning was commonly linked to a variety of case frames. A clear example of this is the notion of dispossession, which was not limited to [ACC-GEN], but could also be expressed by [DAT-GEN], [ACC-DAT] as well as [DAT-ACC]. The former of these would seem to constitute quite basic combinations of the prototypical functions of the constitutents involved. However, the latter two are somewhat unexpected considering that the most typical semantic role played by the dative was to mark a spatial goal referent rather than a source (cf. Möhlig-Falke 2012: 38; also Mitchell 1985: 565-568; Traugott 1992: 204). The phenomenon of verbs of dispossession appearing in four different case constructions is illustrated in Figure 49 and examples (110a-d) below.[209] The same variability in not being restricted to one particular pattern was also given with all other classes, including verbs of transfer.

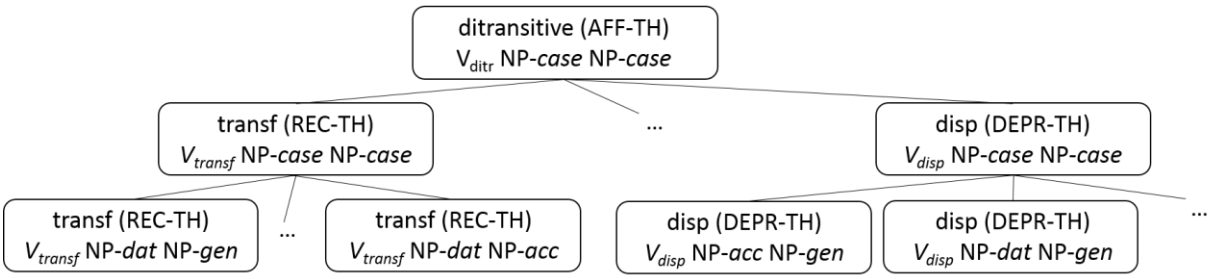

Figure 49 Constructional network of verb-class specific meanings and associated case frames

[209]The two figures presented here are related in a multi-dimensional way. While Figure 48 depicts the constructional network of case frames with a focus on form, Figure 49 presents an approximation to the semantic network of different case frames.

Nevertheless, it is plausible to assume that the system was not entirely chaotic, but that more subtle differences in construal of the situation or the relationship between the participants involved were present. Tentative support for this assumption lies in the fact that as claimed by Allen (1995: 28), most verbs able to appear in genitive combinations showed a strong predilection for either dative or accusative marking on the REC-argument (often denoting a deprivee), i.e. selected for either the frame of [DAT-GEN] or [ACC-GEN]. For example, *forwyrnan* 'to forbid, deny' is almost invariantly found with the former construction, while *bireafian* 'bereave, deprive' shows a distinct preference for accusative marking on the deprivee. This distribution possibly points towards a slight contrast in specific meaning of the case frames, with the former denoting a more abstract effect on the dative-argument, in contrast to a more concrete, spatial separating impact on the accusative 'recipient' in the latter. Subtle differences like these would then also have been present with verbs alternating between the case frames such as *biniman* 'deprive, take away from', even if in some instances the distinction is not entirely easy to detect (cf. e.g. examples [(*110*a] vs. [(*110*b]).

(110) a. and **him**$_{\text{DAT-REC}}$ mancynnes$_{\text{GEN-TH}}$ *benæmde*
'and took mankind away from him'
(ÆCHom I, 31 460.8; taken from Allen 1995: 28)

b. & **hine**$_{\text{ACC-REC}}$ mankynnes$_{\text{GEN-TH}}$ *benæmde*
'and took mankind away from him'
(ÆGenEp I; taken from Allen 1995: 28)

c. oþ þæt **hine**$_{\text{ACC-REC}}$ yldo *benam* mæȝenes wynnum$_{\text{DAT-TH}}$
'until age took away from him the joys of his strength'
(Beowulf 1885^{b}-1887; Glossary Old English Aerobics, s.v. *beniman*)

d. Drihten me forȝeaf ða æhta, and Drihten hi$_{\text{ACC-TH}}$ **me**$_{\text{DAT-REC}}$ eft *benam*
'the lord gave me the possessions, and the lord took them away from me again'
(Hom. II. 450. 24; Glossary Old English Aerobics, s.v. *beniman*)

As to the further case frames, Visser (1963: 618) notes that in [ACC-DAT] instances, the person affected is typically "represented as being separated from something that may be looked upon as being 'possessed' by him (head, life, power, etc.)". That is, this particular frame could have been associated with situations of deprivation of entities closely connected to the deprivee, corresponding to the OE dative's core semantic function of marking inalienable possession (cf. also Pasicki 1998: 118-119; Möhlig-Falke 2012: 37). This contrast in construal can possibly also account for the differences in complementation between (110c) and the other examples in (110), as well as those between (111a) and (111b), since one's clothes are arguably more intimately attached to someone than alienable possessions such as gold and silver.

(111) a. **hine**$_{\text{ACC-REC}}$ wædum$_{\text{DAT-TH}}$ *bereafian*
'to deprive him of his clothes'
(ÆCHom I, 29 426.4; taken from Allen 1995: 29)

b. and *bereafode* **Godes templ**$_{\text{ACC-REC}}$ goldes and seolfres$_{\text{GEN-TH}}$
'and stole gold and silver from God's temple'
(coaelive, ÆLS_[Maccabees]:6.4838; taken from De Cuypere 2015a: 232)

Similarly fine contrasts could be posited in regard to the other case frames and verb classes as well, meaning that we would arrive at an intricate and complex constructional network in which the combination of particular sets of verbs with particular case frames would express a range of distinct meanings at various levels of specificity, sometimes only distinguished by very slight semantic differences in perspective (cf. e.g. Langacker 1987: 117; also Traugott 1992: 211). A similar account could also be put forward for prepositional paraphrases of the double object construction, suggesting that specific combinations of verbs, case-marked themes and prepositional recipients (including a case-marked NP complement, typically in the dative) were available to encode specific semantic relations or event construals (cf. e.g. Mitchell 1985: Ch.J; van Kemenade 1987: 81; Lundskær-Nielsen 1993: 19-24; Alcorn 2011: 143-151).

Although this assumption is to some extent appealing, there are a few problematic issues with it: first, the suggestions mentioned are highly tentative, and lack confirmation by empirical data. Second, multiple attempts at establishing clear correlations between the use of certain case frames and event construals have been made so far. Still, they have largely failed in creating conclusive models of classification, and the endeavour has therefore often been considered as essentially futile (Mitchell 1985: 453). Furthermore, postulating very fine-grained semantic distinctions which are often difficult to perceive is slightly risky. Irregularities, i.e. instances in which the case frame chosen does not seem to match the proposed semantic motivation, can be explained as cases of constructional coercion into a certain meaning. This, however, clearly runs the risk of circularity and ad-hoc explanations, especially without careful examination of actual data. An additional problem is posed by the question of how much of the semantic information is contributed by the verb and by the case construction, respectively (cf. also Croft 2000: 122). A thorough assessment of the frequency with which verbs in fact alternated between case frames in Old English would possibly be able to shed more light on the issue.

Even if subtle semantic distinctions between the case frames were present, I argue that it is nevertheless clear that the OE system of ditransitive case constructions was characterised by a large degree of idiosyncrasy and very low-level subcategorisations (cf. also the concept of lexical case assignment, Allen 1995). Accordingly, it was probably rather difficult to acquire and maintain. Abstractions formed over instances of individual case constructions with particular verbs and verb classes would furthermore necessarily have been rather underspecified regarding semantics. This in turn would have meant a great deal of semantic overlap between the (more schematic) case constructions. As I will claim below, such a system was prone to change, inviting convergence of the case frames (cf. also Croft 2000; Barðdal 2009).

In sum, I will in the remainder of this chapter work on the basic assumption that the OE system of argument structure construction was sub-optimal in not unambiguously linking form and meaning in a bi-unique way. In such a situation in which the individual case frames are not associated with clearly defined semantic niches but stand in competition for the same semantics, we can then expect two possible pathways of developments: either the case frames cooperate and develop systematically distinct functions, or they continue to compete against each other, which possibly results in the ousting of certain patterns in favour of others. I will demonstrate in the following section that it was the latter scenario, which might ultimately also have led to the loss of case distinctions in general, that took place in the history of English ditransitives (cf. also Traugott & Trousdale 2013: 18; Barðdal 2009).

6.2.1.1.2. Merging case constructions in late Old English to Middle English

A system exhibiting substantial semantic overlap between different constructions, such as that of ditransitive argument structure as described in the preceding section, is presumably rather unstable and therefore prone to change. As is well known, change is precisely what we observe with ditransitives at the transition from Old to Middle English then, with the various case frames gradually merging, until we arrive at the 'bare', non-case marked double object construction still present today.

The development as witnessed with ditransitives finds its parallels in other parts of the network, including the so-called 'impersonal' or 'experiencer' constructions, dealt with in Seefranz-Montag (1983), Allen (1995), Barðdal (2009) or Möhlig-Falke (2012), among others. Barðdal (2009: 13-14) shows that the semantic spaces taken up by the case constructions for one- and two-place predicates (including impersonals) intersect in various places within individual Germanic languages. Since languages typically tend to avoid constructional synonymy, it is assumed that this state of semantic overlap is temporary only, and that 'therapeutic' measures to resolve the issue will be taken by the language. The specific pathways of change suggested by the author are either the complete loss of case distinctions and subsequent convergence of case constructions, as case markers are perceived as redundant and inviting reduction, or a movement towards more productive constructions, resulting in the gradual demise of low-type frequent constructions (Barðdal 2009: 14; cf. also Luraghi 1987: 356). It is, however, clear from the ensuing discussion of individual Germanic languages that Barðdal in fact envisages these two options as being dependent on each other, i.e. the reduction of the case system as a whole is seen as the result of a step-wise gradual reduction in the range of case constructions.[210] Although not dealt with explicitly in Barðdal's account, a question of interest would be whether those

[210]Another important factor in Barðdal's argument is language contact, as it is assumed that loan-verbs "will be attracted by the high type frequency constructions, thereby lowering the type frequency of the low type frequency constructions, increasing the chances of them becoming extinct" (2009: 15).

constructions that are productive and thus manage to survive have entered into stable cooperative relationships over time, i.e. whether synonymy has been decreased in this way.[211]

A similar, yet still slightly distinct approach is taken by Croft (2000: 121-123), who deals with object marking in non-impersonal transitives: assuming that the marking of the non-agentive arguments of transitive verbs in general was highly conventionalised, and that there was a large degree of synonymy between patterns involving accusative, genitive or dative objects, he suggests that non-accusative objects were first 'recoded' as accusative, only later to be followed by case loss proper. Croft thus sees the primary effect of semantic overlap between case constructions in the ousting of certain patterns in favour of others, but attributes the whole-scale demise of morphological case marking to different (unspecified) causes.

The present thesis now argues for a scenario combining both proposals for the case of ditransitives. Judging from the literature on the issue, as well as from the Middle English data as presented above (4.2.1), I assume that in a first stage, the competition between the different case constructions for the same (or overlapping meanings) was settled in favour of the most type-frequent and most productive [DAT-ACC] frame. That is, the corpus data drawn from the PPCME2 shows little evidence of genitive-bearing frames at all. Where case marking is still comparatively unambiguous, dative recipients and accusative themes are predominant. Incidentally, the frame of [DAT-ACC] also constituted the most open construction in that it could express most or indeed all senses associated with the other frames, even verb classes such as verbs of privation, which were more clearly associated with genitive combinations. Furthermore, as will be dealt with in the following section, this frame can be assumed to have been most successful in the context of the constructions surrounding and connected to ditransitives in the larger network. At a point when accusative marking became increasingly closely associated with 'object' position in most frequently instantiating the semantic role of theme or patient, a ditransitive case construction corresponding to this trend would clearly have been most successful.[212] In this process of increasing movement towards the most productive frame, the least entrenched construction of [ACC-ACC] was presumably lost earliest, followed by the remaining frames.

In Luraghi's terms, this development can be taken to represent a rather straightforward case of functional/semantic syncretism, "brought about by similarities in the semantic relations underlying [the various frames of] noun phrases marked by specific case endings" (1987: 368; cf. also Leumann,

[211]This is indeed what appears to have occurred in German (at least to some extent), as the individual cases (and correspondingly, the individual case constructions) are strongly correlated with particular

[212]In accordance with the ideas presented below, I assume this bias to have worked in both directions – since the accusative in ditransitive events in all likelihood most frequently and most prototypically marked themes transferred to another participant in OE already, this predilection is also assumed to have impacted the bias towards accusative (direct) object marking in other events.

Hoffmann & Szantyr 1977). At the same time, the case of ditransitive verb frames could also be conceptualised as an instance of syntactic syncretism. This is due to the fact that NPs marked by genitive, dative and accusative were highly similar concerning the syntactic positions (or syntactic roles) they occupied with regard to the verb: all cases could take up the role of direct object as well as indirect object, even if their exact position in the clause was not yet fixed (cf. Luraghi 1987: 368).

As to the subtle semantic distinctions which were before associated with the individual case constructions, I claim that they could still be retrieved through context, the nature of the objects, as well as the verbal meaning itself. That is, the convergence of case frames did not necessarily have a negative impact on the system but quite on the contrary made it easier, while retaining a similar degree of expressivity. This 'retrievability' might ultimately then also have caused the loss of the last remaining case markers. Once [(NOM-)DAT-ACC] was the only frame available for three-place predicates, case marking on the participant arguments involved came to be perceived as redundant in speakers' minds, since in most cases the REC-argument was clearly distinguishable from the TH-argument on the basis of animacy asymmetries (and other features) anyway. In other words, with only one particular case frame left, variants involving unmarked, bare NP arguments, i.e. [NP-$Ø_{REC}$ + NP-$Ø_{TH}$] could easily emerge. These were able to replicate very successfully as they had a similar cue reliability as the case-marked pattern, but were simultaneously more economical. Furthermore, this particular construction would have had greater replicative success considering its intra-systemic fitness environment, in that it reflected the general trend towards case reduction in the system of argument structure constructions and beyond.

While the account presented so far is largely in line with Barðdal's proposals on case in Germanic, it differs in one aspect: contrary to most constructionist accounts, which typically downplay the role of phonetic erosion, I do take formal ambiguity in case markers as a contributing factor in the story of case loss in English (cf. also Blake 2001: 176-178). This is also reflected in the empirical analysis presented above. As shown in the results, ambiguity between dative and accusative markers was high already in early Middle English, and increased signficiantly over the course of the period. One motivation for including formal ambiguity as a separate process is that the arguments against including phonetic/phonological changes and the formal reduction of case affixes are, in my opinion, debatable, or do at least not exclude the possibility of phonetic reduction playing a minor part in the development. For example, Barðdal's (2009: 3) contention that the loss of case marking in Swedish did not affect the first person plural ending of verbs in the present tense (*-e*) is only remotely valuable. Morphological markers in verbs might have reacted differently to formal and systemic pressures as those in the nominal system, and this particular ending could have been preserved for a number of different reasons. Second, and more importantly, it seems that the loss of case frames other than [DAT-ACC] and the rise of a zero-marked DOC constitute two distinct processes. While the former is thought to

have been driven by semantic overlap, and divergences in type frequencies between the case constructions, the latter is taken to have been at least partly promoted by the fact that the formal instantiations of the category markers were often highly ambiguous in early Middle English already (as was confirmed in Chapter 4.2.1 above). If the markers of the participant arguments showed a high degree of formal overlap in addition to their being semantically redundant, this would only have aided their eventual reduction.

To conclude, the scenario suggested here is a story of two-fold competition – in a first stage, we find different case frames competing for expression with ditransitive verbs in a system that is characterised by semantic overlap between formal patterns and semantic irregularity. The same (broad) meanings, instantiated by particular verb classes, are associated with more than one form at the same time. This suboptimal system involving competition on too many levels is clearly vulnerable to changes. In the particular case of English ditransitives, change takes place in that the most entrenched and most general case construction of [DAT-ACC] successfully manages to attract members of other frames, and eventually ousts them altogether. This construction in time enters competition with a newly emerged, case-less double object construction. The competition is ultimately resolved in favour of the latter variant due to the formal ambiguity of the phonetically reduced case affixes, as well as the little semantic contribution of the case markers once [DAT-ACC] is retained as the sole frame. The final outcome of these processes is that in early/mid Middle English, we find a schematic and relatively underspecified DOC construction which features two case-less NP-objects and expresses a comparatively wide range of meaning relations. This process is reflected in Figure 50 below.

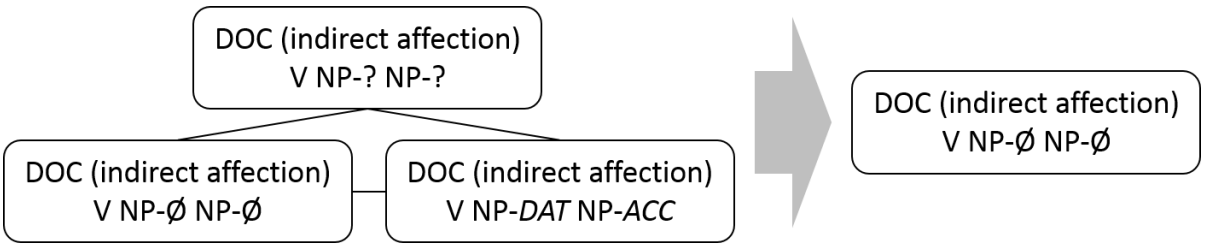

Figure 50 Competition between case construction [DAT-ACC] and a zero-marked construction is resolved in favour of the latter

Although the focus has here largely been on the DOC and its case constructions, it is assumed that a comparable scenario holds for POCs between Old and Middle English as well: if case marking on the complements of prepositions was perceived as largely redundant and contributing little to the semantics of the constructions, a reduction of case frames towards the most frequent [*prep*DAT] in general, and in consequence, [*prep*DAT-ACC] for POCs, and an eventual complete loss of case marking would be expected. It is furthermore possible that with POCs an unmarked construction could establish itself even more rapidly, since double-marking (preposition plus case) is arguably rather uneconomical.

6.2.1.1.3. Ditransitives in the context of a system-wide loss of case

As alluded to in several sections above, the development of Old English case constructions cannot be adequately addressed without taking into account the larger network of constructions connected to them, as well as the smaller constructions which participate in their formation. That is, since one of the main foci of the present thesis is on the intra-systemic factors determining the success of a certain variant, it follows that constructions need to be investigated not in isolation, but in relation to their constructional environment (cf. also Hoffmann & Trousdale 2011: 10).

Among other things, the Old English double object construction (with its various case sub-constructions) was closely linked to other argument structure constructions, including intransitives and transitive patterns of all kinds. As with ditransitives (and as already mentioned above), these constructions were typically not associated with one single case frame, but connected to a variety of different case constructions. Figure 51 shows that semantically highly transitive, prototypical two-place predicates could for example appear with dative-, accusative- or genitive-marked 'object' arguments, meaning that even in patterns featuring an invariably nominative 'first' argument there was room for variation.[213]

As Möhlig-Falke (2012: 35, 48) points out, and as indicated in the figure, [NOM-ACC] was clearly the most type frequent frame; in the lists provided by Visser (1963: xx) and Mitchell (1985: 455-464), over 40 per cent of the OE transitive verbs are said to have been used in this construction. Therefore, it "may be considered to be the prototype of the OE transitive construction on the basis of being the most typical example" (Möhlig-Falke 2012: 35; cf. also Lakoff 1987: 86-87).[214] What is important to note here is that again we find a system that is far from bi-unique, but is instead characterised by many-to-many relationships: one the one side, the same meaning could be expressed by various forms, on the other side, one particular form could express a variety of meanings. For instance, as also hinted at in the figure, an agent-theme relation could be expressed both by [NOM-ACC] and [NOM-DAT] (and possibly others), while [NOM-DAT] could also be used to mark a possessive relation between two NPs.

[213]We of course know that not all sentences necessarily involved a nominative agent-argument – the focus on prototypical transitive clauses is therefore a simplification for practical purposes (cf. Barðdal 2009; Möhlig-Falke 2012; among others).

[214]The relevance of these differences in type frequency for the emergence of a subject and object slot prototypically associated with nominative and accusative will be dealt with in more detail in Section (6.2.1.4) below.

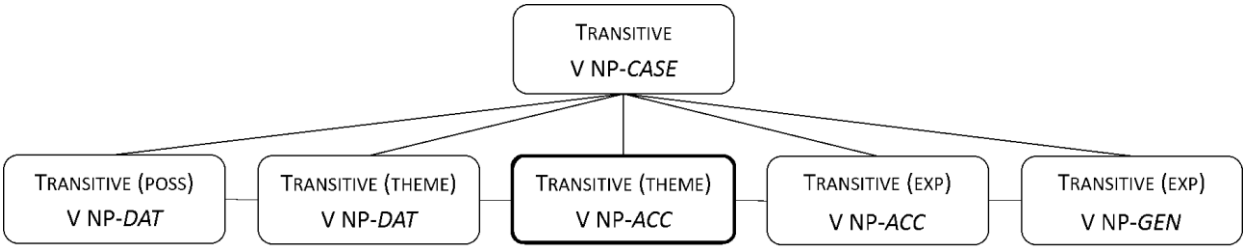

Figure 51 Network of transitive case constructions in Old English

With Barðdal (2009) and Croft (2000), I assume that such semantic overlap is likely to lead to a reduction in case frames in favour of the most frequent one, and eventually even the complete loss of morphological case marking. Crucially, we can furthermore presume that changes affecting individual constructions (i.e. clause types) mutually influenced each other. That is, the establishment of accusative as the prototypical object case in the transitive construction through the loss of less type-frequent patterns, or rather, the move towards a prototypical [NOM-ACC] frame for two-place verbs, certainly had some impact on the ditransitive case constructions and vice versa. The convergence on one particular case pattern in construction A would then have furthered the fixation of the same case pattern for a similar relation in construction B. This means that against the backdrop of similar constructions in the constructional environment, a frame of [(NOM-)DAT-ACC], in which the accusative marked a role comparable to that of the prototypical theme argument in transitive verb frames, would have had a clear benefit over other ditransitive case constructions, and would therefore have been able to procreate even more successfully. In a similar way, the fact that most prepositions showed a preference for dative marking on their complements, and that prepositional paraphrases for ditransitive verbs became increasingly frequent from late Old English onwards, possibly furthered the success of the [DAT-ACC] construction. That is, the use of dative-marked REC-arguments in POCs (and dative-marked PP-complements in general) could have had a positive or reinforcing impact on the fitness of dative-marked REC-arguments in the DOC. Moreover, as mentioned above, the presence of 'double-marking' with PP-arguments might have aided the emergence of case-less prepositional constructions, which in turn could have had an effect on case-marking in synthetic constructions, including the DOC.

As claimed above, the phenomenon of functional overlap between formally different constructions, in addition to analogical influence from other constructions, is therefore seen as the main trigger behind the loss of case frames in the history of English ditransitives. At the same time, however, I have suggested that competition and overlap on the level of individual affixes, i.e. more atomic case-suffix constructions, had a contributory effect on the demise of case marking as well. In such case-suffix constructions, a particular form (such as *-e*, *-an*, or *-as*) was paired with a particular, possibly relatively concrete participant role (cf. Booij 2002b: 19). These affixes were probably also abstracted over, being either labelled as part of a particular inflectional paradigm (e.g. strong

masculines), or as part of a cross-paradigmatic case category (e.g. *-e*, *-an* and *-e* as instantiations of a more abstract 'dative singular' category). The more abstract category constructions then presumably combined with more abstract meanings emerging from their use in context, and fed into the larger case constructions just mentioned. For example, dative marking indicated that the NP bearing it among other things expressed the semantic role of 'experiencer', 'theme', 'possessor', or 'recipient' in a ditransitive event (cf. Pasicki 1998: 118-119; Möhlig-Falke 2012: 36-37). A potential visualisation of such a network of 'case marking constructions' is presented in Figure 52 below, which also shows additional, more schematic constructions such as [-DAT: semantic role]. Differences in lining are again used to indicate differing degrees of entrenchment of the constructions. For instance, the strong masculine inflectional class and the affixes associated with it were commonly more type frequent than other paradigms and thus represent more productive and prototypical members of the categories.[215] Also, some categories are more closely linked to specific semantic roles than to others, meaning that some pairings are more entrenched than others (e.g. [-DAT: Experiencer]).

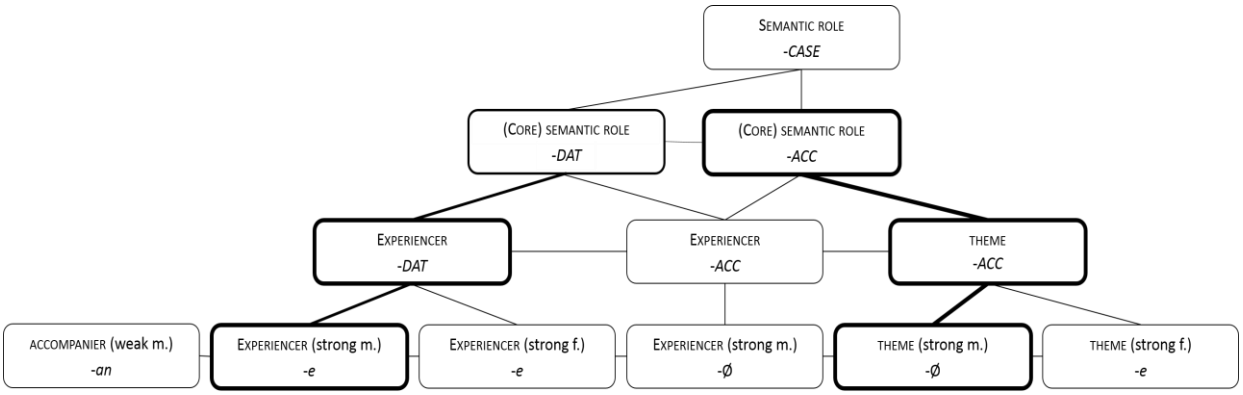

Figure 52 Simplified constructional network of OE case affixes, categories, and higher-level abstractions

The system present in Old English, as known from comparative studies on (Proto-)Germanic, already represents a reduced version of earlier systems. That is, already in pre-Old English times, competition between individual case marking suffixes (as well as categories) for the same function had arguably led to a reduction of the entire system, with both intra- and cross-paradigmatic levelling taking place (cf. Luraghi 1987; Lass 1992; van Reenen & Schosler 2000; Harbert 2007; Barðdal & Kulikov 2009; Bertacca 2009). The Old English system therefore featured a reduced inventory of affixes compared to Indo-European as well as Germanic, with only those markers remaining that allowed the system to become more flexible and functionally efficient without on the whole diminishing too much in disambiguation power (cf. van Trijp 2012). However, this reduction did lead to an even greater deal of functional overlap between the individual affixes, and contributed to the semantic overlap between categories and case constructions.

[215]Cf. also PDE possessive and plural *-s*, both of which have their origins in the OE strong masculine class.

As a result, the Old English system of case constructions exhibited a range of many-to-many relationships of form and meaning on various levels (concerning schematicity and size of the constructions involved). This would have made it comparatively difficult to acquire (cf. also Croft 2001: 122; Barðdal 2009). Many-to-many relations were furthermore in all likelihood not profitable for any of the elements involved. While e.g. an individual form could benefit from being associated with many meanings (allowing for more opportunities to be expressed), for one meaning to be instantiated by many forms (exclusively linked to it) would also be an advantage. However, non-exclusive association of one meaning with many forms, i.e. forms that are also used for other functions, is disadvantageous; at the same time, if there are many different forms all expressing the same function, it is similarly bad for them, since they face heavy competition. Too much competition of this kind is then likely to cause instability in the system, with regularising changes bound to occur in several places, i.e. on several levels and in several constructions at roughly the same time.

Such a regularisation of relations between forms and meanings in the network is plausibly of advantage to the entire system because it becomes more transparent. Nonetheless, it is only beneficial as long as the language's expressive potential is not limited by these changes. Although it is difficult to address this issue on the basis of corpus data, the fitness of a reduced system with little or no case marking, a random distribution of constituent order but a biased distribution of animate, topical etc. constituents, could easily be tested and compared against a more elaborate but also less easily learnable system by means of e.g. an agent-based modelling experiment (cf. van Trijp 2013).

In sum, I subscribe to the widely held view that the loss of case marking in the history of English was indeed not a sudden, unified change proceeding from the top of the hierarchical network to the bottom. Rather, it represents an accumulation of similar and interrelated changes in a number of different constructions, including the double object construction as well as its prepositional paraphrases. Moreover, the prime cause of these developments is taken to have been the partial (or considerable) synonymy between different sub-constructions, which was promoted by formal pressures on the system due to changes in the phonetic domain. Ultimately, this led to the PDE situation in which instead of a variety of case paradigms and forms, we find an almost entirely case-less language, with only traces of the original system remaining in pronominal forms. In the case of ditransitives, as repeatedly mentioned, this meant the emergence of an unmarked DOC with two NP object arguments, and a number of prepositional competitors likewise involving two bare NP arguments, one of which functioned as the complement of a PP. The precise development of these prepositional competitors regardless of case marking is dealt with in the next chapter.

6.2.1.2. The emergence of the dative alternation

In the following sections, the rise of prepositional competitors to the double object construction will be discussed, drawing mainly on the results presented in Chapter (4.2.2) above. The main point to be made here is that from Old English onwards, we can witness a process of continuous and incremental extension in contexts and meanings of the prepositional paraphrases, with individual PP-constructions forming very close associations to specific ditransitive verb classes. These developments constitute grammatical constructionalisation processes in the sense outlined above, with the prepositional constructions constantly acquiring new functions and coming to form new variants. In some cases such as dispossession verbs, this development of rising competition finally leads to the marginalising and eventual ousting of DOC uses, as the POCs win out. In these cases, the prepositional variant therefore seems to have been more successful in replicating, for reasons which will be addressed in the respective sections. With a second group, importantly instantiated by the most prototypically ditransitive verbs of transfer (and transfer-related classes), a symbiotic relationship forms between the DOC and the *to*-POC. This link between the two constructions is argued to increase over the course of Middle English, culminating in the establishment of a cross-constructional generalisation, namely the PDE 'ditransitive constructeme'. In yet a third group, the relationship between the DOC and the POCs is not quite as straightforward, and will therefore be assessed on a case-to-case basis.

6.2.1.2.1. POCs as emerging competitors to ditransitive case constructions in Old and early Middle English

Analytic paraphrases for double object constructions were, as De Cuypere (2015c) among others forcefully argues, far from absent from Old English. Quite on the contrary, it appears that specific verb classes strongly associated with the DOC could also be used in various prepositional patterns at this point already. Most prominently, these verb classes included verbs of communication (e.g. *sprecan* 'speak, say, utter' or *cweðan* 'speak, say') as well as verbs of accompanied motion such as *bring*, *send*, or *lead*, which are frequently found with a recipient/goal argument marked by the preposition *to*. Although this has not been clearly addressed in the literature, since the main focus is typically on the *to*-POC (due to its prevalence at this point already, and the salient role it came to play later on), it can be assumed that these verbs were at this stage not restricted to one particular preposition, but rather appeared with a range of preposition types marking the animate argument as a kind of directional goal (e.g. *towards* or *till*). That is, a more thorough investigation of Old English ditransitives would probably reveal that there was some variation concerning verbal/ verb class subcategorisation for prepositional types. The same issue presents itself with verbs of dispossession, which were occasionally expressed with a prepositional deprivee (i.e. the target or victim of a robbing/stealing event) in Old English –

these PP-patterns then involved not only *from*, but also *of* or *æt* (cf. e.g. Visser 1963: 633; Harbert 2007: 110).

The emergence of such prepositional paraphrases can, as was discussed above, readily be addressed in terms of grammatical constructionalisation.[216] I will illustrate this in the following by drawing on a number of cases of emerging POCs, namely those of *to* coming to be used with verbs of accompanied motion and animate goals, of *to*-POs developing the innovative function of marking addressees of communication events, and finally the case of *from*, *of* and *æt*, which acquire the additional meaning of 'animate source ~ deprivee'. Furthermore, I will briefly address the use of *to* and other prepositions with the semantically very heterogenous group of complex predicate constructions. Although these patterns include the most striking examples of extended functions of prepositions (and prepositional constructions), it should nevertheless be kept in mind that I assume a range of different prepositions to have undergone a similar process at roughly the same time, and to have exerted an analogical impact on each other. That is, although there is a strong focus on *to* in the literature, as well as in this section, I emphasise that other POCs involving for example *towards* were most probably available in OE as well (112), and possibly aided the emergence of similar patterns with other prepositions (e.g. *towards* + animate goal → *to* + …').

(112) þe *specaþ* <u>yfelu</u>$_{TH}$ **togeanes sawle mine**$_{ADDR}$
'who speaks evil things towards my soul'
(Lambeth Ps. cviii. 20; OED, s.v. *speak*)

Moreover, as shown below, these newly emerging constructions are supposed to have been influenced by developments in other parts of the constructional network such as the increasing availability of prepositional objects for transitive verbs.

Starting with the class of verbs of accompanied motion (bringing/sending verbs) and their *to*-paraphrase, we can assume that initially, *to* – in its primary function of indicating spatial directionality – was confined to collocate with inanimate spatial goals. However, in certain contexts such as in (113a), the pragmatic inference could have been made that it was an animate person (or group of persons) situated at a location rather than the location itself that was on the receiving end of the directed action. Thereby, a reanalysis from [*to*: inanimate goal] to [*to*: animate goal] could have taken place, licensing unambiguously animate examples like (113b).

(113) a. And seo papa *seonde* þa <u>his gewrite</u>$_{TH}$ **to Englalande**$_{GOAL(inanim./anim.?)}$
'And the pope then sent his bull to England'
(ASChron., an. 675.10.534; taken from De Cuypere: PC)

[216]Bearing in mind the disclaimer discussed in Section (6.1) above, in that in the present framework, any change in form or meaning of an existing construction is taken to lead to the emergence of a new construction.

b. *Sende* þa digellice arendgewritu$_{TH}$ **to þam kasere**$_{GOAL(anim.)}$
'[He] then secretly sent letters to the emperor'
(Boeth., 1.7.19.65; taken from De Cuypere: PC)

From such initial instances of innovation, which were presumably pragmatically strongly marked, the new uses could have been analogically extended to other types. Eventually, with the lexical elements able to fill the various slots of the construction progressively and incrementally diversifying, and with those new elements (in our case different types of objects as well as verbs) increasingly often being used in the pattern, this could have led to the semantic generalisation of the [*to*: goal] construction and the addition of a new sub-type of this construction. More specifically, I suggest that this process would lead to the emergence of a new (lower-level) construction of [*to*: animate goal] besides the resident [*to*: inanimate goal] construction, as well as the establishment of a semantically rather general ('goal-like') and more schematic construction linking the two. Rather than competing against each other, however, the addition of new sub-types to the higher-level construction can be thought of as beneficial for the more abstract schema in that the likelihood of its form being expressed increases with the extension to new contexts.[217] By acquiring new functions and therefore new sub-constructions (in a process of host-class expansion), the original construction accordingly increased in generality and productivity, but at the same time decreased in compositionality. The process thus qualifies as a clear example of grammatical constructionalisation as postulated by Traugott & Trousdale (2013: 193).[218]

In the case of caused-motion verbs, change only occurred at a relatively fine-grained level as the overall meaning of 'concrete transfer towards a spatial goal' was not affected. Verbs of communication present a slightly different issue, however, since an entirely new semantic role was acquired by the preposition. Potential bridging contexts can here be found in instances of speech acts directed towards an entity ambiguous between a locational goal and an addressee (or a group of addressees), as in (114a). Frequent occurrences of such invited inferences could then eventually have led to the conventionalisation and semanticisation of an addressee meaning of the *to*-PP, i.e. the establishment of a new *to*-construction, able to serve as an alternative to the DOC in expressing communication events (cf. (*114*b).

(114) a. þæt hit$_{TH}$ **to Rome**$_{GOAL/ADDR?}$ *gebodode*
'who told/proclaimed it to Rome'
(Orosius, 4:11.109.12.2282; taken from De Cuypere: PC)

[217]Since *to* had already acquired a range of other functions, including e.g. that of marking comparison, an even more abstract construction of linking the preposition's form to a highly general meaning could be posited.
[218]Also, the phenomenon of 'old' material being drawn on to fulfil new functions can be conceptualised as an instance of 'exaptation' (cf. Gould & Vrba 1982; for a discussion of grammaticalisation as exaptation see e.g. the relevant contributions in Norde & van de Velde 2016).

b. God *cwæð* **to Moysen**$_{\text{ADDR}}$ <u>ðæt he wolde cumin</u>$_{\text{TH}}$
'God said to Moses that he would come'
(cocathom2.o3: 196, 16; taken from De Cuypere 2015c: 18)

Although addressees are frequently taken to constitute a metaphorical extension of recipients in PDE, the fact that speech verbs as a clearly delineated class are consistently found in prepositional patterns at a noticeably earlier time than the first appearances of *to*-POCs with giving verbs suggests that addressees and recipients indeed represent separate semantic roles (cf. De Cuypere 2015c: 18; also Daniel 2014). Nevertheless, the roles clearly overlap to a large extent semantically. Subsuming both recipients and addressees under a head label of 'concrete/abstract recipients' thus seems to be warranted in less detailed analyses, especially concerning later periods.

To conclude, *to* can be shown to have acquired additional functions (i.e. sub-constructional types) in early Old English already. These analytic variants compete with some of the more synthetic, case marked verb-class-specific ditransitive constructions, meaning that tentative links between the patterns and the prepositional constructions form. Crucially, however, the use of *to* was not yet fully extended to cover prototypical recipients. Although occasional instances of 'embryonic' recipient uses can be found in the OE data, this expansion to all types of direct and indirect, concrete and abstract giving events only took place at the turn to Middle English (cf. also De Cuypere 2015c).

The development of *from*-POCs (as well as *of*- and *æt*-POCs) proceeded along similar lines: again, the preposition gradually and incrementally came to be used in new contexts, in this case dispossession events involving animate sources. In this process, the arguments of the verbs were eventually reanalysed as expressing the toles of deprivees rather than those of locational sources/origins (cf. (*115*a-b). As can be seen in e.g. (115c), this development corresponds to an extension of the constructional meaning to more abstract, indirect dispossession events where no physical movement of a concrete entity is involved, and indicates the emergence of a new type of *from/of/æt*-constructions alongside the resident ones. These types could then furthermore be abstracted over, through which schemata with comparatively generalised, underspecified meanings could emerge.

(115) a. þeah þe *numen* <u>sie</u>$_{\text{TH}}$ neodlice **of cocrum**$_{\text{SOURCE}}$
'even if they [i.e. the arrows] were forcefully taken out of the quivers'
(Aldhelm's Riddle 33; Glossary Old English Aerobics, s.v. *(ge)niman*)

b. Ic wæs syfanwintre þa <u>mec</u>$_{\text{TH}}$ sinca baldor, freawine folca **æt minum fæder**$_{\text{SOURCE/DEPR}}$ ȝenam
'I was seven years old when the lord of treasures, the friend and lord of the people, took me away from my father'
(Beowulf, 242-2430; Glossary Old English Aerobics, s.v. *(ge)niman*)

c. Ne *afyr* <u>þinne fultum</u>$_{\text{TH}}$ **fram me**$_{\text{DEPR}}$
'Do not take your support away from me'
(Bl. H. 105, 30; Bosworth-Toller, s.v. *a-firran*; cf. also Visser 1963: 638)

Incidentally, with privative verbs it appears that a second option for prepositional complementation was present in OE alongside source-POCs (defined as specifying a PP-DEPR argument), namely a prepositional-theme construction of the type 'deprive so. of sth'. Accordingly, OE verbs of robbing/stealing are found either in a pattern of [REC- *prep*TH] (116a) or in a construction [*prep*REC-TH], cf. example (116b).[219]

(116) a. Gif hwylc man *reafað* **oðerne**$_{REC}$ æt his dehter$_{TH}$
'if any man deprives another of his daughter'
(Poenitentiale Pseudo-Egberti (Laud) iv. ix. 51; OED, s.v. *reave*)

b. *afyrde* **fram hire**$_{REC}$ […] þa leohtnesse$_{TH}$
'took the brightness away from her'
(Wærferth Dial. Greg. 288, I; taken from Visser 1963: 633)

In fact, judging from Visser's catalogue of verbal complementation patterns (1963: 613) as well as Bosworth-Toller's dictionary entries, the prepositional theme pattern might even have been the favoured choice for the majority of dispossession verbs if they were used analytically (cf. also Schwyter 2012).

Whether there really was a clear preference for one of these options in Old English, or whether both options were equally valid would, however, again have to be determined by means of a more large-scale corpus investigation. For the moment, I assume that both constructions were available and were used as alternatives to the synthetic (dispossessive) DOC at this point, but possibly showed subtle differences in terms of profiling of the respective participant roles.[220]

Finally, two more marginal groups which differ in semantic input but pattern together syntactically (at least to a certain extent) are of interest: first, light verb constructions denoting emotive events, and second, verbs of reversed (communicated) transfer, many of which constitute complex predicate constructions as well (cf. Brinton & Akimoto 1999a for an overview of such patterns in Old English). As to the former, complex predicate patterns such as 'have forgiveness/ envy/ love' were most probably strongly associated with prepositional patterns if the target of the emotion was overtly expressed (117a-b).

(117) a. Began þa *niman* swyðe micle lufe **to hyre**
'Then [he] began to feel such great love for her'
(LS 35 [Vit Patr] 74-75; taken from Akimoto & Brinton 1999: 38)

[219]As will be pointed out below, the latter option would be predicted to be more salient (or more successful) also due to the general tendency towards 'substituting' genitive case marking by a prepositional *of*-phrase in Old English (as in e.g. partitives).
[220]The further development of these constructional variants and their relationship with each other will briefly be dealt with below.

b. Siððan æfter ðan *genam* saul micelne nið **to ðam gecorenan dauide**
'After that Saul entertained great envy towards the chosen David'
(ÆCHomII 4.35.194-195; taken from Akimoto & Brinton 1999: 39)

Similarly, events of reversed transfer such as 'take example/ leave of so.' as well as of communicated reversed transfer ('ask a favour/ permission of so.') frequently occurred with a prepositional REC-argument marked by source-prepositions like *at*, *from* or *of*, among others (118a-b). Again, I presume that at some point in the history of English a reanalysis of the prepositional semantics from indicating a spatial, concrete relation to a more abstract notion of affectedness took place in these cases. As will be shown below, this semantic reanalysis is supposed to have been accompanied or followed by a change in syntactic analysis, as the relations between the constituents involved became increasingly stronger through a process of chunking (cf. e.g. Bybee 2010: 34-37).

(118) a. *Nime* heo bysne **be ðisre wudewan**
'[let her] take example by/of this widow'
(Homl. Th. i. 148, 5.; Bosworth-Toller, s.v. *niman*)

b. Hi *bædon* læfa **æt me**
'they asked leave of me'
(Guthl. 14; Gdwin 62, 13; Bosworth-Toller, s.v. *leaf*)

It is unclear whether other verb classes such as verbs of refusal or verbs of benefaction/ malefaction were associated with a prepositional construction in Old English already – however, it seems plausible to assume that this was the case, and that POCs were stably used with at least some verb classes in this period.

Taken together, the constructional network of ditransitive verb classes in Old English can then be sketched as suggested in Figure 53 (in an of course simplified manner): the abstract schema of the DOC is taxonomically linked to a number of verb-class-specific constructions (associated with the meanings of transfer, communication, caused motion, dispossession, reversed transfer, among others). Selected types of these sub-schemas are in addition horizontally related to prepositional constructions. While they are linked to patterns involving specific preposition types, however, they are not (yet) restricted to individual prepositions. That is, the sub-construction of dispossessional DOC is for example associated with not only one, but a range of SOURCE-type prepositions including *of*, *from* and *æt*. Verbs of caused/ accompanied motion, on the other hand, are not exclusively connected to *to*-POCs but are rather taken to subcategorise for any preposition originally denoting a directional goal (i.e. connect to a construction of [V_{cm} PP_{GOAL}-REC TH] in contrast to [V_{disp} PP_{SOURCE}-DEPR TH] in the case of privative verbs). The lack of an exclusive relationship to one particular preposition yet does not preclude the possibility that individual POC types are more entrenched and more productive than others; especially

with verbs of communication, we can e.g. assume that the *to*-POC was indeed highly salient already at this point.[221]

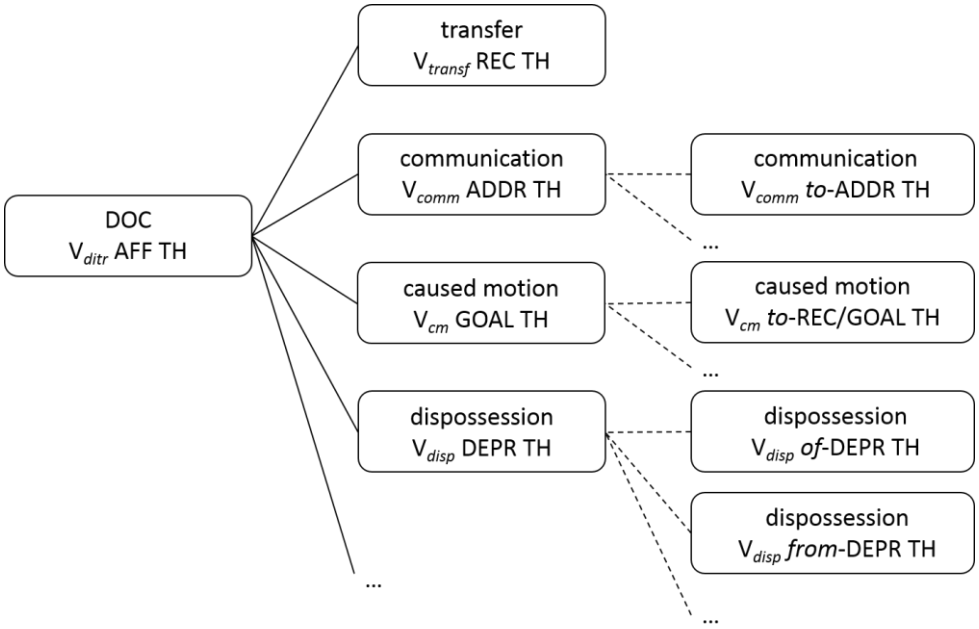

Figure 53 Constructional network of the DOC in Old English, with increasingly stronger links between certain verb-class-specific constructions and prepositional alternatives

The individual POCs furthermore differed markedly in regard to their success in competing against the resident DOC uses. For instance, the (*to*-)POC appears to have surpassed the DOC with speech verbs in Old English in taking up a much larger percentage of attested tokens in De Cuypere's dataset (2015c: 6). This is supported by the comparatively large fraction of POCs with communication verbs in the Middle English data (cf. above). In contrast, the DOC and POC seem to have entered into a more stable, balanced relationship with verbs of bringing and sending. Similarly to communication verbs, in the case of reversed (communicated) transfer verbs and verbs of attitude/emotion with complex predicate syntax, the POC was in all likelihood the preferred variant in OE already (cf. also Akimoto & Brinton 1999). In contrast, non-light verb 'simple' ditransitive constructions with similar semantics probably lacked an associated PP-construction altogether. As was pointed out above, mental/attitudinal verbs such as *forgive* or *envy*, for instance, clearly selected for the DOC rather than POC types in early Middle English, and are expected to have shown an even stricter distributional bias before. As to dispossession verbs, the distribution of DOC vs. POC is difficult to establish from a quick look at the data and literature. Even if the POC uses turned out to be only marginally successful at this point, however, this could have been caused by the fact that they stood in competition with yet another pattern, namely the prepositional theme-construction mentioned above.

[221]In general it can be presumed that the addressee marking-function was more soundly established with the *to*-POC than with other prepositional patterns at the end of Old English, i.e. that the *to*-POC had grammaticalised to a greater extent.

Overall, the fact that prepositional competitors should be booming is not unexpected, as their expressive power would certainly have been higher than that of the OE DOC case frames. In the case of communication verbs, an additional factor influencing the success of POCs might have been a discourse-pragmatic/ processing-related issue: since these verbs frequently selected for clausal themes, which were typically of much greater length than ordinary NP-themes (119), the preposition might have been highly useful in setting the addressee more clearly apart from the other argument constituent (cf. also Koopman & van der Wurff 2000: 262).

(119) Drihten *cwæð* **to ðan scuccan**$_{ADDR}$, "Efne he is nu on ðīnre handa; swa ðeah hwæðere heald his sawle."$_{TH}$
'The lord said to the devil: "Indeed he is now in your hand; nevertheless, preserve his soul."'
(Vsp.D.Hom. [Vsp D.14] 125/32; Glossary Old English Aerobics, s.v. *(ge)cweðan*)

Nevertheless, as also suggested by the results of the evolutionary game presented in Chapter (5.2.2) above, the advantage POCs would have had over the DOC concerning expressive power was not as great as it would come to be at a later stage where case-marking was highly ambiguous or absent. That is, with the case marking system still being intact to some degree, the benefit of using the more explicit POCs would have been cancelled out by the greater economy of the DOC, overall resulting in a tie-situation rather than an overtake of the prepositional competitors. With the changing environment of late Old English/ early Middle English, however, these conditions changed as well.

Before moving on to the various ways in which competition was resolved in the case of DOCs versus POCs in subsequent periods, the further extension of the alternative patterns in the course to Middle English should be briefly commented on. While only certain ditransitive verb classes were linked to a PP-pattern in Old English, this situation changed at the turn of the periods, as successively more and more verb classes developed relations to competing prepositional constructions. More specifically, I argue that with time, prepositions such as *from* or *to* were gradually but progressively extended to new contexts through analogy with already existing uses. Acquiring more and more functions then put these POCs in relation to verb classes traditionally associated with the DOC only. For example, the use of *from* with ditransitive dispossession verbs could have motivated the use of *from* with verbs of refusal. Although this verb class did not express events of a participant **losing** an entity, being blocked from reception could have been perceived as semantically close enough to trigger analogical extension. Also, verbs ambiguous between different readings, i.e. verb class membership, could have easily facilitated an extension.

The most conspicuous case in point is of course *to* – but also other goal-preposition types such as *till* or *towards* – which came to denote the recipient of a successful transfer event. As De Cuypere (2015c: 20) reveals, precursors to *to*-POCs expressing a giving situation can be found in (late) Old English already. Both bridging contexts of the type exemplified in (120a), where the REC-argument is

ambiguous between an inanimate goal (the church as a physical location) and a recipient (the church as a social community, metonymically referred to by the place name), as well as uses with a relatively clear recipient function as in (120b), show up in the OE data.[222]

(120) a. Ic oswulf ond Beornðryð min gemecca *sellað* **to cantuarabyrg to cristes cirican**$_{REC?}$ <u>ðæt land æt stanhamstede</u>$_{TH}$
'I, Oswulf and my wife Beornthryth give to Christ's church at Canterbury the land at Stanstead'
(codocu1.o1: charter 37.2; taken from De Cuypere 2015c: 20; cf. also Visser 1963: 624)

b. Denewulf bisceop & ða hiwan in Wintanceastre *leton* **to Beornulfa**$_{REC?}$ <u>hiora xv hida landes</u>TH
'Bishop Denewulf and the community at Winchester have let to Beornwulf fifteen hides of their land'
(S1285, dated: c.AD 902; taken from De Cuypere 2015c: 20)

Incrementally, such innovative uses could then become more frequent, and established themselves as legitimate competitors to the double object sub-construction of 'transfer-DOC'. It is assumed that this extension process started in a small corner of the network, most certainly with events of concrete physical transfer involving verbs such *giefan* 'give' or *sellan* 'give' and a tangible entity moved towards a recipient – from such instances, the new pattern then spread to increasingly more abstract event descriptions, including situations of intended or future transfer (cf. ME *offren*, *proffren* 'offer', *promisen* 'promise') as well as metaphorical transfer of the type 'pay so. a visit'. As Goldberg (2006) argues, facilitating factors for extending an innovative schema to more contexts include its occurrence in a highly token frequent collocation pattern (OE/Me *giefan/geven* 'give' in the present case) as well as a certain type variation (cf. the similarly frequent ME *yelden* or *yeten* 'give, yield, grant'); see also Rostila (2007: 151-158).

Similar developments are thought to have taken place simultaneously with other prepositions as well as other verb classes, until we arrive at an early Middle English constructional network in which all verb-class specific constructions associated with a schematic DOC are individually linked to a number of different preposition-specific constructions (and possibly also a slightly more abstract preposition-type specific pattern); see Figure 54. As in Old English, some POC-types are more successful in competing against the other POC-patterns, and thus occur more frequently. In the case of transfer (or communication) verbs, for example, the *to*-POC is clearly prevalent and more entrenched than the other variants, indicated by bold lining around the box in the figure below.

[222]Rostila (2007: 52, fn45), among many others, points out that a reanalysis of a directional goal-preposition to a more abstract, procedural function of 'recipient'-marking is neither unexpected – considering that the semantic roles of goal and recipient are very close – nor unusual, but can in fact be witnessed in many languages (cf. also Newman 1996: 88; Haspelmath 2000: 789; Heine & Kuteva 2002: 37-38; Lehmann 2002: 73; De Cuypere 2013, 2015b).

Dispossession verbs, on the other hand, are predominantly found in *from* or *of*-patterns, although further variants can still be observed, too.

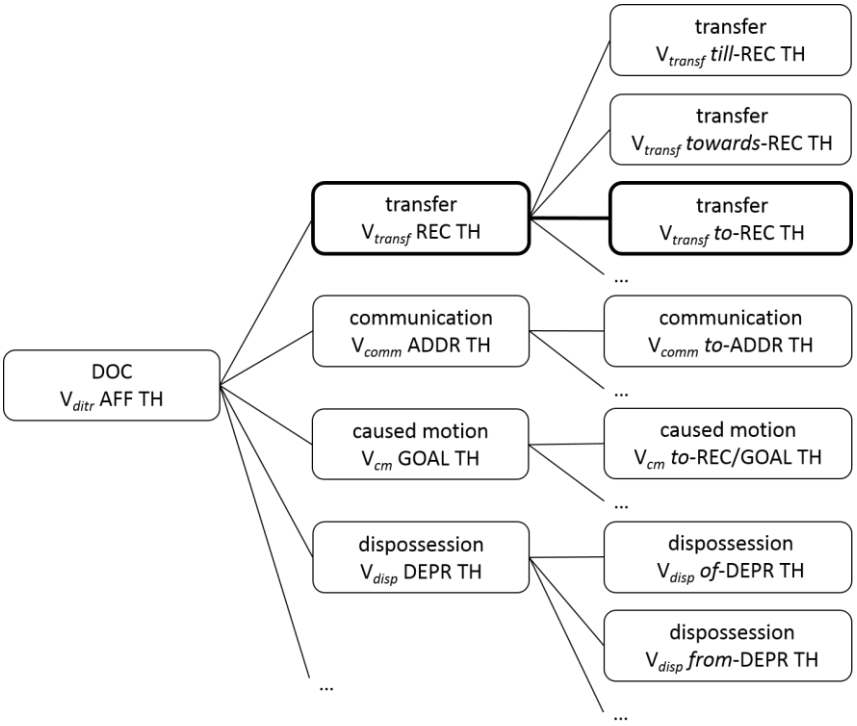

Figure 54 Constructional network of the DOC in early Middle English, with added links between further verb-class-specific constructions and prepositional competitors

It is possible that at this point abstractions over the various POC-types form in some speaker minds, leading to a highly schematic construction linking a ditransitive verb to a prepositionally marked affected (typically animate) entity and a bare theme-argument [$V_{ditrans}$ *prep*AFF TH].[223] From this schema a tentative horizontal link can in turn develop to the abstract DOC construction. This would mark the beginning of an alternation relationship between the more synthetic and the more analytic means of expressing a ditransitive event. However, a relatively complex system with a great deal of variation such as the one proposed here for early Middle English is bound to be subject to change since it is difficult to maintain. It is therefore expected that the competition among POC-types as well as between DOCs vs. POCs is sooner or later resolved in some way. In the following, the three different pathways of development that can be discerned in this regard in the course of Middle English will be presented. Most importantly, one of these pathways leads to the establishment of a cooperative relationship between allostructions, and the formation of a ditransitive constructeme. This development crucially constitutes the emergence of the dative alternation proper.

[223]This construction would also be linked to, and inherit from, a more abstract caused motion construction, which also licenses instances such as *John loads hay onto the wagon* (cf. Goldberg 1995).

6.2.1.2.2. The fate of POCs in Middle English – cooperation, confinement, continuity

I have shown above that the relative frequency of POCs in comparison to the DOC rose substantially in the initial periods, suggesting that they had certain traits that made them more successful than the synthetic construction. However, it has also been demonstrated that the development of POCs differed markedly between various verb classes, i.e. was strikingly dependent on the semantics of the verbs involved. In some cases, the POC entered into a highly productive and symbiotic relationship with the synthetic and resident DOC; this was seen with transfer and transfer-related verbs. In other cases, most notably with verbs of dispossession and benefactive/malefactive verbs, the competition was resolved by one option being ousting (DOC) by the other (POC). The behaviour of yet another set of verb classes does not seem to clearly fit either pathway, or in fact does not show any change at all. Often, this means the continuity of Old English usage. A case in point is the development of complex predicates of emotion/mentality (such as *have love*). The history of other examples like verbs of reversed communicated transfer (*ask so. a favour*), in contrast, are slightly more complex in that both DOC and POC uses are retained, but the verb class does not participate in the PDE dative alternation. The next sections will discuss each of these groups in turn, focussing on changes in the relationship between DOC and POC. Although the issue is evidently strongly linked to the semantic development of the DOC as a whole, this matter will be left for discussion in the subsequent chapter (6.2.1.3).

6.2.1.2.2.1. Cooperation: the emergence of the ditransitive alternation(s)

As we have seen, the *to*-POC and related prepositional constructions are thought to have extended their functions to cover events of successful transfer to a typically animate recipient by early Middle English, and to have thereby entered into a relationship of competition with the corresponding verb-class specific DOCs. (The more schematic DOC construction at this point subsumes a variety of different verb-class specific constructions, and is probably still linked to some extent to a [DAT-ACC] case construction, although increasingly giving way to an unmarked pattern). In the course of the period then, the 'goal'-POCs analogically extend to ever more contexts, and frequently come to denote abstract, intended transfer situations, as demonstrated by the data for verbs of abstract transfer above. As a consequence of this generalisation in meaning, the prepositional competitors greatly increase in frequency. Their success is furthered by the (still) greater explicitness of the prepositions in comparison to the highly underspecified DOC, as finer distinctions can be expressed by using subtly distinct prepositions (e.g. *give towards* vs. *give to*). For some time, the higher expressiveness that is made possible by this availability of a number of different prepositional construction types aids the fitness of the POC-strategy as a whole. However, the different POCs also compete against each other, and *to*-patterns soon take the lead, gradually ousting the other variants until the *to*-POC establishes

itself as **the** alternative to all transfer-related DOCs (cf. Figure 55). The greater success of the *to*-POC can be explained by its greater frequency and entrenchment from early onwards, in turn determined by its being more economical than other POC types (*to* vs. *towards*) as well as its greater semantic flexibility. As shown by De Cuypere (2013, 2015c), the preposition *to* had already acquired a number of non-spatial functions in other constructions by Old English, in contrast to other prepositions, which were still more limited at this point. This greater generality is supposed to have aided the preposition's expansion to new contexts in other parts of the constructional network, and constitutes an advantage of *to* over other prepositions like *till*, which were arguably less advanced in respect to semantic bleaching (meaning that the sub-sense of spatial direction was more salient in the case of *till* than with *to*). An exception to the broad restriction to *to*-POCs is the case of *unto* and *onto*. As pointed out above, these composite prepositions came into being and began to mark recipients from mid-/late-ME onwards. However, I take them to have cooperated with and to have constituted variants of *to* rather than contestants. Nevertheless, they appear to have been ousted later on, as their use in the PDE dative alternation is not grammatical anymore; this suggests that the complex prepositions diverged semantically from their 'parent' lexeme at some point after Middle English (cf. also Rostila 2007: 216, fn107).

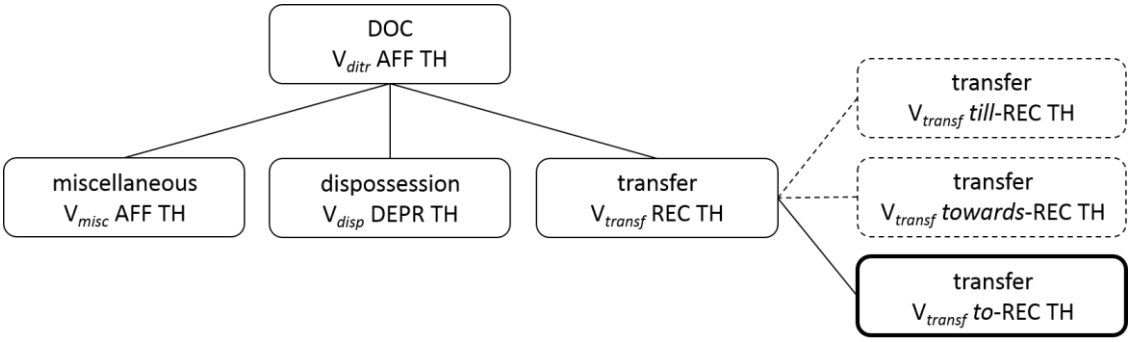

Figure 55 Constructional network of (transfer) DOC and (to-)POC in Middle English

To sum up, I propose that in the course of the period, *to* establishes itself as a potent competitor to the DOC, which, as will be discussed in more detail below, concomitantly moves towards a more coherent meaning of 'transfer'. That is, after an initial period of high variation in prepositional complementation of (transfer-)DOC paraphrases, the system sees a certain degree of regularisation, with the *to*-POC remaining as the only competition to a more narrowly defined DOC. Interestingly enough, however, this situation of [transfer: DOC] versus [transfer: *to*-POC] does not result in the ousting of one of the variants in favour of the other – although the prepositional pattern does take over for a certain period of time, there is a reversal of this trend towards the end of Middle English, with the DOC gaining in frequency again. This u-turn behaviour can be attributed at least in part to the increasing fixation of constituent order as well as the semantic development of the DOC. In general, however, it can be seen as the outcome of competing pressures which favour different constructional

means. While the DOC is, for example, more successful in terms of economy (in being shorter than the *to*-POC with its additional element), the *to*-POC still retains a greater expressivity, and is thus equally successful. Rather than causing one construction to be lost, the increasingly close link between the two patterns thus results in the emergence of a symbiotic relationship, in which the constructions co-exist and cooperate with each other (cf. also Steels 2011b). This means that instead of competing for exactly the same function, the semantically quasi-synonymous constructions begin to diverge in regard to discourse-pragmatic factors, with each of them constructing their own niche (cf. also Traugott & Trousdale 2013). In this mutually beneficial relationship, the DOC comes to play the part of the strong variant (taking up about 70 per cent of all ditransitive tokens between Early Modern English and PDE; cf. Wolk et al. 2013; Gerwin 2014; Röthlisberger 2015).[224] The relationship is taken to be advantageous for both constructions in that the expression of one also results in the activation of the other pattern, resulting in a higher degree of entrenchment of both constructions, and an increased likelihood to be activated in the future. Furthermore, as Perek (2015) shows, the association between the patterns also impacts their respective productivity: if a new verb comes to be used in one of the members of the alternation, it is typically available for use in the other variant as well (cf. Perek's notion of 'alternation-based productivity, Chapter 2.2 above).[225]

The assumption of a 'symbiotic relationship' between the two constructions can be conceptualised in terms of Cappelle's (2006) and Perek's (2015) constructeme proposal: I here assume that at some point in this story, a schematic process takes place that gradually leads to the establishment (or constructionalisation) of a higher-level alternation-based generalisation over constructions which, although different in form, are used to encode similar categories of events. As pointed out above, such a 'constructeme' is supposed to consist "of (i) a constructional meaning abstracted from the meaning of the variants of the alternation, with (ii) an underspecified form which contains only the commonalities between variants, and thus leaves unspecified the syntactic type […] and linear order […] of the post-verbal complements" (Perek 2012: 629-630; cf. also Cappelle 2006). The constructeme then forms a network with its 'allostructions', in this case the DOC and *to*-POC, which in contrast to its higher-level abstraction "fully specify their syntactic form and add semantic and pragmatic information to the meaning inherited from the constructeme" (Perek 2012: 630); cf. Figure 56.[226] The

[224] As is well known, and as will be dealt with below, the development furthermore goes hand in hand with an increasing restriction of the individual patterns to a specific constituent order (cf. also McFadden 2002; De Cuypere 2015b).

[225]Despite slight asymmetries in the productivity of the constructions, with a considerable number of verbs being restricted to the *to*-POC, this issue can be counted as a clear benefit in forming a constructional relationship.

[226]Whether higher-level alternations are really necessary to explain the phenomena dealt with by Perek (2015), or whether it suffices to assume a strong horizontal link to hold between the constructions will be left unanswered here (cf. van de Velde 2014).

alternating constructions are therefore considered to be independent yet strongly connected constructions (cf. Perek 2012: 604).

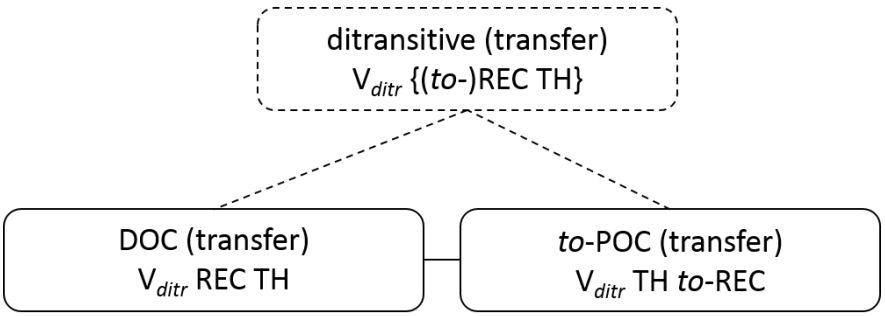

Figure 56 The ditransitive constructeme and its allostructions (DOC and *to*-POC)

Evidence for this assumption, that is to say, for the existence of a higher-level 'ditransitive' generalisation or horizontal relationship between the two patterns in PDE comes from sorting task experiments as well as priming experiments, as was discussed above (e.g. Goldwater et al. 2011; Perek 2015). It is furthermore evident in that certain (less prototypical) verb classes that are still used in the DOC in PDE despite not clearly corresponding to a basic transfer-meaning, are frequently coerced into the alternation. For example, verbs of refusal occasionally (if not very often) occur in the *to*-POC, and even a dispossessive DOC verb such as *cost*, if exceptionally used in a prepositional pattern, selects for a *to*-complement (Colleman & De Clerck 2009: 24, 36). Interestingly enough, this constraint is still absent from Middle English, where even in the later sub-periods, verbs such as *deny* or *refuse* vary concerning the POC-type they appear in (121a-b).

(121) a. But Crist *denyeþ* <u>þis</u>$_{TH}$ **to hem**$_{REC}$
'But Christ denies this to them'
(CMWYCSER,I, 374.2660; M3)

b. he wil not / *denye* <u>his feet</u>$_{TH}$ **fro the**$_{REC}$
'he will not deny his feet from you'
(CMAELR4, 19.544; M4)

What this variability tells us is that although the link between DOC and *to*-POC was already fairly strong at the end of Middle English, and although the data presented above clearly indicate that the large bulk of changes that led to today's situation took place within Middle English, the establishment of the dative alternation as we know it from PDE was still in progress during Middle English. In other words, while the constructions had presumably entered into a tight symbiotic relationship with mutual benefits by the beginning of Early Modern English, the association only became (near-)exclusive and fully productive at a point beyond the period under investigation here.

It should be noted, however, that even though there are good arguments for assuming a strong relation between the DOC and *to*-POC in PDE, there are certain verbs (and light verb combinations) which do not typically enter into the alternation. Examples for DOC-biased verbs include patterns such

as 'give so. a headache/kick' – these complex predicates are near-categorically restricted to the DOC in PDE (cf. Goldberg 1995: 94). Nevertheless, these constructions do not pose too much of a problem for the symbiosis-approach taken in this thesis. I take the predominance of the DOC in this respect to be caused by the strong focus on the action expressed by theme, meaning that the *to*-POC is considerably less well-suited for use in these cases on relatively straight-forward discourse-pragmatic grounds (cf. Goldberg 1995). Restrictions in the other direction, i.e. verbs that are semantically and discourse-pragmatically compatible with the DOC, but are confined to *to*-POC use (e.g. *explain*, *donate*), are slightly more challenging. As discussed above, the preference for the prepositional variant with such verbs needs to be explained by productivity asymmetries which work in favour of the *to*-POC. Furthermore, pre-emption effects might play a role (cf. Boyd & Goldberg 2011; Goldberg 2011; Stefanowitsch 2011; Perek 2015).

Finally, we need to comment on the fate of the so-called 'benefactive alternation', referring to the phenomenon that in PDE, there is a choice between the DOC (122a) and a prepositional variant involving *for* (122b) in the case of benefactive verbs/ verbs of creation (Theijssen et al. 2010: 115; cf. also Kittilä 2005). As Goldberg (1995: 77) points out, the subsense here is one of 'X intends to cause Y to receive Z', and the REC-argument is a beneficiary rather than a recipient.[227]

(122) a. John *baked/bought* **Mary**$_{\text{BEN/REC}}$ a cake$_{\text{TH}}$

b. John *baked/bought* a cake$_{\text{TH}}$ **for Mary**$_{\text{BEN/REC}}$

While this second alternation is undoubtedly present in PDE, though, it is strikingly absent from Middle English. Even in the later subperiods of M3 and M4, i.e. at a time when *to* was already very frequently used to paraphrase verbs of transfer, prepositional uses of verbs of creation or intended causation oscillate between *for*-POCs and *to*-POCs, with the latter tending to be the dominant pattern.[228] Examples for this phenomenon a given in (123) below, with (123b-c) indicating that even single verbs tend to vary concerning the construction they appear in.

(123) a. Salamon *bildide* a noble hous$_{\text{TH}}$ **to himself**$_{\text{BEN/REC}}$
'Salomon built a noble house to himself'
(CMPURVEY,I,12.477; M3)

[227]But note that as Malchukov, Haspelmath & Comrie (2010: 3) mention, the distinction between benefactive and ditransitive verbs is not always entirely clear in PDE either; typically, benefactives are identified as such on the basis of their ability to be paraphrased by *for* rather than *to*. In the present account, these verbs were included in the class of benefactive/malefactive verbs, more specifically the subgroup of 'verbs of creation/ intended causation'.

[228]It has to be admitted, though, that this verb class is by itself relatively low in numbers; the representativeness of the figures is thus questionable (*M3*: N=50; *M4*: N=22). While the difference in proportions of *to*-POCs and *for*-POCs is significant for M3 ($p \approx 0.0001$; $\varphi=0.6$), this is not the case for M4; however, as just indicated, the numbers are too small to convincingly take this as evidence for a possible decreasing trend of *to*-POCs.

b. God haþ *wrou3t* **for him**$_{BEN/REC}$ meny a faire miracle$_{TH}$
'God has often worked/caused great miracles for him'
(CMBRUT3,101.3058; M3)

c. so mych sorow$_{TH}$ *wrought* **to þe Britouns**$_{BEN/REC}$
'[he] worked/caused so much sorrow to the Bretons'
(CMBRUT3,45.1365; M3)

These results demonstrate that the recruitment of *for* as a definite marker of this function, and accordingly the establishment of the benefactive alternation proper, is a development that only occurred at a later stage in the history of English. Possibly, this was due to the semantics of *to* being perceived as too restrictive to include the aspect of benefaction after all, meaning that an innovative variant with *for* instead of *to* would have been able to propagate more successfully than the resident construction. However, rather than resulting in the ousting of this verb class from the DOC due to its disuse in one member of the alternation, this development appears to have led to a division in the alternation, with two separate (but closely related) paraphrases having come to be available for ditransitive verbs.[229] Nevertheless, the benefactive alternation in PDE seems to be less entrenched and less systematic than the dative alternation; this assumption could certainly be checked on the basis of experimental investigations of this issue.

In conclusion, I have shown in this section that the PDE dative alternation can be seen as the outcome of competition resolution on two distinct levels. In a first stage, the *to*-POC managed to successfully oust any other prepositional paraphrase types that were linked to the OE 'transfer'-verb-class specific double object construction. Once it had acquired this status, after a period of competition with the DOC the *to*-POC entered into a cooperative relationship with its synthetic alternant. This ultimately suggests that the history of ditransitives in English and the relationship between DOC and POCs followed a path of 'stable symbiosis' (OE) > 'competition' (ME) > 'stable symbiosis' (late ME). Although still subject to changes (such as the introduction of the benefactive alternation), and still in progress to some extent, it is safe to assume that the alternation as we know it today was relatively advanced and stably established by the end of the Middle English period. In the paradigmatic relationship that is the alternation today, the DOC then assumes the role of the 'stronger' variant, and the to-POC that of the 'weak' variant, with the choice for one or the other pattern being determined by discourse-pragmatic factors. Crucially, the constructions have thereby come to constitute allostructions of each other rather than competing synonyms. That is, with the association between the constructions becoming closer and closer, a constructeme formed over the formally distinct

[229]As dealt with below, an ousting of this class from the DOC was probably prevented by the semantic closeness to the core meaning of the construction, since although reception is not guaranteed with 'benefactive' verbs, the notion of transfer is still highly salient.

allostructions, meaning that the dative alternation in PDE represents a network of tightly connected constructions.

An entirely different pathway concerning the DOC-POC relationship development is in contrast taken by the second group observable in the data; this group, which prominently includes verbs of dispossession, will be discussed in the following section.

6.2.1.2.2.2. Confinement: POC ousts DOC

In contrast to the scenario of both constructions surviving and constructing their niches with retention seen with the first group of verb classes, the second group (exemplified by verbs of dispossessions) follows a very straightforward path of one construction winning out at the expense of the other. The precise scenario I propose here is the following: in Old English, SOURCE-PP constructions are available as optional paraphrases for dispossession DOCs. However, they are used comparatively rarely, only occasionally replacing the synthetic pattern. As mentioned above, this infrequency is possibly related to the presence of another type of prepositional competitor, namely PP-theme constructions, which seem to have been more popular than the PP-REC patterns due to reasons we can only speculate about at this point. From early Middle English onwards, though, the constructions in question become increasingly frequent. Quite probably, this renewed interest is fuelled by the growing success of other prepositional DOC-paraphrases such as the *to*-POCs described in the preceding section, as well as the increasing loss of inflectional markers. As the data show, the dispossession-POCs rocket in the course of the period, until in late Middle English they become near-obligatory. While occasional DOC uses of privative verbs can still be found, they are clearly in demise, and are bound to disappear from the language entirely. (Rare examples of DOCs with privative verbs do occur in later periods; however, they are highly marked as archaic).[230] This development can be visualised as an increasing entrenchment and productivity of the prepositional construction over time, which results in an incremental complementary weakening of the original DOC sub-construction. The fewer times the schema is activated, the more it fades, until it is eventually lost (almost) completely (cf. Figure 57). The disappearance of the DOC uses is accompanied by a reduction in the range of individual POC-types, meaning that the dispossession-POC is increasingly restricted to *from* and *of*, while other prepositions such as *at* (in the meaning of 'from') slowly fall out of use. Although not yet visible in the Middle English data, this decrease of PP-types appears to have continued in later times, since the PDE construction is largely associated with *from* only, while *of* is ungrammatical in most varieties of English (cf. Goldberg 1995: 45).

[230]A slightly problematic issue is the continuing use of *cost* in PDE; this will be addressed in more detail in Section (6.2.1.3.2) below.

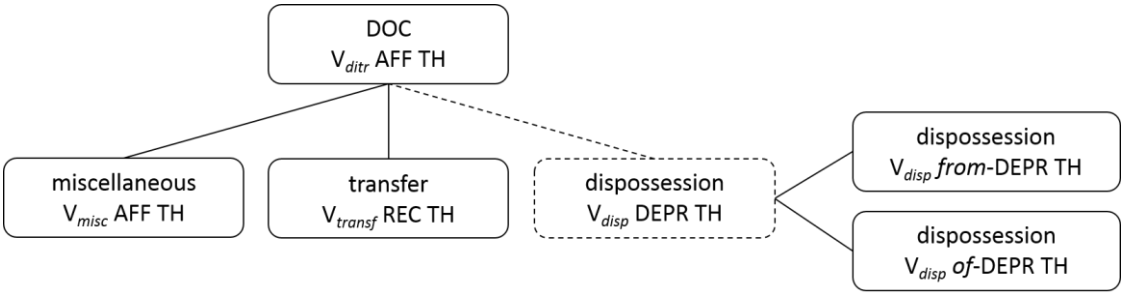

Figure 57 Constructional network of (dispossession) DOC and POCs in Middle English

While the history of dispossession verbs is thus to a certain extent characterised by a loss of constructional relations, the PDE prepositional deprivee-construction can nevertheless be assumed to retain a clear link to the *to*-POC and other paraphrases, not least since they can all be considered to be related to and inherit from a more abstract 'caused motion'-construction (also instantiated by the types of *load hay into the wagon*/ *put a plate on the table*/ *take a friend to Rome*). Incidentally, some of these members of the caused-motion construction also partake in an alternation with another pattern, namely the *with*-applicative. This relation, often referred to as the '*spray/load-*' or 'locative alternation', can be illustrated by the sentence pair in (124); cf. Perek (2015: 158-163), also Goldberg (1995).

(124) a. John *loaded* hay **onto the wagon**
b. John *loaded* **the wagon** with hay

The locative alternation in a way corresponds to the availability of two different prepositional constructions for dispossession verbs (as well as other ditransitives) throughout the history of English, i.e. the PP-REC versus PP-TH constructions briefly commented on above. While in Old and later in Middle English the majority of privative verbs fluctuated between the two prepositional variants (cf. *stelen* 'steal' in (125a-b]), it appears that this variability was limited in the course to PDE, where at least in the standard, most verbs are found exclusively in one or the other.

(125) a. For they putten in theves that *stelen* the soules$_{TH}$ **of Jhesu Crist**$_{DEPR}$
'For they put in thieves that steal the souls from Jesus Christ'
(CMCTPARS,315.C1.1156; M3)
b. and *steleth* hir soule$_{TH}$ **fro Crist**$_{DEPR}$
'and steals her soul from Christ'
(CMCTPARS,319.C1.1317; M3)

A prime example for this phenomenon is the case of *to rob* versus *to steal*. The former is associated with a prepositional theme construction, whereas the latter is typically restricted to the *prep*REC-variant (126a-b). These differences in syntactic realisations of participant roles are taken to result from profiling differences (as well as slight differences in the participant roles themselves), in that *rob*

specifies a semantic frame of <**robber victim** goods> in contrast to *steal* with a frame of <**stealer** source **goods**> (Goldberg 1995: 48).

(126) a. Jesse *robbed* **the rich**$_{DEPR}$ <u>of their money</u>$_{TH}$ / *Jesse *robbed* <u>money</u>$_{TH}$ **from the rich**$_{DEPR}$

b. Jesse *stole* <u>money</u>$_{TH}$ **from the rich**$_{DEPR}$ / *Jesse *stole* **the rich**$_{DEPR}$ <u>of their money</u>$_{TH}$[231]

This development could on the one side be attributed to changes in the semantics of the individual verbs, i.e. a specialisation to one particular construal of the event. On the other hand, it could be argued that the constructions – that is, the prepositional theme vs. the prepositional REC/deprivee construction – have themselves come to increasingly diversify in meaning. Reinforcing tendencies that were present in OE already, they would have come to more clearly 'splitting up' the semantic space, thus cooperating rather than competing against each other. Combined with profiling differences between individual verbs, this would then lead to the constraints on verb usage seen in PDE. The latter is clearly the preferred view from my perspective, although the issue would certainly have to be examined more thoroughly before drawing final conclusions.

As will be discussed below, another case of verb classes disappearing from the DOC is the group of verbs of pure benefaction/ malefaction – unfortunately, the number of instances of this class that do not constitute complex predicate constructions in the present database is rather low, which makes it more difficult to test assumptions about their behaviour. Nevertheless, it does seem that as predicted, this verb class increasingly drops out of DOC use in the course of the Middle English period, and more frequently appears in POCs (or possibly other patterns). In fact, judging from PDE data, the different sub-types subsumed in this class must have diverged in behaviour at a certain point, quite possibly drawing on distributional differences that were already present in Old English. While verbs of pure benefaction usually occur in a pattern corresponding to the *for*-POC involved in the benefactive alternation (127a) in PDE, it looks like malefactive verbs did not resort to POCs, but instead came to use different means of expression (such as the affected person being marked by a genitive phrase, (127b]).

(127) a. John *opened* <u>the door</u>$_{TH}$ **for Mary**$_{REC}$

b. John *broke* **Mary's**$_{REC}$ <u>shoulder</u>$_{TH}$

Both developments, meaning the exclusive association of benefactives with a *for*-pattern and the emergence of the malefactive construction, could not be captured by the data investigated in this project: as to the former, the relevant verbs typically vary between *to*- and *for*-POCs similar to verbs of creation (cf. also above), suggesting that a clearer relation was established only later. In regard to

[231]All examples taken from Goldberg (1995: 45).

the latter, no reasonable proposals can unfortunately be put forward here, as patterns other than the POCs were outside the scope of this study.

In the following section, the similarly thorny cases of the highly heterogenous group of marginal or unusual DOC uses will be addressed, rounding off the discussion of the fate of different POCs in Middle English and beyond.

6.2.1.2.2.3. Continuity: stable distribution maintained

The last group to be dealt with here, as already pointed out above, does in fact not constitute one coherent category with homogenous behaviour in respect to the relationship between DOCs and POC uses. Instead, this group subsumes three smaller sets of verb classes (or indeed single verb classes, or even parts of semantic verb classes), which are joined together by the circumstance that their development differs from that of the groups presented so far. Furthermore, the classes in question are comparatively infrequent, rather heterogeneous within themselves, and also to some extent idiosyncratic in their behaviour in PDE, meaning that a closer investigation of the patterns throughout the periods is definitely warranted and needed.

To begin with, a rather straightforward case is provided by verbs of emotion/attitudes (referred to as MENTAL verbs above) as well as verbs of reversed transfer of the type 'take one's leave of so./ take an example of so'. As to the former, it has to be noted that the discussion here concerns only a sub-part of this broader verb class. More specifically, it is only complex predicate constructions involving mental verbs that are of interest in this respect (128a-c). This set of verb constructions importantly differs strikingly from other, 'simple' verbs of emotion/attitude such as *forgive* or *envy*, which vary between DOC and *to*-POC in Middle English and therefore represent members of the first group mentioned in this chapter.[232]

(128) a. John *had* pity$_{TH}$ **on (upon/of?/…) Mary**$_{STIM}$
b. John *had* love (feelings/…)$_{TH}$ **for Mary**$_{STIM}$
c. John *felt* envy (hatred/…)$_{TH}$ **at (towards/..) Mary**$_{STIM}$

In regard to verbs of reversed transfer, these evidently show a close affinity to dispossession verbs, as the REC-argument denotes an animate source of a typically abstract 'reception'-event. The main reason for keeping these groups apart was their affinity to light verb constructions, due to which they were expected to behave slightly differently.

[232]As discussed in Goldberg (1995), Colleman & De Clerck (2008), and others, *forgive* and *envy* do not constitute prototypical members of the DOC in PDE, and appear to increasingly resort to prepositional constructions (often involving a prepositional theme rather than a recipient, as in *John envied Mary for her energy*); cf. also Section (6.2.1.3.2) below.

What is striking about both of these classes, i.e. reversed transfer and emotion, is that they were strongly associated with prepositional syntax in Old English already. Indeed, it is unclear whether DOC uses of these verbs were anything more than marginal in early English, if attested at all (cf. Akimoto & Brinton 1999). In the Middle English data, occasional examples of the DOC with such verb classes can be found; nevertheless, the POC is undoubtedly much more entrenched. Interestingly, the (in any case marginal) DOC variant seems to disappear again at some point after Middle English, as in PDE such light verb combinations are entirely confined to the PP-constructions. It is therefore plausible to presume that the state of (near-)total predominance of POCs in Old English was replaced by a short period of competition against DOC uses. This emergence of DOC variants in Middle English was likely driven by the increasing ability of POCs (involving the same prepositions used to express 'ditransitive' reversed transfer and emotion) to paraphrase DOCs. That is, the DOC pattern could easily have been extended to reverse transfer V+NP combinations in analogy to dispossessive verbs (*steal sth. of so*.: *steal so. sth* → *take example of so*.: *take so. example*). Similar processes of reanalysis/analogical thinking might have triggered the appearance of innovative DOC variants with mental complex predicates. Nevertheless, the competition was soon re-resolved in favour of the POC, i.e. the DOC with these verb classes was not able to succeed against the fitter prepositional patterns for a number of reasons also responsible for the general demise of the DOC in the network. Moreover, the POC might have been preferred in these cases due to the fact that its favoured syntactic form was more suitable for the discourse-functional properties of such events (by placing a focus on the stimulus of the emotion). While for some time, the two constructions therefore seem to have entered into a cooperative relationship in which the DOC was able to survive as the weaker variant, the increasingly strong association of the construction with the *to*-POC, among other things, must have led to the classes eventually resorting to the POC again.

Summing up, the Old English prepositional light verb combinations expressing reverse transfer and emotion were coerced into alternating with the DOC in the course of Middle English. Once the ditransitive alternation was restricted to a specific POC-type (namely the *to*-POC), however, the prepositional patterns returned to being the only option (cf. also the contributions in Brinton & Akimoto 1999a).[233] A further curious difference between this group and the classes discussed so far is that in the latter case, we see a reduction in the range of verb classes at a more abstract level (e.g. the schematic category of dispossession verbs being associated with *from* only). In contrast, in spite of some reduction in preposition-type variation over the course of time, the verb classes in question (reverse transfer, emotion) are still used with a range of prepositions, as illustrated in the examples

[233]Of course, this does not mean that other means of expression of these semantic relations were not possible (cf. e.g. *John felt envy towards Mary* vs. *John envied Mary*; *John took example of Mary* vs. *John took Mary as an example*/….).

above (128). I therefore argue that we are dealing with a number of lower level (complex predicate-specific) constructions, each subcategorising for a particular (set of) POC-type(s), rather than an abstract construction which specifies the preposition involved. These cases thus qualify as instances of lexical constructionalisation, showing a decrease in schematicity, productivity and compositionality as they moved from unrestricted constituent combinations towards increasingly tighter relations between verb, noun and preposition, and eventually became reanalysed as one idiomatic chunk (cf. Traugott & Trousdale 2013: 193; also Akimoto 1995; Brinton & Akimoto 1999a; Brinton & Traugott 2005).[234]

A slightly different issue is presented by the case of reversed communicated transfer, meaning verbs/phrases "used to encode events where something is required of the indirect object referent" (Colleman & De Clerck 2009: 34). This class is special insofar as it would be predicted to act like that of verbs of reversed transfer and dispossession verbs. Accordingly, it should either show a preference for POCs throughout the history of English or come to be confined to prepositional uses from Middle English onwards. However, the group appears to pattern with neither; as shown in the examples in (129) below, in Old English such inquiries could be expressed by a DOC (129a-b) as well as a POC including *to* (129c) but also *from*, *of* and others (cf. also Visser 1963: 612-613). Furthermore, a second type of prepositional construction is often found, in which the theme is marked by a preposition (e.g. *ask a person of/for mercy*). That is, the state of affairs for this event description differs from reversed transfer uses in that there is no clear preference for POCs at this point.

(129) a. Hig **hine**$_{\text{SOURCE}}$ *acsodon* <u>ðæt bigspell</u>$_{\text{TH}}$
'They asked him the parable'
(Mk. Th. 4, 10.; Bosworth-Toller, s.v. *acsian*)

b. Gif hit **hine**$_{\text{SOURCE}}$ <u>hlafes</u>$_{\text{TH}}$ *bitt*
'If it [the child] asks him for bread'
(Homl. Th. i. 250, 8; Bosworth-Toller, s.v. *biddan*)

c, Hy him **to eow**$_{\text{SOURCE}}$ <u>arna</u>$_{\text{TH}}$ *bædun*
'They asked [prayed] to you for compassion'
(Exon. 27 b; Th. 83, 9; Cri. 1353; Bosworth-Toller, s.v. *biddan*)

The same situation continues in Middle English, where all possibilities are frequently attested – although POCs rise in proportional frequency in the beginning of the period, there is a reversal of the trend towards the end, when the DOC gains in frequency again. Instead of a clear move towards POCs as in the case of dispossession verbs, DOC uses therefore remain available, and even thrive to some extent. In PDE, we accordingly find reverse communicated transfer events expressed in the DOC

[234]The same decrease of compositionality etc. is evidently also seen in other ditransitive complex predicates such as 'give so. a kiss/ headache'. As discussed in various places, these idiomatic combinations are typically prevented from entering the dative alternation in PDE (**John gave a headache to Mary*) – a sign of their rather idiosyncratic nature.

(130a), a prepositional REC-pattern typically involving *of* or *from* (130b), as well as a prepositional theme construction with *for* (130c); cf. e.g. Goldberg (1995: 131); Geeraerts (1998); Colleman & De Clerck (2008: 204-205, 2009: 34-36).

(130) a. John *asked* **Mary**$_{\text{SOURCE}}$ a favour/the time/her name/her phone number$_{\text{TH}}$

b. John *asked* a favour/the time/her name/her phone number$_{\text{TH}}$ **of/from Mary**$_{\text{SOURCE}}$

c. John *asked* **Mary**$_{\text{SOURCE}}$ for a favour/the time/her name/her phone number$_{\text{TH}}$

As a quick search of the COCA/BNC and on Google shows,[235] the DOC constitutes the most frequent of these options, followed by the PP-theme construction with *for*, and finally the *of/from*-POC as the least popular variant.

Although the overall constructional possibilities hence did not change over time, some alterations did take place: first, there was a reduction in preposition types available, as the POC in this case is now restricted to *of* and *from*, while the *to*-POC is used to mark 'ordinary' communication events (*John asked a question to Mary* vs. **John asked a favour to Mary*).[236] Furthermore, the DOC seems to have become limited to a certain type of collocation. For example, concrete, physical themes are disallowed from the construction (**John asked Mary bread*). This means that this particular sub-construction has ceased to be productive in the history of English. The reason why the DOC should stay productive with a sub-set of these uses will be briefly addressed below. Most probably, the semantic closeness (and overlap in verbs involved) between this type of communication verbs and the class of 'transfer of communicated message' exemplified by *John asked Mary a question* or *John told Mary a story* played a role in this development. In conclusion, this second group of miscellaneous verb classes is characterised by alliances between the DOC and the POC on a relatively low level in the network, i.e. in contrast to the group of transfer verbs above, where I have argued that a more abstract generalisation over the two patterns has formed in the history of English, such a more schematic link seems to be lacking in the case of reverse communication verbs.

Finally, a last group that is of interest in the present discussion is verbs of ballistic instantaneous motion like PDE *throw* or *cast*. Although no DOC examples of such verbs are given in Visser (1963), an exploratory look at the AS dictionary (Bosworth 2010) suggests that the DOC was available with this verb class in Old English (131).[237] Nevertheless, it can be assumed that prepositional uses were

[235]The COCA and BNC were searched for tokens of '*ask*+NP+*a favour/favor*', '*ask*+*a favour/favor*+*of/from*' and '*ask*+NP+*for a favour/favor*', as well as '*ask*+NP+possNP+*name*', '*ask*+ possNP+*name*+*of/from*+NP', and '*ask*+NP+*for*+possNP+*name*'; on Google I searched for strings of *ask*, a third person pronoun, and the NPs in question.

[236]Note that in the case of 'to cry a person mercy' in the sense of 'begging someone for pardon', the prepositional paraphrase still involves *to*, *on* or *upon* rather than *of* or *from* (cf. OED, s.v. *mercy*). However, this expression is highly idiomatic and archaic, and can therefore not be considered as representative.

[237]For a discussion of this verb class in various Germanic languages see Barðdal (2007: 25-27).

prevalent at this point. In PDE, both the DOC and various POCs (most prominently including *to*, but also *at* or *towards*) are used (*John threw the ball to/towards/at Mary*).

(131) *Weorpaþ* hit$_{TH}$ **hundum**$_{GOAL/REC}$
'throw it [the meat] to the dogs'
(Ex. 22, 31.; Bosworth-Toller, s.v. *weorpan*)

Unfortunately, clear DOC instances of ballistic motion verbs are not attested in the database used for this thesis. Although this could simply be due to an accidental gap in the data, it is therefore difficult to say whether this verb class followed a path similar to that of verbs of caused motion such as *bring* or *send* (which are semantically relatively close), or whether the increased use of the *to*-POC with these verbs is a more recent development, caused by the increasingly close association between the members of the dative alternation. The latter scenario would seem to be supported by the fact that ballistic motion verbs are not present in Colleman & De Clerck's (2011) database of 18th ct. DOCs either. Furthermore, they are still found in POCs involving prepositions other than *to* in PDE (cf. *John threw a ball at/towards Mary*; *John cast a glance at Mary*). A possible scenario is therefore that this verb class showed a strong preference for the POC (in several types) until recently, although sporadic DOC variants appeared from time to time. Since the *to*-POC was, however, the most frequent of these paraphrases, the verbs were more and more often coerced into the DOC due to the strong link between these two constructions. This development (i.e. the verb class entering into the dative alternation) might then in turn cause a decrease of the other POC-types. Whether this is indeed the case will have to be checked in more detail in the future (cf. also Mukherjee 2005).

To sum up, what has been dealt with in this section is a highly heterogeneous group of ditransitive verbs which are quite difficult to assess on the basis of the present data, and which seem to have followed relatively different pathways in the history of English. That is, the competition between DOC uses and prepositional periphrases was resolved in very distinct ways dependent on the semantics of the verbs involved. A number of issues that have been mentioned, such as the acceptance in the DOC of a semantically idiosyncratic group of verbs denoting reverse communicated transfer, will come up again in Section (6.2.1.3) below, where the matter will be discussed in respect to the semantic development of the schematic double object construction. Before moving on to this question, however, the next section will see a brief outline of the development of POCs in the context of a system-wide increase in prepositional, analytic competitors to more synthetic constructions.

6.2.1.2.3. The ditransitive alternation and POCs in the context of a system-wide increase in PP-constructions

The development of POCs from Old to Middle English and beyond necessarily hinges on changes in the rest of the constructional network. As already alluded to in previous chapters, prepositional constructions in general saw a substantial increase in the course of Middle English, increasingly taking

over functions that were before encoded by case constructions both in regard to verbal complementation as well as concerning noun or adjective modification. However, this process is supposed to have started long before Middle English, since a number of synthetic patterns already faced considerable competition with PP-patterns in Old English. For instance, prepositional phrases were frequently employed instead of case-marked time, place or manner adjuncts at this point already. Furthermore, as pointed out above, *of*-phrases more and more often came to 'replace' genitive NPs in all kinds of constructions in Old English, including genitive objects of transitive verbs and genitive noun modifiers as in partitives. Although most conspicuously seen with genitives, similar processes took place with other cases/ prepositions as well, cf. e.g. the OE dative competing against a preposition in linking two NPs in a relation of accompaniment ('the boy *with* the dog'). While in some cases, the PP-constructions won out against the resident, case-marked or (from late Old English onwards) zero-marked constructions, in other instances both the analytic and the more synthetic variants were retained, but diverged according to discourse-pragmatic or semantic function. Focussing on PPs in the verbal domain, I will in the following sections first discuss the development of PPs in the history of English as a case of increasing grammatical constructionalisation. Second, the various ways in which the competition between case-constructions and PP-constructions was resolved in English will be briefly commented on, relating the issue also to the discussion on competition in the case of DOCs and POCs.

6.2.1.2.3.1. A cline from adjunct to obligatory adjunct through increasing grammaticalisation of PPs

In Present Day English, PPs are traditionally divided binarily into complements versus adjuncts. Among other things, the latter assumedly have greater mobility, while the former are greatly restricted regarding their position in the clause (cf. e.g. Huddleston & Pullum 2002: 224-228). However, as discussed most recently by Th. Hoffmann (2005, 2007, 2011), a strict complement-adjunct dichotomy of PDE prepositional phrases is not warranted, since it does not capture the wide range of different patterns PPs are used in today. Hoffmann shows that instead, and more appropriately so, PPs should be considered as constituting a network of a number of constructions with varying degrees of schematicity. These constructions differ with regard to factors such as optionality, semantic import/degree of semantic bleaching of the preposition, degree of syntactic freedom, and their performance in various syntactic operations such as preposition stranding (cf. Hoffmann 2011: Ch.6; also Quirk et al. 1985: 1166; Biber et al. 1999: 403). The continuum from complement to adjunct as suggested by Hoffmann is shown in (132), and the networks are illustrated in Figure 58 and Figure 59 below. As can be seen, the postulated sub-constructions range from prototypical adjuncts (sentence

adjuncts with temporal or spatial meaning) to tight verb-preposition combinations (subcategorised prepositions).

(132) **optional PPs** (sentence adjuncts > mixed > complements)

obligatory PPs ((obligatory complement) > subcategorised PP-type > subcategorised P)

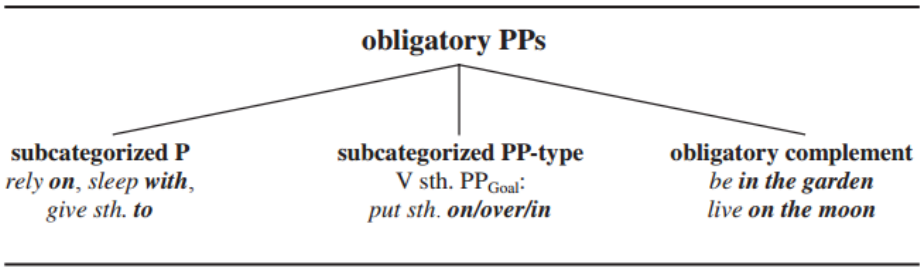

Figure 58 Different types of V-PP obligatory relationships (Hoffmann 2005: 265)

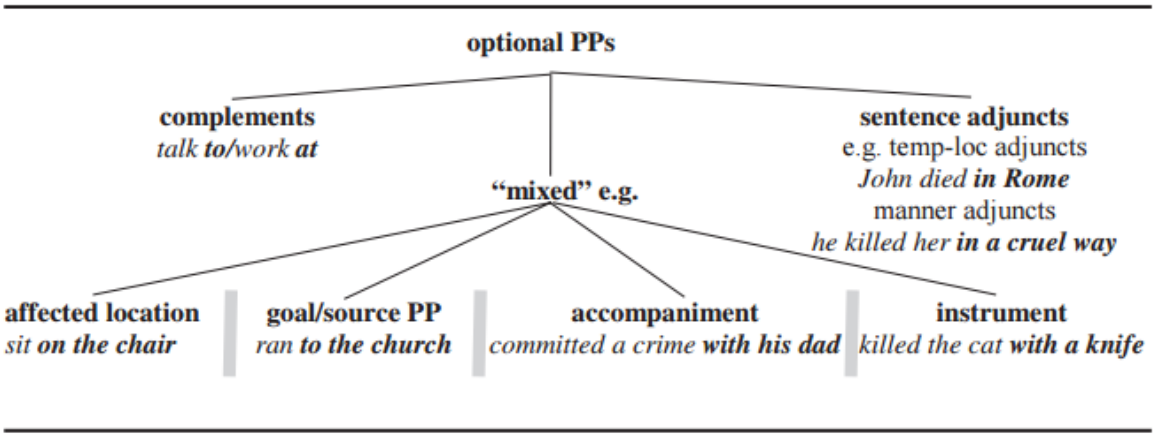

Figure 59 Different types of V-PP optional relationships (Hoffmann 2005: 266)

Although this is not explicitly dealt with in Th. Hoffmann (2005, 2011), it could be argued that these different constructions in PDE are manifestations of different degrees of grammaticalisation, with a cline from sentence adjuncts (least/ non-grammaticalised) to subcategorised prepositions (most grammaticalised). Following up on this assumption, the development of PP-constructions in the history of English is then proposed here to have proceeded along the following pathway:[238]

In pre-Old English times, prepositions emerged out of adverbs used in apposition to case-marked NPs in order to reinforce the meaning of the case morpheme (cf. Bruckmann 1911: 762; Hirt 1927: 15; Meillet 1934: 193; Lehmann 1974: 197; Friedrich 1975: 38; Hawkins 1983; Hock 1986; Lundskær-Nielsen 1993: Ch.1; Beekes 1995: 218-222; Ringe 2006: 64-65; Harbert 2007: 110-111). While these elements would have been optional at first, variant constructions including them might have been

[238]The formalisation of the various constructions as well as the classification of types is largely taken from Th. Hoffmann (2005, 2007, 2011). Although the scenario as presented here seems possible from a PDE standpoint, a more convincing proposal would of course have to be based on empirical data from the relevant language stages.

more successful compared to non-reinforced case constructions due to their greater explicitness. This could then have led to a gradual obligatorification of the adverbial constituent, which developed an ever closer association to the NP it occurred with through a process of habituation and chunking (cf. Bybee 2010). Most probably, the precursors to prepositions occurred in post-position to the NP they came to govern instead of preceding them. With an increasingly close link developing between the constituents, this order might have been subject to change, though, resulting in the canonical preposition+NP order seen today. This change is again assumed to have proceeded incrementally; in fact, post-positional prepositions are still comparatively frequent in Old English (cf. Alcorn 2011). The greater success of pre-positional prepositions can be attributed to their being better able to fulfil an 'introductory' function, i.e. their marking the relations between the sentence constituents earlier and more clearly. As to the function of these early PPs, they were initially restricted to expressing sentence adjuncts of time, location or manner, as also present in Old English and as illustrated in example (133).

(133) and ic **on ðam endenextan dæ3e of eorðan** *arise*
'and I shall arise on the last day of earth'
(Cath.Homilies Aelfric; Glossary OE Aerobics, s.v. *dæg*)

In this, the PPs were optional, and the constructions only very broadly subcategorised for type of preposition. This first phase of development can then be formalised as follows:

(134) 'appositive adverb' $[\ ]_{VP}\ [\ ]_{NP}\ [\ ]_{AdvP}$ → 'sentence adjunct': $[\ ]_{VP}\ [\ [\ ]_{P}\ [\ ]_{NP}\ ]_{PP\_TEMP/LOC/MANNER}$

In a second stage, slightly before or within Old English, PPs are extended to cover additional adverbial functions such as 'accompaniment' (*John cooked dinner with his dad*) or 'instrument' (*John killed the cat with a knife*). While the PP in these cases is still outside the VP, it nevertheless adds a participant role to the event, and thus differs from the more basic sentence adjuncts expressing spatial or temporal meaning (*John killed the cat in Rome/ on Monday*); cf. (135).[239]

(135) 'sentence adjunct': $[\ ]_{VP}\ [\ [\ ]_{P}\ [\ ]_{NP}\ ]_{PP\_TEMP/LOC/MANNER}$
→ 'extended adjunct': $[\ ]_{VP}\ [\ [\ ]_{P}\ [\ ]\ ]_{PP\_ACCOMP/INSTR/..}$

Still within the period of Old English, the relations between the elements in such constructions become tighter and tighter, with the PP moving inside the VP construction (136). Examples of such constructions given in Th. Hoffmann (2007: 99) include *John slept in a bed* ('affected location') or *John ran to the church* ('goal/sourcePP').

(136) 'adjunct': $[\ ]_{VP}\ [\ [\ ]_{P}\ [\ ]_{NP}\ ]_{PP}$

[239]Cf. Th. Hoffmann (2005, 2007, 2011) for a discussion of the various syntactic tests that can be applied to determine these distinctions. Both 'extended adjuncts' and 'adjunct ~ complements' are referred to as 'predicative adjuncts' in Quirk et al. (1985: 511-512); cf. also Ernst (2002: 131).

→ 'adjunct ~ complement': [[ ]$_{V\_ACTION/MOVEMENT/...}$ [[ ]$_{P}$ [ ]]$_{PP\_LOC/GOAL/SOURCE...}$]$_{VP}$

Concomitantly to or influenced by this development, a similar process is supposed to take place with PPs linking two NPs (as well as in adjective constructions). I assume that such combinations also moved from an appositional relationship to an increasingly close association, meaning that the PP was integrated into the NP (cf. e.g. *the student with the dog* > *the student with red hair* > *the student of physics*); cf. Harbert (2007: 110-111). Although a more careful analysis of such changes is outside the scope of the present study, it can be traced in the history of the *of*-genitive, which came to acquire progressively more functions both in the verbal and the nominal domain from late Old English onwards (cf. Rosenbach 2002; Allen 2003, 2005, 2006, 2009).

In some cases then, we see strong links forming between specific verb and preposition types. For example, *talk* is used exclusively with *to* in PDE; other fixed combinations include *work at sth.* or *keep sth. in a place* (cf. the representations in [(*137*a-c] below). Importantly, however, as indicated by the brackets around the PP constituents, these complement-types are optional, meaning they have not yet undergone obligatorification.[240]

(137) a. [[*talk*]$_{V}$ ([[*to*]$_{P}$ [ ]]$_{PP}$)]$_{VP}$

b. [[*work*]$_{V}$ ([[*at*]$_{P}$ [ ]]$_{PP}$)]$_{VP}$

c. [[*keep*]$_{V}$ [ ]$_{NP}$ ([[*in*]$_{P}$ [ ]]$_{PP}$)]$_{VP}$

This process constitutes the final big step in the development of PP-verb constructions in English, and indicates that the elements in the clause have come to be perceived as a chunk rather than separate constituents to an even larger extent. As in the case of optional complements, we can here observe various degrees of restriction in preposition type. Some verb classes such as that of caused motion subcategorise for a particular type of preposition (goal-prepositions like *in*, *on*, or *onto*), whereas other groups of verbs have come to be confined to one single specific preposition (138a). The latter is the case is with ditransitive verbs as discussed above, which are used with a *to*-POC only in PDE (138b). On a lower level, verb-specific preferences can develop into fixed associations, as e.g. with *rely*+*on* (138c).

(138) a. [[ ]$_{V\text{-}CAUSED\ MOTION}$ [ ]$_{NP}$ [ ]$_{PP\_GOAL}$]$_{VP}$

b. [[ ]$_{V\text{-}DITRANS}$ [ ]$_{NP}$ [[*to*]$_{P}$ [ ]$_{NP}$]$_{PP}$]$_{VP}$

c. [[*rely*]$_{V}$ [[*on*]$_{P}$ [ ]$_{NP}$]$_{PP}$]$_{VP}$

Tentative support for the assumption of such a cline of increasingly tighter relations between verbs and PPs comes e.g. from the fact that pied piping structures, which more adjunct-like constructions

[240]Cf. also verbs of cognition such as *believe* (*in, on*) or *think* (*about, of*).

tend to favour (*139*a), were present and even obligatory in some contexts already in Old English.[241] In contrast, the phenomenon of preposition stranding (*139*b), which is strongly preferred by constructions from the other end of the cline, emerged and became frequent only during the Middle English period, i.e. once the more adjunct-like OE PPs had grammaticalised into constructions with a tighter association between preposition and verb (cf. Johansson 2002: 152; Th. Hoffmann 2005, 2011; Yáñez-Bouza 2015).

(139) a. the ways **in which** the satire *is achieved* <ICE-GB:S1B-014 #5:1:A> (Hoffmann 2011: 164)
b. the teacher **that** Jane *relied* **on** (Hoffmann 2011: 188)

In light of this discussion, the development of POCs in the history of English presents a highly interesting case, since the different POC-types specified above arguably represent different stages in the cline. All of the prepositions involved are supposed to have started out as marking sentence adjuncts. The POCs in OE and early ME then constitute instances of the type 'adjunct ~ complement' – integrated into the VP, and adding an (optional) participant role to the event, they subcategorise for PP-type (e.g. goal-prepositions in the case of transfer verbs, or source-prepositions for verbs of dispossession). The subsequent behaviour of the POCs differs quite substantially, however, with some classes having moved further moved along the continuum over the course of the periods than others. Verbs of ballistic motion, for instance, involve an optional adjunct ~ complement, and specify a PP-goal-type in PDE still, although they are potentially moving towards a more restricted usage. In contrast, verbs of dispossession, which were used with source-type PPs in Middle English, have become limited to *from*-PPs; they thus constitute a type of optional-complement construction in Hoffmann's (2007) classification. A slightly different issue is posed by the group of verbs of emotion/attitude and reversed transfer. In this case, lower-level associations between specific verb+NP-type combinations and particular prepositions have formed rather than a verb-class-specific subcategorization frame for a PP-type (cf. *have love for so*. vs. *feel envy towards so*. vs. *have pity on so*.). While with these groups, the complements are optional, the two remaining classes have moved towards (near-)obligatory complement constructions. That is, with verbs of reversed communicated transfer the PP-complement can typically not be dropped (?*John asked a favour*). The same is true for PDE ditransitive (transfer) verbs, with some exception.[242] In contrast to the latter, which specify a particular preposition (*to*-POC), however, the former only subcategorise for a PP-type (source PPs, including *of/from*).

[241]Manner adjuncts as in the example given in fact do not allow preposition stranding at all (Th. Hoffmann 2011: 262).
[242]Cf. e.g. Mukherjee (2005).

In sum, what I have proposed in this section is that approaching the periphrastic competitors to Old and Middle English DOCs in the context of more general developments that appear to have been under way throughout the history of English can yield quite interesting results. More specifically, the POCs and related constructions can be shown to have entered into increasingly tighter relationships with the verbs (and other constituents) they appeared with, a development which is thought to be still ongoing in PDE. From a replicator-based perspective, such a process is arguably highly beneficial for the constructions involved, since replicating as one chunk instead of forming replicator-collaborations may lead to greater ease in being expressed and higher activation rates. As to the PPs in question, I suggest that there is a great profit in managing to establish oneself as an obligatory part of a larger construction. In general, acquiring new functions of any kind is clearly of advantage, since more functions means a greater likelihood for being replicated. From the perspective of the functions involved (such as 'ditransitive event'), the benefits of becoming associated with more forms (e.g. case constructions as well as POCs) can be questioned: on the one hand, this creates opportunities to be used in new and more contexts, on the other hand, too many forms could lead to instability in the system. The following section will briefly comment on this issue, and again address the various pathways of resolution of competition between synthetic and analytic structures that can be seen in the history of PP-patterns in English.

6.2.1.2.3.2. Competition resolution in the case of PP-paraphrases

As repeatedly mentioned above, there are various ways in which competition between constructional alternatives can be resolved. Most typically, these include the loss of one of the variants or niche construction, with both patterns diverging to some extent in their function. In the case of competition between the more analytic PP-constructions and more synthetic means of expression, i.e. case constructions in Old English, and bare NP-constructions in later times, three basic developments can be discerned.

Loss of one variant is found in a large majority of cases. In all instances I am aware of, it is the synthetic construction that is ousted in favour of the prepositional pattern. Examples of this development are manifold: first of all, PP-constructions appear to have completely replaced NP-variants of adverbials of time, place and manner (cf. (*140*a-b, both of which are translated with a PP-adverbial). There is some exception to this rule in that in PDE, some NPs can still be used adverbially (e.g. *This morning, John woke up early*). However, such uses are clearly special and do not contradict the assumption of a general trend towards PP-adverbials in the history of English.

(140) a. **Þam þryddan dæge**$_{NP}$ he *arist*
'on the third day he [Christ] arose [from the dead]'
(West Saxon Gospels: Matt. (Corpus Cambr.) xx. 19; OED, s.v. *day*)

b. and ic **on ðam endenextan dæ3e of eorðan**$_{PP}$ *arise*
'and I shall arise on the last day of earth'
(Cath.Homilies Aelfric; Glossary OE Aerobics, s.v. *dæg*)

A similar picture presents itself in the case of accompaniment- as well as instrument-adjuncts as discussed above. These functions can be expressed by PPs in Old English already, and presumably become restricted to these rapidly from late Old English/ early Middle English onwards (141a-b). In PDE, prepositional patterns have remained as the only option (cf. *John killed his cat *[with] a knife*).

(141) a. ond he **lytle werede**$_{NP}$ unieþelice æfter wudum *for*
'and he travelled with a small troop with difficulty through woods'
(ChronA 74.28 (878); taken from Sato 2009: 32)

b. Hi *habbað* **mid him** awyriedne engel, mancynnes feond
'They have with them a corrupt angel, the enemy of mankind'
(JECHom II, 38 283.113; taken from Traugott 1992: 171)

A further case of a rise of analytic patterns at the expense of synthetic constructions is the fate of a set of verbs which were construed with oblique case-marked objects in Old English, but soon entered competition with a variety of PPs. These verbs include e.g. *wonder* and *rejoice*, which are both restricted to prepositional complements in PDE (*wonder about, rejoice in*); cf. (142a-b). Usually, we furthermore see a reduction in the range of prepositions associated with the verbs over time. For example, *rejoice* (or rather, its Germanic equivalent) could be used with a variety of different prepositions in Middle English, but is almost invariably found with *in* today.

(142) a. secg **weorce**$_{NP}$ *gefeh*
'the man rejoiced [in] the deed'
(Beowulf xxiii, 1659; Glossary Old English Aerobics, s.v. *gefēon*)

b. Ðonne motan we **in ðære engellican blisse**$_{PP}$ *gefeon*
'then may we in angelic bliss rejoice'
(Blickl. Homl. 83, 3; Bosworth-Toller, s.v. *ge-feón*)

Examples from ditransitives that behave in this way include verbs of dispossession, as well as benefactive/malefactive verbs, mental verbs and verbs of reversed transfer. With all of these, the DOC has disappeared entirely from modern usage, and only POC uses remain.

The second pathway that can be observed in this respect is the establishment of lower-level, relatively unsystematic associations between the verb-class-specific (and verb-specific) synthetic and analytic constructions. For instance, verbs of cognition such as *think* and *believe* are found with both prepositional and non-prepositional objects in earlier stages of English as well as in PDE (143a-c; (*144*a-b). However, although these options might have been interchangeable at some point, they have come to diversify functionally. While PDE *believe in* for example has a meaning of 'have confidence, faith in', the transitive, synthetic construction expresses a sense of 'to give intellectual assent to, accept the truth or accuracy of (a statement, doctrine, etc.) according to the OED (s.v. *believe*). Furthermore,

putting them in contrast to the first group just presented, the prepositional constructions in this group have not been confined to specific prepositions, but still show some variation. While *believe* is usually used with *on* in addition to *in*, *think* can take both *of* and *about*, among others.

(143) a. He þat *bi-lefeþ* **hit**$_{NP}$ nauȝt
'He that does not believe it'
(William of Shoreham Poems, 7; OED, s.v. *believe*)

b. Ge *gelefeð* **on God**$_{PP}$, *belefeð* eac **on me**$_{PP}$
'You believe in god, believe in me as well'
(*John* (Vesp. D.xiv) xiv. 1; OED, s.v. *believe*)

c. *To bileuen* **in god**$_{PP}$
'To believe in god'
(MS Trin. Cambr., 2nd Ser. 19; OED, s.v. *believe*)

(144) a. fals louers […] in herte cunne *thenke* **a thyng**$_{NP}$ And seyn another in her spekyng
'false lovers can think one thing in the heart and say another in their speaking'
(Chaucer Romaunt Rose, l. 2541; OED, s.v. *think*)

b. *To thinc* **apon his care**$_{PP}$
'to think about his care'
(Cursor Mundi, l. 15612; OED, s.v. *think*)

As to ditransitives, a corresponding development is seen in the case of verbs of reversed communicated transfer. As shown above, these verbs do not participate in the dative alternation despite still occurring in the DOC, but are associated with various source-type prepositions instead.

Finally, a third possibility in development is the emergence of an abstract, relatively schematic generalisation over a synthetic construction on the one hand, and an analytic pattern on the other hand. These variants have entered into a highly systematic constructional symbiosis in which both fulfil different discourse-pragmatic functions. An obvious case in point in this regard is the dative alternation, as well as to a lesser extent the benefactive alternation. Furthermore, a similar process of an emerging paradigmatic relationship can be seen in the history of the 'genitive alternation' in English (*my father's dog* vs. *the dog of my father*); cf. e.g. Rosenbach (2002).

In conclusion, this chapter has aimed to show that the changes taking place with ditransitives have to be viewed in the context of corresponding changes in the larger network and surrounding constructions. As proposed before in the case of the loss of morphological case marking, it is plausible to assume that the relationship between DOC and POCs was greatly influenced for example by the increasing tendency to replace dative NPs in transitive constructions with *to* or genitive NPs with *of*. Where these changes ultimately originated or whether similar variants were produced simultaneously in the network and positively impacted the spread of other, associated constructions is difficult to

determine, but is also not entirely relevant.[243] What is important is that the success of various types of POCs in comparison to the DOC can be addressed in relation to comparable patterns.

6.2.1.2.4. Summary

The main point of this chapter has been to show that the emergence of prepositional paraphrases to existing case- or later zero-marked constructions is by no means a straightforward case of replacement, but instead varies quite markedly in a number of respects. In the case of ditransitives, three main types of development can be observed, each associated with particular semantic verb classes. First, in the case of transfer- and transfer-related verbs, we see a symbiotic, paradigmatic relationship being established between the DOC and a prepositional competitor involving *to*. Together, these patterns form the well-known dative alternation in PDE. I have proposed here that these constructions are strongly linked in the constructional network, and have come to form allostructions. The association between them may even have resulted in the emergence of a higher-level 'ditransitive' abstraction/ constructeme over the formally distinct patterns. Rather than competing against each other, the DOC and the *to*-POC are taken to cooperate with each other in that both patterns are connected to particular, complementary discourse-pragmatic functions. In contrast, with verbs of dispossession as well as verbs of pure benefaction and malefaction the prepositional uses have come to succeed at the expense of the DOC, meaning that the DOC is not available to be used with these verbs anymore in PDE. A last group of verbs, which includes complex predicate constructions with emotion verbs such as 'feel envy towards' is different in showing a clear preference for POCs in Old English already. Although occasional instances of the synthetic construction can be found in Middle English, the prepositional patterns soon take over again, and no such uses are found in PDE. In general, the development of the prepositional competitors for ditransitive verbs is closely mirrored in and likely heavily influenced by changes going on in the system as a whole at the turn of Old to Middle English. As will be discussed below, the loss of case marking as well as the fixation of word order certainly played a role in this development.

6.2.1.3. Changes in the semantics of the DOC

The story of PP-constructions in English and in particular that of POCs can confidently be described as one of semantic widening or functional extension, in that they appear to have acquired a greater number of more and more procedural meanings. In sum, this amounts to a generalisation in meaning, and the constructions seem to qualify as good examples of grammatical constructionalisation (at least

[243]We can here assume that once a case form was replaced by a prepositional phrase in one function (or one particular construct, micro-construction, etc.) it could be analogically extended to other, similar types, and from there to more and more contexts. That is, once the door was opened there was no way to stop the development – for example, using *to* for DAT in ditransitive communication events (or any other event) could have opened the gate for a 'rule' of 'use *to* for DAT everywhere' to be inferred.

in regard to semantic development). In contrast, the DOC has arguably undergone the exact opposite change – rather than expanding in associated sub-senses, it can be shown to have lost several types of verb classes. More precisely, the DOC has moved towards more coherent and more transparent semantics, being strongly associated with a meaning of 'transfer', and transfer-related senses. That is, the development of the DOC constitutes one of semantic specialization or narrowing, and exhibits features often linked to lexical constructionalisation (even if it is probably not the most prototypical case in point). In the following, I will first comment on this general development of constructional specialisation in the history of the DOC, addressing also the potential benefits this process might have had for the construction(s) involved. Afterwards, some aspects of the PDE DOC and its semantics that are somewhat problematic for this account will be discussed.

6.2.1.3.1. Moving towards 'transfer'

Most basically, what the data obtained in the present study show is that we indeed find a specialisation of the semantics of the DOC in the course of Middle English: transfer- and transfer-related meanings such as communication (telling) or intended transfer (offering, promising) significantly grow in proportional frequency, i.e. take up an increasingly large part of the semantic space of the DOC. Furthermore, within this larger group of giving-senses, concrete, spatial giving seems to be foregrounded at the expense of metaphorical, abstract or indirect giving (as in e.g. *give so. a kiss*, or *pay so. a visit*). In other words, the DOC moves towards a core meaning of denoting basic transfer situations, in whose most prototypical instantiations, a volitional agent successfully transfers a concrete entity to a willing animate recipient (Goldberg 1995: 141). In contrast, other senses, which do not involve a prototypical transfer-event visibly decrease over time in Middle English, and clearly constitute very marginal uses only at the end of the period. The latter group most prominently includes verbs of dispossession and verbs of pure benefaction/malefaction (with the exception of light verb constructions of the type 'do so. good/harm').[244] The results of this thesis thus essentially confirm the findings of Rohdenburg (1995, 2007), Barðdal (2007), Barðdal, Kristoffersen & Sveen (2011) and Colleman & De Clerck (2011), and thereby lend further support to the hypothesis that the double object construction saw a considerable narrowing in its constructional semantics in the course of the history of English. The present study moreover indicates that this change is neither one that pertained to pre-Old English stages, and was essentially completed before the time frame investigated here. Nor does it represent a rather recent development which started in late Modern English only (as could theoretically be assumed on the basis of the major investigations that were carried out on this issue so far; cf. Rohdenburg 1995; Mukherjee & Hoffmann 2006; Barðdal 2007; Hoffmann & Mukherjee

[244]Cf. the establishment of an 'intended reception' constraint on benefactive verbs discussed above (Colleman & De Clerck 2011).

2007; Barðdal, Kristoffersen & Sveen 2011; Colleman & De Clerck 2011). Instead, putting my findings in relation to those of studies on earlier or later stages of the language suggests that the change towards a basic transfer-meaning was by all means gradual and continuing. This suggests that the process has possibly been ongoing since Proto-Germanic (or is at least paralleled in other Germanic languages), and certainly continues to affect the construction to this day (cf. also Goldberg 1995: 132).

That this should be the case is supported by the fact that the sub-schema of 'transfer' appears to have been highly entrenched (and more so than others) at the beginning of the Middle English period, accounting for a large percentage of DOC uses (both in respect to types and tokens). Non-transfer constructions, on the other hand, were less type and token frequent, and accordingly less productive in early Middle English already, and were thus prone to disappearing from the construction. At the same time, however, verbs of pure benefaction (but not malefaction) are still attested in the construction in Colleman & De Clerck's dataset of 18th ct. English. This implies that although this sense was highly infrequent at the turn from Middle English to Early Modern English already, it still resisted its complete ousting for quite some time.[245] Furthermore, less prototypical uses such as the attitudinal/mental verbs *forgive* or *envy* have not been lost from the DOC until this day, despite indications that change might be in progress at this moment (cf. Goldberg 2006). We can therefore safely conclude that even thought the DOC has (and is) clearly developing towards being associated with a basic meaning of transfer to the extent of an almost exclusive relationship, there was no saltational change in the history of English, which eliminated all other uses in a go (which is incidentally very much in line with the predictions usage-based theories of language would make). Nevertheless, it has to be acknowledged that Middle English certainly played a key role in this development, since within the relatively short time span that this period represents (about 400 years), a comparatively great deal of change took place.

Following Croft (2003), among others, in presuming polysemous (argument structure) constructions such as the PDE DOC to be organised in a lexicality-schematicity hierarchy, I then argue that the DOC in Old and early Middle English can be conceptualised as a highly schematic construction. This construction has a comparatively underspecified meaning of 'X causes Y to be affected by acting on Z', and is linked to a number of lower-level verb-class specific constructions. The distinct senses that can be identified for the DOC at this stage constitute sub-constructions tied to (and indeed emerging from) specific sets of verbs instantiating them. The changes visible in the course of Middle English and

[245]The fact that malefactive uses apparently disappeared earlier than benefactive verbs can be taken as a further support for the account presented here, since DOCs of pure benefaction are arguably still closer to the core meaning of the PDE DOC of successful and beneficial transfer to a willing recipient – by contrast, malefactive events, in which a negative, non-beneficial effect is transferred onto the most likely unwilling person denoted by the REC-argument, are further removed from the prototype (cf. also Mukherjee 2005 on core and periphery in PDE ditransitives).

beyond can be visualised as in Figure **60**: on the left, a simplified and cut-down version of the network of the OE/ early ME DOC is depicted. The abstract DOC, which specifies little more than the presence of a three-place predicate and two object NPs as well as a very general meaning of 'indirect affectedness', is related vertically (rotated by 90 degrees in the figure for better use of space) to the more specific verb-class constructions put forward in this study. These lower-level constructions include e.g. the senses of 'actual transfer' (instantiated by verbs of physical transfer such as ME *yeven* 'give') or communication (ME *cwethen* 'say', *tellen* 'tell') and caused motion (ME *bringen* 'bring', *senden* 'send'). While these senses are stable associated with the DOC, with the sub-construction of actual transfer being the most entrenched of all (bold lines), several other constructions are less entrenched and show weaker links to the DOC.[246] In the figure, this is illustrated by the examples of verbs of dispossession and 'benefaction/malefaction'. Their less prototypical status is indicated by broken lining around the boxes as well as in their relations to the DOC schema. The differences in strength of connection and degree of entrenchment can be viewed as the outcome of considerable competition at this point already. That is, the various sub-constructions are taken to compete against each other for more exclusive association with the DOC's formal features (rather than competing for expression as such).

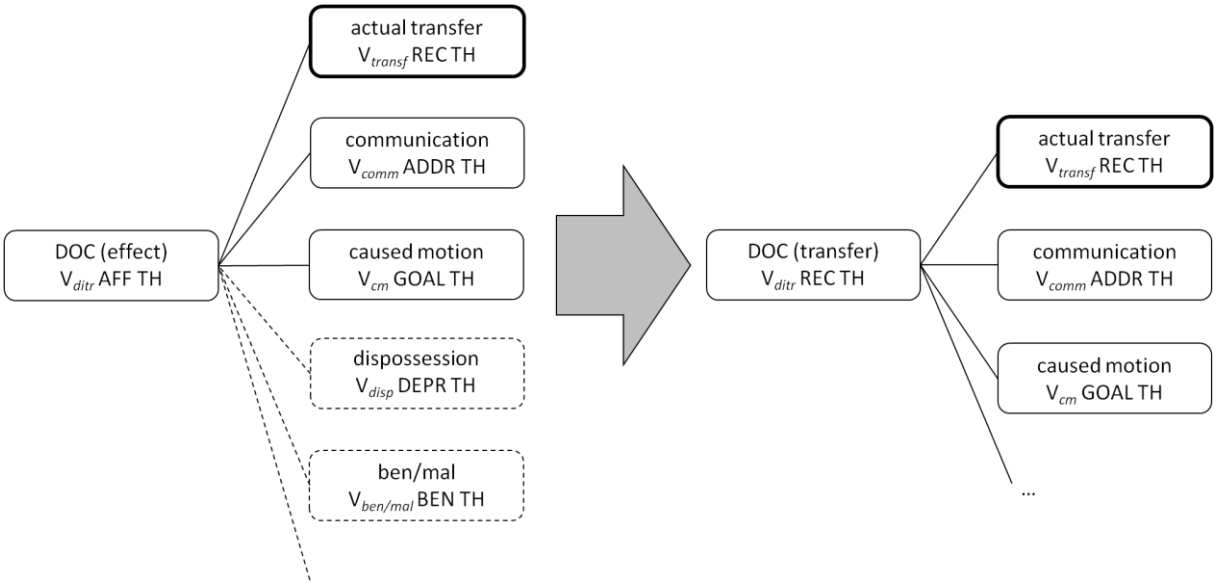

Figure 60 Semantic narrowing (loss of sub-constructions) of the DOC in Middle English and beyond

Middle English then sees the beginning resolution of this competition, with those constructions that are more successful (for reasons that will be dealt with below) forcing out the weaker variants, and thus reducing the range of senses linked to the schematic DOC. More specifically, we observe a process in which the less productive and more peripheral uses are increasingly marginalised, and eventually

[246]Incidentally, the group of transfer-related senses is also most reliably associated with the most frequent [DAT-ACC] case frame, which further increases the entrenchment of these constructions.

lost altogether. This means that the sub-schemas are activated less and less frequently, until they and their links to the DOC disappear (demonstrated on the right of the figure).[247] Importantly, this loss of constructional types of the DOC is not random, but highly motivated in that only certain, related senses are retained: it is assumed that the most successful construction (in our case that of actual transfer) has a positive influence on those senses that show a high degree of similarity to it. Forming a cooperative relationship instead of competing, this association is beneficial for both sides. On the one hand, the less frequent, slightly less successful senses profit from being dragged with the older and more popular brother, so to say. This can be explained by the mechanism of spreading activation. Each time the fitter variant is activated, different yet closely related concepts are taken to be triggered as well, making them more stable than other, further removed variants (cf. Traugott & Trousdale 2013). On the other hand, the transfer-construction evidently gains from a clearer one-to-one relationship between form (DOC syntax) and meaning. However, collaborating with near relatives is of advantage for the more successful construction as well, due to more or less the same reasons since they are stabilising and strengthening it (competition equals less activation, cooperation equals more activation through association).

The opposite is the case with a number of other DOC senses such as verbs of dispossession or substitutive benefaction: such events, where the agent causes someone to lose an entity rather than to receive one, or only involve transfer of possession on a rather indirect level, are arguably much more peripheral to 'giving' semantics, and therefore have a high probability of being ousted from the construction. As we have seen, these verb classes then typically resort to other means of expression such as the various POCs. Although this development might be considered a loss situation, from the perspective of the verb classes involved it can in fact be profitable to be released out of competition against fitter variants and to become associated with a more expressive construction instead.

As to the more abstract construction of the DOC, the loss of peripheral sub-senses or semantic narrowing corresponds to a loss of schematicity to a certain degree. Although the construction's meaning becomes more specialised and less general, it however remains to be situated at a relatively high level (even if a lower one than before) in the network, i.e. can be taken to retain a good deal of schematicity. At the same time, this development results in a reduction in constructional polysemy, making the schema semantically more coherent as well as transparent, as it comes to be associated with a basic, unified meaning of transfer – including all kinds of metaphorical indirect transfer – instead of denoting the considerably vaguer notion of indirect affectedness (cf. also Goldberg 1995: 132).[248]

[247]That occasional examples of such uses are still found at later points for example in particular varieties is not problematic for this account, since it can be assumed that the loss of sub-constructions is only partial in some speaker minds, and (very) faint ties continue to exist.

[248] This holds true for PDE even if we acknowledge that there is clearly still some variability in the semantic range of the DOC in PDE, as will be discussed in the following section.

Greater semantic coherence is, as was discussed above, then also taken to be conducive to the higher productivity of a construction, inversely related with type frequency (cf. e.g. Bybee 1995; Barðdal 2008; and Barðdal & Gildea 2015, Perek 2015; among others). Although the type frequency of verb classes associated with the DOC in English has therefore decreased over time, this process has on the other side led to an increase in semantic transparency. This fact can explain the construction's productivity regarding new members of associated semantic classes (such as the above-mentioned *e-mail*, *text*, *skype* and *whatsapp* or *feed* and *issue*). Furthermore, it provides an explanation for the survival of the construction as such, which has managed to successfully compete against its prepositional paraphrase, i.e. the *to*-POC, over time (cf. Colleman & De Clerck 2011: 203; also Rohdenburg 2009; De Clerck et al. 2011; De Clerck, Delorge & Simon-Vandenbergen 2011).[249] To conclude, the move towards a more bi-unique relationship between form and meaning of the DOC is highly beneficial for the construction. Moreover, specialising to a giving-sense is thought to be advantageous for the DOC as it enables or eases its association with the *to*-POC, and thereby allows it to profit from the resulting alternation-based productivity.

6.2.1.3.2. Idiosyncrasies and exceptions explained?

Unfortunately, the account presented above is challenged by a few idiosyncrasies, or rather, the situation (judged on the basis of PDE data) is not as straightforward as one would wish (as it probably never is). One of these problematic issues is posed by the verb *cost*, which is still regularly found in the DOC in Present-Day English (cf. e.g. Colleman & De Clerck 2008: 204-205, 2009: 34-38; also Goldberg 2002; Pinker 1989). As Colleman & De Clerck (2009: 36) point out, *cost* in fact exhibits an almost absolute preference for the DOC, meaning the verb is more or less never paraphrased by a *to*-POC. This restriction is only to be expected considering the verb semantics' incompatibility with the semantics expressed by *to*. Nevertheless, it is difficult to explain why the verb should appear in the DOC at all, since it can be classified as a verb of dispossession, and should therefore have dropped out of use from this construction in Middle English, or not long after. Not much can be gained by looking at the Middle English data, though, as *cost* occurs very rarely (N= 1), and no POC-paraphrases are attested in any sub-period. Interestingly, *cost* does not seem to have any prepositional competitors in PDE, either (at least none I am aware of), suggesting that the verb is special in its behaviour in any case. Following Colleman & De Clerck's argumentation, this peculiarity might be connected to *cost* being an atypical verb of dispossession in that "it is incompatible with an agentive subject, and [in that] there is no suggestion that the subject eventually possesses the direct object" (2008: 204, cf. also 2009: 34).

[249]The development of the DOC therefore seems to be characterised by a decrease in schematicity, an increase in productivity (or a steady rate of productivity) and no major changes regarding compositionality; whether the construction thus qualifies as a case of lexical constructionalisation in Traugott & Trousdale's (2013) analysis is questionable.

While it is thus plausible that the verb might have escaped the fate of other, more prototypically privative verbs such as *steal* or *rob* due to its marginal status within this group as well as its general infrequency, the issue would still need to be investigated in more detail.

Similarly, the continued use of 'verbs of blocked transfer/ refusal' such as PDE *deny* and *refuse* in the DOC is somewhat surprising, since according to the present account, they too should have been ousted from the construction due to their not corresponding to the basic transfer-semantics of the construction (cf. Green 1974; Krifka 2004; Colleman & De Clerck 2008, 2009). One (admittedly rather weak) explanation for this persistence is again the scarcity of these particular verbs in ME (*deny:* N=4; *refuse:* N=0). Note that the slightly more frequent verb of refusal *forbid* (N= 17), as well as the later addition *prevent*, have indeed fallen out of use in the DOC (or are at least only attested very marginally; cf. e.g. Goldberg 1995; Coppock 2009). As Goldberg states, the class is also special in that it seems to be entirely unproductive in PDE (1995: 130). This, as well as the verbs' slight reluctance to partake in the dative alternation, constitute further indications of its odd standing within the DOC's verb classes, and suggests that it is indeed perceived as not-quite belonging there. Incidentally, in Middle English verbs of refusal selected for various different prepositions (cf. above), which might hint at their being rather ambiguous concerning their semantics (in comparison to the more prototypical members of the DOC). Nevertheless, it could be argued that on a cline from most prototypically transfer-related to least prototypically transfer-related, verbs of refusal or 'future not having', which encode scenes of 'not-giving', are still closer to the core meaning than verbs of pure benefaction/malefaction, or verbs which express the antonymic relation of giving, i.e. dispossession events in which the animate participant is caused to lose an entity (Colleman & De Clerck 2008: 205).

A particularly conspicuous case of irregularity is that of mental/attitudinal verbs. While the corresponding (anyways marginal) light verb constructions of the type 'have so. love' have fallen out of use as predicted since their semantics do not nicely fit the basic meaning of the construction, the simple verbs *envy* and *forgive* have persisted in the DOC, despite the fact that their semantics are similarly difficult to account for in terms of transfer (even though not impossible, cf. Colleman & De Clerck 2008).[250] However, the unproductive nature of this subclass in PDE, as well as their recently increasing disappearance from the construction, which has been reported by e.g. Goldberg (1995: 131-132), lends additional support for the assumption of a semantic narrowing, however gradual it may be. The differences in acceptability in the DOC between the two verbs in PDE – with ditransitive uses of *envy* apparently being more prone to loss than *forgive* – possibly reflect a difference in position on

[250]Even though the meaning of the complex predicate emotion patterns could be explained as metaphorical extensions of giving semantics, the event of loving someone clearly does not necessarily involve neither a volitional agent nor a willing recipient, and the indirect 'transfer' of emotion is potentially unsuccessful. Therefore, these constructions were undoubtedly at the periphery of the DOC, and are expected to have been ousted from it.

the cline just mentioned, since the former can also be grouped together with *cost* and other verbs of dispossession, while the latter can be subsumed in the class of 'verbs of future not having' and should therefore be more readily accepted (cf. Pinker 1989: 111; Goldberg 1995: 131-132; Colleman & De Clerck 2008). Furthermore, *forgive* should still be more compatible with the DOC than *envy* in respect to willingness of the recipient of the emotion. While being on the receiving end of an act of forgiving can be considered beneficial for a participant, it is less clear how a recipient of an envious feeling would profit from this event.

The perseverance of 'verbs of reverse communicated transfer' such as *ask* in patterns like *John asked Mary the time/ a favour* presents a further problematic case, because they plainly do not involve transfer of an entity, but rather a request to receive information (or help). As dealt with above, the typical prepositional paraphrases for these patterns include *of* or *from* (*John asked a favour of Mary*), while *to* is restricted to *ask* as a verb of communicated message (*John asked Mary a question*). This suggests that the reverse transfer use of *ask* (and related verbs) is again closer to the use of dispossession verbs, making it necessary to explain their permanence in the PDE DOC. Possible ways to do so include the close connection of the verb class to the sub-construction of communication. More specifically, the verbs involved in such uses participate in another, closely linked sub-construction of the DOC. The tight association of verbs like *ask* with the DOC together with the large overlap (or similarity) in the events encoded by them is then likely to trigger a generalisation of the kind 'use *ask* in the DOC no matter what the precise semantics of the pattern are'. This assumption is to some extent backed by the fact that verbs of reverse transfer, which do not have the same strong ties to another, more prototypical DOC verb class, were marginalised from the construction very early on (cf. above).

Finally, a note on pure benefactives is in order: as was demonstrated above, a number of complex predicate patterns denoting malefaction or benefaction such as 'do/intend so. harm/good' have not followed the general trend of this verb class in having survived into PDE rather than being lost (145a-b).

(145) a. there are people out there who mean to *do* **runners**$_{\text{AFF}}$ harm$_{\textbf{TH}}$
(COCA, 2013; Pittsburgh Post-Gazette)

b. Nevertheless, a little competition from the fighting Irish may *do* **them**$_{\text{AFF}}$ good$_{\text{TH}}$
(COCA, 2013; American Spectator)

However, these uses are again entirely unproductive, and appear to constitute fixed, lexicalised expressions at a very low level in the network. This means the overall schema associated with these patterns, which would have been able to license more types, has disappeared, leaving the more or less fully filled micro-constructions behind. Incidentally, as seen in example (145b), the patterns furthermore do not fulfil the criterion of volitionality of the agent in a majority of cases (especially in the case of 'do so. good'), since it is typically inanimate action-NPs that encode the role of subject/agent in such sentences. This feature additionally points to their non-prototypical status, even

if the events expressed could on some level be explained as the metaphorical transfer of a positive or negative effect.

To sum up, this chapter has shown that we can indeed witness a semantic specialisation of the double object construction in the history of English. Through a reduction of sub-constructional types associated with distinct verb classes, the construction has come to encode a core meaning of 'transfer'. Resulting in the schema becoming more semantically coherent, this has furthered its productivity – a fact which is thought to be highly beneficial for the pattern. A number of remnants of older uses, as well as verb classes which would be predicted to have fallen out of use but are retained in the construction, have to be explained separately. Nevertheless, they do not call into doubt that a narrowing in the semantics of the DOC has taken place in the history of English, but rather indicate that this change might still be ongoing.

6.2.1.4. Fixation of constituent order in ditransitives

The following sections will review the issue of fixation of word order in ditransitives both in respect to the ordering of the objects involved, i.e. the REC- and TH-argument, as well as concerning the increasing rigidity on constituent order on the clause level, which led to a strict SVO order in ditransitive constructions. The most striking point to be observed in this regard is that the members of the dative alternation behave conspicuously different to other POCs and PP+NP combinations, indicating that their increasingly close association had some effect on their development. For example, all prepositional constructions show a distinct and progressively stronger preference for clause-peripheral position, typically resulting in their following subject, verb, and (NP-)object. However, in the case of the *to*-POC (as well as to a lesser extent other POCs), the option of coming before the NP-object is retained throughout the period. As to changes on the clause level, the DOC and *to*-POC differ from other POCs (as well as other PP-constructions) in that the latter maintain some flexibility in constituent ordering, while the former are strongly associated with canonical (S)VO at the end of the Middle English period.

In the sections below, I will first address the changes visible in the ordering of objects of ditransitives, before commenting on the establishment of a fixed SVO order in these patterns. Since especially concerning the latter point, ditransitives cannot easily be dealt with in isolation due to the fixation of SVO representing a cross-constructional, system-wide change, this analysis will again be followed by a discussion of the changes witnessed in ditransitives in the context of this more general move in the larger network.

6.2.1.4.1. Changes in ditransitive object ordering: towards a complementary distribution

Recapitulating the results on object ordering presented in Section (4.2.4), we have seen that the DOC had a preference for [REC-TH] order in early Middle English already. This tendency is even more pronounced if only instances where the objects are in direct sequence are taken into account. Although a slight preponderance of this order is also present in Old English (cf. De Cuypere 2015a, whose data show a distribution of about 60 per cent [REC-TH] vs. 40 percent [TH-REC]), there thus seems to have been a change towards the canonical order at the turn from Old to Middle English.[251] The slight overall dominance of [REC-TH] in Old English can be readily explained by the fact that recipients tend to be animate, given, pronominal and definite, and are therefore predicted to favour REC-first orders (cf. also the PDE relation between the strong REC-first DOC and the weak REC-late *to*-POCs). The increase in [REC-TH] orders in the course to Middle English, however, needs to be explained differently. A possible way to do so, I argue, is to draw on the progressively close association between DOCs and POCs in late Old English. Since the prepositional competitors strongly preferred PP-late – and therefore REC-late – order, the increase in DOC [REC-TH] orders might represent a first indication of competition resolution, with the DOC being driven to resort to this other, in any case more frequently used construction. This assumption to some extent challenges De Cuypere's (2015c) proposal that the prepositional constructions with their partiality towards REC-late order 'stepped in' to compensate for the loss of DOC patterns of this type.[252] Rather than assuming a drag-chain process in this case, I would argue for a push-chain development, meaning that the distributional preferences of the POCs drove out, or are to some extent responsible for, the disappearance of DOC [TH-REC]. Nevertheless, it is more than plausible that this development reinforced tendencies that were anyway already present in the DOC before.

The situation in early Middle English can then be visualised as follows (cf. Figure 61): both the DOC and the POC, represented on the left and right of the figure, respectively, are associated with two lower-level constructions each, which in contrast to their parent constructions fully specify the order of objects involved. However, the schemas differ in terms of entrenchment of their daughter constructions. While in the case of the DOC, the [REC-TH] construction is more frequent (and thus more entrenched), the opposite is true for the POCs, which show an even more pronounced

[251]Remember also that De Cuypere's (2015a) data in fact demonstrated a slight increase in [ACC_{TH}-DAT_{REC}] patterns towards the end of the period. It is therefore evident that changes must have taken place at the transition from Old to Middle English which cannot be captured by the corpora used in the present study and De Cuypere (2015a); cf. also Koopman (1990); Allen (1995: 48); Koopman & van der Wurff (2000: 262); Fischer & van der Wurff (2006: 189).

[252]To be precise, De Cuypere (2015c) comments on [DAT-ACC]/[ACC-DAT] and the OE *to*-POC only, while the present thesis takes into account all kinds of case frames and prepositional paraphrases. Nevertheless, the proposals are easily comparable.

preference for one of the constructional types, namely that of [TH-*prep*REC]. In fact, it could even be questioned whether for POCs the opposite order [*prep*REC-TH] had already acquired construction status in Old English, or whether the occasional examples were rather an epiphenomenon of an in general freer system of word order, in which the basic order of REC-late could be overridden in certain circumstances.

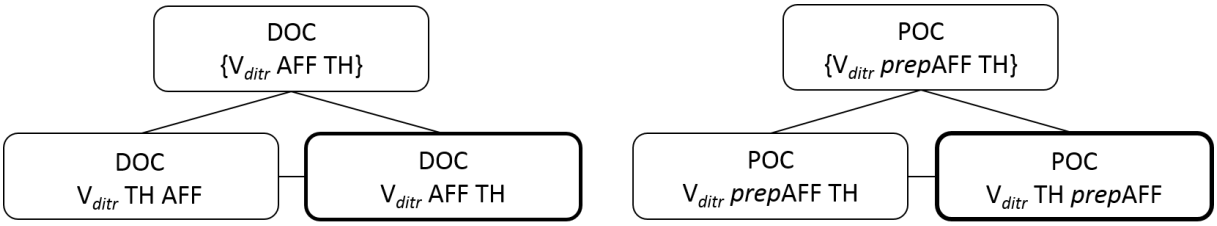

Figure 61 Constructional network of DOC and POC with associated object order sub-constructions in late OE

As to the further development of the constructions in the course of Middle English, I have shown that the tendency towards [REC-TH] order in the DOC grew substantially from early/mid Middle English onwards, until it became near-categorical at the end of the period. POCs, by contrast, seem to have had a distinct bias towards clause-peripheral position at all times as already mentioned. This bias increases during Middle English, with [TH-*prep*REC] clearly constituting the most successful variant. In this, the development of POCs closely corresponds to that of PPs in general. In other words, the POC preferences from Old to Middle English reflect the fact that PPs on the whole came to display an increasingly higher predilection for clause-peripheral slots between Old and Middle English (cf. Lundskaer-Nielsen 1993; Bech 2001; among others). While in many cases, this fondness for peripheral position translated into clause-final occurrence, PPs also frequently appeared clause-initially. Although they therefore retained some flexibility for moving around in the clause, they were more and more often restricted to slots outside the 'core constituent group' of subject, verb, and object (in transitive constructions). It is in this respect that the POCs begin to diverge from other PPs, or rather, other PP+NP patterns such as *John cooked dinner in the kitchen/ John loaded hay onto the truck*, during Middle English. As a consequence of POs becoming more tightly integrated into the VP, and of their acquiring core functions in becoming able to express more primary participant roles such as recipient or deprivee, they also maintain the option of occurring within this string of S-V-O constituents. That is, in contrast to non-POC PP-constructions, in which the variant of PP-NP order is progressively ousted in favour of PP-final sequences, the former option (*prep*REC-TH) persists with POCs. More precisely, no significant change is seen in the proportional frequency of this pattern in the course of Middle English, in spite of the more canonical construction (TH-*prep*REC) increasing slightly.

The same trend can be observed when only the *to*-POC is taken into account. But not only that, the tendency is crucially even stronger in this case: although the *to*-POC is similarly strongly associated with REC-last order in all sub-periods, no real change takes place during the whole period, and the

opposite order stably remains in the language. This means that there is a cline developing in Middle English concerning the acceptability of PPs intervening between verb and NP-object. While PP-adjuncts and other less grammaticalised PPs are increasingly restricted to external position, the variant featuring an 'internal' PP (V-PP-NP) is more felicitous with the more grammaticalised POCs. The *to*-POC finally retains the most flexibility in that both sub-constructional types of [*to*REC-TH] and [TH-*to*REC] are steadily linked to the more schematic construction, even though the latter is nevertheless evidently the preferred variant. Importantly, the *to*-POC is therefore different to other POCs and PP-patterns: it more often occurs in post-verbal position [V-*to*REC-TH] than comparable patterns. I will argue below that this is a direct consequence of the strong association of this construction with the DOC, i.e. the emergence of the dative alternation.

In sum, the distribution of orders in the *to*-POC seems to be strongly influenced by its links to other, more 'ordinary' PP-constructions. These connections promote PP-late orders and add to their success. At the same time, however, PP-early orders manage to establish themselves as weaker variants due to the fact that this formal pattern does justice to the more integrated meaning of the PP in this construction, i.e. its more prominent contribution to the construction's semantics. Furthermore, the continuing availability of the a-prototypical pattern can be related to the increasingly tighter alliance between the *to*-POC and the DOC, meaning that instances of [*to*-REC-TH] might form in analogy to DOC [REC-TH] tokens if the two constructions are perceived as linked. That this development should be asymmetric in that the *to*-POC extends its syntactic contexts through association with the DOC (or at least maintains the situation despite the odds not being in favour of it), whereas the DOC sees an increasing narrowing in syntactic options is not entirely unexpected. Considering that the *to*-POC constituted the more successful variant for a substantial part of the period, it is in fact predictable that it should parasitically profit from the relationship at the expense of the DOC (cf. also Perek's 2015 discussion of asymmetrical productivity in the dative alternation; although the point of departure is slightly different in this case, there are still parallels). Once the competitive relationship turned into full cooperation, however, the asymmetry is predicted to be sorted out. Incidentally, this is exactly what we find in the history of English. Although not captured by the Middle English data, we can assume that at some point after this period, the non-canonical order [*to*REC-TH] was lost almost entirely, to the point that it is only found in cases of heavy-NP shift in PDE (Gast 2007: 33). As was also confirmed by the results of the evolutionary game presented above (Chapter 5.2.2), the language therefore eventually settles on a mixed strategy of DOC and *to*-POC, in which the former is associated with [REC-TH] order, whereas the latter specifies a [TH-*to*REC] sequence (cf. Figure 62). The distinct orders, correlated with distinct constructions, then stand in complementary distribution, each having constructed their own niche linked with specific discourse-pragmatic and semantic features. This functional diversification is thought to be beneficial for the constructions

involved as well as for the entire system, since its result is a more bi-unique relationship between form and meaning.

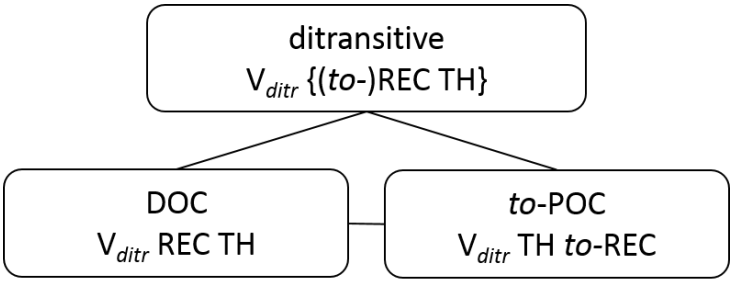

Figure 62 Ditransitive constructeme and allostructions (specifying object order)

To conclude, the scenario of object order development proposed in this section is as follows: I argue that in Old English, both orders are found with the DOC, and show a comparatively balanced distribution. This holds even though [REC-TH] is somewhat more frequent due to discourse-pragmatic issues, such as REC frequently being more topical and therefore often in clause-early position. PP-constructions in general, and POCs in particular, are on the contrary biased towards PP-late order, due to their adjectival origins as 'afterthoughts/ less central information'. In a second phase at the turn from Old to Middle English then, DOCs and POCs enter into clearer competition, which results in a decrease in DOC [TH-REC] orders in favour of the corresponding prepositional variant. In the course of Middle English, we see the DOC and the POCs (in particular the *to*-POC) competing on a schematic level, with the latter being more successful for some time. On a lower level, the greater success of the (*to*-)POC is reflected in that the prepositional pattern competes against the DOC for REC-first orders (at least to some extent), in addition to REC-last orders being almost invariably expressed prepositionally already. However, with the (semantic) association between the constructions, i.e. the DOC and the *to*-POC, becoming tighter and tighter, and with the establishment of the 'ditransitive constructeme', the patterns finally arrive at a shared-workload situation. That is, each discourse-pragmatic function instantiated by ditransitives – labelled [+focus REC] and [-focus REC] above in a simplified manner – becomes linked to one particular construction. The constructions therefore form a symbiotic relationship. The main reasons for the DOC being the stronger type in PDE, while the *to*-POC constitutes the weaker variant in this paradigmatic relation, can again be explained by the fact that the prototypical features of recipients simply correspond better to the specific object order requirements of the DOC. The issue of non-canonical orders with pronouns in PDE (of the type *Give it me*!) is not problematic for this account either; it has to be assumed that these idiosyncratic variants represent lower-level specifications which for some reason have managed to reproduce successfully despite not conforming to the more general pattern (Gast 2007; Gerwin 2013, 2014; De Cuypere 2015a; Yáñez-Bouza & Denison 2015). Such reasons may include the phonological properties of the elements involved: for example, the most frequent theme-argument in these patterns is the

exceedingly short pronoun *it*, which might trigger early position merely for its minimal length (cf. also De Cuypere 2015a: 247). On the other hand, related and highly frequent constructions in which the pronoun is typically found in immediate post-verbal position are likely to have an impact on ordering. If such effects are strong enough, they could well overrule the higher-level DOC specifications (see Gast's 2007 'principle of frequency-based serialisation').[253] That is, theme-first DOC uses should be more successful than theme-second DOCs if the theme involved (i.e. *it*) very often occurs in a different construction whose structure corresponds to these uses.

In the following, the development of the ditransitive constructions in regard to clause-level word order will be discussed. The main focus will here be on the differences in development of the patterns involved which can be observed in the data, as well as on possible ways to explain these.

6.2.1.4.2. Fixed SVO in ditransitive constructions

In respect to the fixation of SVO order in ditransitive patterns, it is interesting to note that there are some curious similarities as well as dissimilarities in behaviour of the various constructions involved. What all patterns have in common is a general trend towards post-verbal object order, meaning that both objects (in whatever order) increasingly occur immediately after the predicate. Furthermore, although less pronouncedly so, direct sequences of SVO come to grow in proportional frequency in the course of Middle English. The lower figures for SVO compared to VO orders are mainly due to negation particles (146a) and adverbs (146b) maintaining their ability to intervene between subject and object. The former issue is gradually resolved by the introduction of do-support in the history of English, with instances such as (146a) becoming markedly less frequent towards the end of Middle English. Adverbs, in contrast, are still highly flexible in terms of positioning in PDE in that they can appear in all kinds of slots including the one intermediate between subject and verb (cf. Quirk et al. 1985: 490-496).

(146) a. 3ho$_{S}$ ne$_{NEG}$ *se33de*$_{V}$ itt$_{DO}$ **nani3 mann**$_{IO}$
'you did not say it to any man'
(CMORM,I,83.739; M1)

b. the kynge$_{S}$ fulle humbely$_{ADV}$ *grauntyde*$_{V}$ **hyr**$_{IO}$ grace$_{DO}$
'the king very humbly granted her grace'
(CMGREGOR,206.1794; M4)

Furthermore, it has to be kept in mind that non-finite patterns as well as pro-drop forms were included in the present dataset, which automatically leads to a smaller proportion of SVO compared to VO orders. Considering this, the smaller number are only expected. If only tokens with an overt subject are taken into account, strings of [SVO] without intervening material in fact account for between 40-

[253] A quick search of the COCA for verb+*it* combinations yields an excessively high number of types, the five most frequent of which amount to between 20.000 and 50.000 tokens; this alone can be taken as good support for Gast's assumption that *it* displays a distributional bias in transitives which also impacts its positional distribution in other constructions.

50 per cent of all instances in M1, and between 75 and 80 percent in the last sub-period. All in all, the Middle English period thus evidently sees a move towards stricter word order in ditransitive patterns, both concerning the relative position of verb and objects, and in regard to the sequence of subject, verb, and objects. That such a regularisation should take place is of course far from surprising, but constitutes a well-known fact in English historical linguistics (cf. e.g. Fischer et al. 2000; Harbert 2007; Los 2015, among many others). Nevertheless, confirmation that the more general processes are paralleled in ditransitive constructions provides support to the assumption that the change towards (S)VO really represented a system-wide, large-scale development. Moreover, a piece of information that is more particularly relevant for investigations of ditransitives is that there is an increase in immediate sequences of the objects, meaning that both objects are progressively restricted to occurring together on the same side of the other constituents involved.

Although the constructions accordingly seem to pattern together in regard to the overall tendencies shown, there are also conspicuous differences between DOC, POC and *to*-POC in a number of aspects. For example, the extent to which the canonical order was established in early Middle English with the different constructions varies. Furthermore, the speed of progression of the change as well as the final outcome of the development in late Middle English are not the same across all patterns. As to the former issue, DOCs diverge from PP-constructions in that (S)VO variants are less frequently found with this construction than with the prepositional competitors in the very beginning. This means that while POCs show a preference for (S)VO order from early on, this predilection is weaker with DOCs. Quite possibly, this unequal distribution is again a manifestation, or rather a consequence, of the adjunctival origins of the POCs: it could be assumed that in the case of POCs, the predominance of PP-late position combined with a bias towards [AGENT-V-THEME] sequences inherited from transitives (cf. below), and resulted in a preferred order of [AGENT-V-THEME-*prep*REC] in late Old English/ early Middle English already. In the more independent DOCs, on the other hand, no such predilection would have been given, but both non-agentive arguments, which both expressed tightly integrated core participant roles, could move around freely (in terms of their positional relation to each other as well as in the clause). Even if SVO order was the favoured option in the closely related transitives at this point already, fronting one object to initial position would then still have been possible without either violating object-specific preferences (in contrast to the PP-late constraint of POCs) or diverging from the emerging norm. In other words, the availability and potentially higher acceptability of patterns such as [TH-AG-V-REC] or [REC-AG-V-TH] than that of the corresponding POC-variants could be taken as responsible for the higher frequency of (S)VO orders in POCs at the beginning of the period. Unfortunately, this assumption is not entirely borne out by the data, as there seems to be no significant difference between the figures for the patterns in this regard. Nevertheless, it is plausible to presume that the comparatively greater independency of the DOC (as a highly

conventionalised and entrenched construction in the network) allowed for a greater degree of flexibility in constituent ordering. POCs, by contrast, were strongly linked to other PP-patterns at this point, or indeed only in the process of emerging out of them, and might therefore still have been more restricted in their internal structure. It should be mentioned, however, that the differences between the patterns are (although significant) still very subtle.

A similar problem concerns the changes visible within the Middle English period: here, we find a relatively rapid and steep increase of (S)VO in the DOC from M2 onwards, whereas POCs do not show too much change overall, and only slowly rise in the course of the period. In the latest stage of Middle English, (S)VO is then fixed to a greater extent in DOCs than in POCs. That is, a considerably larger fraction of DOC tokens has adopted the canonical order at this stage, while the initially more progressive POCs have stagnated in their development, and maintain some flexibility. Crucially, however, the prepositional *to*-construction in this case behaves more like the DOC. The fixation of (S)VO order at the end of the period is similarly more advanced with this variant (i.e. the *to*-POC) than with POCs in general.

The sharp growth of rigid (S)VO orders in the DOC could tentatively be linked to the fact that once the morphological case system had more or less collapsed, it became increasingly important to distinguish between the agent and the recipient of the action by means other than case distinctions. More precisely, it is possible that distinguishing between participant roles of the arguments involved in ditransitives was more problematic without case marking than in other constructions: for example, if transitive constructions were prototypically used to express interactions between animate agents and inanimate themes, identifying the respective participants would have been comparatively easy without any marking on the constituents on the basis of animacy asymmetries. Ditransitive events, however, prototypically involve two animate participants, i.e. an agent and a recipient, in addition to the usually inanimate theme. The animate participants furthermore typically overlap in terms of discourse-pragmatic status in that both tend to be topical (given and definite, among other things). As a consequence, topicality asymmetries could likely not be exploited as readily as in other cases. While in POCs, this issue would not have been particularly pressing since the REC-argument was marked by the preposition, case-less DOCs could potentially have caused difficulties. In such a situation, variants with fixed, invariable positions for the arguments were presumedly able to spread quickly. In other words, in an unstable system as the DOC at this stage would have represented, sticking to one particular order – in our case the already frequent and preferred SVO – would certainly have been highly beneficial.

Despite the fact that distinguishing between participant roles in POCs would have been eased by the prepositional marking of one of the arguments, a slight increase in canonical clause patterns is still expected due to systemic pressures. If most related constructions move towards this option, POCs will

profit from adopting it more frequently as well. Nonetheless, this does not explain why one particular POC-type, namely the *to*-POC, should see a more substantial increase in fixed SVO orders. In this regard, the increasingly close association between the *to*-POC and the DOC can be drawn on. It can be assumed that the stronger this connection becomes, the more the structure of the DOC impacts that of the *to*-POC. The growing success of SVO in the DOC in turn causes SVO variants of the *to*-construction to become more frequent, since having the same overall (clause-level) form is beneficial for both patterns in that the semantic link between them is more evident this way. Because formal and functional diversification is still possible through differences in object ordering, this development is in fact a rather clever one. That is, this strategy allows the patterns to be as similar as necessary and at the same time as different as possible.

In sum, what I have suggested in this section is that first, there is a clear trend towards regularisation of the ditransitive argument structure system in Middle English, which corresponds to and is influenced by the overall tendency towards reduction of variation in the language system at that time. In the particular case of ditransitive constructions, this development is visible in that the two object arguments more and more frequently appear in direct sequence in post-verbal position. Furthermore, the position of the subject in relation to the verb and the objects is increasingly fixed to initial place. These regularisation processes are beneficial for the system as a whole as long as the expressive potential of the language is maintained.

As to the individual constructions available to ditransitive verbs, I have demonstrated that the patterns differ in their development in the course of Middle English (and possibly before that): while DOCs are more variable in early Middle English than POCs (including *to*-POCs), this changes on the way to late Middle English. At this stage then, DOCs and *to*-POCs predominantly show fixed SVO order contrary to POCs, which remain somewhat more flexible. These differences have been related to the distinct properties of prepositional patterns at the beginning of the period. Their preference for PP-late order, and their close relation to other PP-constructions (which essentially constitute combinations of transitive patterns + adjunct) possibly influenced their more advanced fixation of (S)VO order. DOCs, in contrast, were more flexible still at the turn of the period due to case marking as well as their more independent status. With case being lost, however, (S)VO thrived since it helped distinguishing between the pretty similar agent and recipient arguments. This development finally triggered changes in the *to*-POC, which contrary to the other POCs, moved towards greater rigidity to formally match the DOC to a greater extent.

It should be clear, however, that the account put forward in this section is quite simplified and to some extent speculative. Furthermore, it should be noted that the distinctive developments of the patterns observed in the data are small enough that they could in fact be accidental results of inappropriate or too coarse classification schemes. It is therefore certainly necessary to investigate

word order in Middle English ditransitives in a much more detailed manner. Unfortunately, this is outside the scope of the present thesis, and therefore must be left for future research.

6.2.1.4.3. Ditransitives in the context of a system-wide fixation of word order on the clausal level

As mentioned in Chapter (3.1.4.1) above, the notions of 'subject' and 'object' in Old English as well as the question of word order change on the clausal level represent a fairly tricky issue, a discussion of which would require a lot more space than available within the limits of the present thesis (cf. also Denison 1993; Allen 1995; Fischer et al. 2000; Harbert 2007; Barðdal 2009; Möhlig-Falke 2012). Nevertheless, the matter will be briefly touched upon in this section, since as alluded to in the previous chapter, it ties in with the development of ditransitives in the history of English.

In general, the category of subject is typically defined in regard to a number of different dimensions, including syntactic, morphological, semantic as well as discourse-pragmatic properties of the constituents, while objects are often defined negatively in relation to the subject. Concerning the former, subjects are usually associated with control of verbal agreement, control of coordinate subject deletion, the triggering of reflexivisation, as well as sentence-initial position; apart from verbal agreement, these features are all present in PDE subjects. As to morphological characteristics, nominative case marking, or unmarked case is commonly seen as a defining property of subjects, in contrast to objects, which prototypically receive oblique marking. As is well-known, in PDE case marking differences between subject and object only show with pronouns (*he* vs. *him*). Semantically, subjects of active clauses are normally linked to the role of 'agent', i.e. the prototypical subject is highly agentive, while objects lack such agentivity. Although objects very often instantiate the role of 'patient' or 'theme', i.e. a participant that is maximally different or opposed to the agentive subject, they are however far from restricted to this, but can in fact take on a wide range of different parts (cf. e.g. *John loves pears*, where the object expresses a stimulus or cause rather than a theme). Finally, subjects tend to be topical, meaning that they often refer to given, accessible, and backgrounded information, in contrast to objects frequently constituting the sentence focus and presenting new, unpredictable information (cf. Möhlig-Falke 2012: 41-42, 44-45; also Keenan 1976; Lambrecht 1994; Allen 1995; Traugott 2006).

In PDE, most of these criteria are fulfilled, and in the majority of sentences identifying the subject and object does not present a challenge. Old English, however, is more problematic in this regard, since in a considerable number of cases, no constituent appears to match the definition of subjects as just presented. A prime case in point is the so-called 'impersonal' or 'experiencer' construction prominently discussed in Seefranz-Montag (1983, 1984), Allen (1995), Barðdal (2009) as well as Möhlig-Falke (2012), and referred to repeatedly above. These patterns, sometimes also labelled as 'non-canonical

subject constructions' are conspicuous due to the constituents involved frequently not meeting the requirements for prototypical subjects. For example, in the first part of the sentence in (147a), the only nominal element present is a dative/accusative pronoun, marking a clearly non-agentive referent. Similarly, (147b) shows two NPs, both of which do not express agents, but rather an animate experiencer and a likewise animate cause/stimulus. Furthermore, neither of the arguments is marked by nominative or accusative, but both receive oblique marking. In (147c), in contrast, a nominative NP (referring to the cause/stimulus of the emotion) is given, and also displays agreement with the verb. It is not the nominative that is in first position, though, but the dative experiencer. Also, the nominative marks an inanimate, clearly non-agentive participant, and thus only qualifies as a subject in some respect.

(147) a. **Me**$_{DAT/ACC}$ *hyngrede*, and ge me nawuht ne sealdun etan
'I was hungry, and you did not give me anything to eat'
(CP 1604 (44.327.24); taken from Möhlig-Falke 2012: 6)

b. **him**$_{DAT}$ *ofhreow* <u>þæs manne</u>s$_{GEN}$
'he pitied the man'
(Ælc.Th.I. p.192.16; taken from Allen 1995: 68)

c. **Đam wife**$_{DAT}$ <u>þa word</u>$_{NOM}$ wel *licodon*
'the woman was much pleased by these words'
(Beo. 0174 (639); taken from Möhlig-Falke 2012: 12)

These and other issues lead Möhlig-Falke (2012: 47-48) to conclude that the oblique experiencer in such constructions represent grammatical hybrids between subjects and objects, meaning that the clear subject-object distinction we see in PDE was not as well-defined in OE yet. What is more, it appears that the presence of a distinctly definable subject was not entirely necessary in Old English still. Nevertheless, such a constraint seems to have emerged at some point, as is evident from the introduction of 'dummy' *it*-subjects with e.g. weather-verbs (cf. **Ø snowed* vs. *It snowed*). More specifically concerning the structure of the clause, it has moreover been suggested that (early) OE was a topic-prominent rather than a subject-prominent language in that clause-initial position was associated with the sentence topic (Seefranz-Montag 1984: 528; cf. also Möhlig-Falke 2012: 18, 44-48). That is, rather than necessarily featuring the subject, as is typical for PDE, the first slot in the clause could be filled by any topical element, or be used for constrastive (marked) focus.

The development of a subject vs. object slot, and fixed SVO order in transitive clauses can then be conceptualised as follows: in early Old English, we find a very salient information structure construction specifying a [topic-focus] order for transitive predicates. These transitive clauses, according to Möhlig-Falke (2012: 35), are prototypically "dynamic and involve an asymmetric relationship between two maximally opposed participants" (Möhlig-Falke 2012: 35). The most prototypical construction type is therefore one in which there is an animate agent that represents the

topic of the sentence, and is accordingly given and accessible. This agent asymmetrically interacts with an inanimate, new and inaccessible patient/theme (the focus of the sentence). Although less pronounced, animate experiencers can be expected to be topical in a greater number of cases than inanimate, possibly abstract causes or stimuli, which will often constitute the more relevant piece of information. In other words, a general tendency for sentences to be 'about' animate participants, and highlighting non-recoverable inanimate participants is predictable. This prevalence, or greater success of agent/experiencer-topic theme/cause-focus constructions is most likely caused by human cognitive biases, in that human, animate participants are **per default** more accessible to speakers. Furthermore, human experiencers might possibly be perceived as still more agentive than clearly non-animate entities.

Together with the fact that the most prototypical case-marking pattern is one of agent-NOM theme/patient-OBLIQUE (or indeed -ACC), these distributional preferences can eventually lead to the emergence of a clearly-defined subject (vs. object) slot. This means that a subject (and object) category forms which is associated with the above-mentioned properties. On the level of argument structure constructions such as the transitive, this corresponds to the formation of a construction in which the respective placement of subject and object in relation to each other is fixed. As will be discussed below, we can assume that this process of category establishment and the increasingly transparent differentiation between subjects and objects also had an impact on case marking. More precisely, the increasing case syncretism between nominative and accusative could on the one hand be linked to the progressively clearer association of the respective cases with the opposed categories. On the other hand, the gradual ousting of genitive (and later dative) marked objects could have been triggered by the increasing entrenchment and greater success of an object category associated with accusative case. In this scenario then, the loss of lexical case in favour of structural case (cf. e.g. Allen 1995) would constitute an epiphenomenon of a move towards more prototypical subject vs. object slots, maximally differentiated from each other in consistent ways.

As mentioned above, ditransitives pose an interesting challenge in this regard, since they typically involve not only one animate participant, but instead two, namely an agent and a recipient-like argument. The latter of these mainly patterns with typical objects in regard to case-marking, clause-position, absence of verbal agreement and the like, and is also clearly less agentive than the 'giver', 'depriver' or whatever participant role the first argument of ditransitives usually specifies for. Nevertheless, it often overlaps in topicality with the agent argument (in addition to prototypically being animate as well) and therefore possibly takes up an intermediate place between prototypical 'subject' and prototypical 'object'. In POCs, this issue is readily resolved by the REC-argument being marked by a preposition. In DOCs, however, mismatches or ambiguities can potentially arise especially

once case marking becomes less indicative. This difference might, as already dealt with above, explain the more rapid adoption of fixed S-first, O-late orders in this case.

While the generally growing fixation of subjects to clause-early position and objects to clause-late position can thus be explained by biases concerning discourse-pragmatic/ information-structure features of the arguments, the relative placement of the verb is a different issue. Here, Ferrer-i-Cancho's approach to verb positioning in terms of mathematical modelling can be drawn on: as he shows, "placing the verb at the center is optimal in terms of online memory minimization; placing it somewhere else is not" (Ferrer-i-Cancho 2015: 124). That is, movement towards either OVS or SVO is predicted by processing-related factors. Furthermore, verb-medial constructions tend to be highly stable, with the order typically not being reversed once fixed (Ferrer-i-Cancho 2015: 114). Taken together, these preferences result in the rigid SVO order visible in PDE today.

Finally, the overall trend towards a closer connection and tighter positional integration of the core constituents of subject, verb and object (objects in the case of ditransitives) can be interpreted as the result of chunking and habituation, in that elements which often appear together will tend to be perceived as one whole. This is furthered by the fact that these elements represent the core and most salient information in the clause. Variants in which these prominent constituents occur in direct sequence will therefore be more successful, i.e. a development towards tighter formal links will be beneficial for the constructions because it reflects the close semantic relations between the components. One consequence of this is the increasing confinement of e.g. sentence adjunct-PPs to clause-peripheral position, and the greater difficulties of any non-core constituent intervening in this strict SVO string during the course of Middle English. As was shown above, the continuing ability of PP-RECs to appear in pre-TH position even in late Middle English is thus a clear indication of its advanced state in marking core participant roles.

To conclude, this chapter has demonstrated that the system of ditransitives in Middle English was subject to a number of changes ultimately leading to a comparatively very regular situation, in which both members of the PDE dative alternation are associated with rigid SVO order as found in the whole network. As concerns the order of objects, the DOC and the *to*-POC have each come to resort to one particular order, [REC-TH] in the case of the former and [TH-*to*REC] in the case of the latter. In doing so, the patterns have diverged functionally, with the DOC being used in one type of discourse-pragmatic context, and the *to*-POC in the complementary functions. The development of the dative alternation thus represents a story of emerging symbiosis and 'sharing the workload'.

6.2.1.5. Summary

In a nutshell, the preceding chapters have discussed the main changes that influenced the trajectory of ditransitives in the history of English, with a particular emphasis on the development of the

constructions involved during the period of Middle English. More specifically, the following changes have been identified and investigated in more detail:

- **Coalescence of ditransitive case frames:** potentially triggered by the large overlap in the semantics of the case constructions, the DOC first loses less productive types and moves towards the most prominent [DAT-ACC] frame; in a later stage, all case marking on the object arguments is lost due to perceived redundancy of the suffixes and increased formal syncretism.
- **Increasing competition between the DOC and prepositional paraphrases:** already in Old English, PPs extend their functional space, and progressively take over more and more functions previously performed by case-marked NPs. With ditransitive verbs, PPs come to indicate the REC-argument. This marks the establishment of POCs as competitors to DOCs. Competition is then resolved in strikingly different ways with different verb classes: with one group of verb classes, including verbs of dispossesion, the POC ousts DOC uses, while in the case of transfer-verbs, a stable symbiotic relationship between the DOC and the *to*-POC forms. In this paradigmatic relation, the DOC represents the stronger variant, and the *to*-POC the weaker one. With time, competition therefore gives way to cooperation in this case. The constructions diverge functionally and form their own discourse-pragmatic niches, thereby sharing the workload. A third, minor group of verb classes exhibits a mixed behaviour – for example, verbs of reversed transfer show a preference for POCs early on, briefly allow for DOC uses, but revert to their original preferences eventually, and are restricted to prepositional patterns in PDE.
- **Semantic specialisation of the DOC:** the DOC sees a reduction in verb-class-specific types, i.e. associated senses. Moving towards a prototypical basic meaning of 'transfer', uses peripheral to this sense (such as 'disposession' or 'pure benefaction/malefaction') are increasingly marginalised, and eventually ousted entirely.
- **Fixation of word order:** parallel to a fixation of SVO order in the whole network, ditransitives move towards rigid clause-level word order as well. This change is slightly more pronounced in the case of the DOC, possibly due to the greater need to distinguish the similarly typically animate and given agent and REC-argument from each other on the basis of position. Interestingly, the *to*-POC also comes to show a stricter fixation of SVO than other POCs. I take this to be the result of the emergence of the dative alternation, i.e. the increasingly closer association between the two patterns. As to object ordering, the preference of PPs for clause-late placement translates into POCs being strongly associated with [TH-*prep*REC] order. This in turn drives the DOC to go for the opposite order of [REC-

> TH] in an increasing number of cases. In sum, this results in a complementary formal distribution of the members of the dative alternation, with each construction being linked to one particular object sequence and thus also discourse-pragmatic function.

In the next chapter, the question of causal influences indicated by the observed correlation between these changes will be addressed. While the focus will here first be on the notions of correlation, causality, and co-evolution (6.2.2.1), the subsequent section will be concerned with a tentative timeline regarding the succession of the individual changes and an assessment of possible causal effects between them (6.2.2.2).

6.2.2. Correlation, causality, co-evolution

The history of ditransitive constructions in English evidently entails changes on various levels, including changes to the phonological, morphological and syntactic form as well as the semantics and the pragmatics of the patterns involved. It could be seen in the preceding chapters that changes in the morpho-syntactic options available for ditransitive verbs took place when case marking was lost, and word order was fixed. Furthermore, a new construction emerged in which one of the arguments was encoded by a PP rather than an NP. On the other hand, semantic (and pragmatic) changes can be observed in the specialisation of the DOC as well as in the functional extension of PPs, and the eventual discourse-pragmatic differentiation of both patterns. As also clear from the discussion of these changes presented above, it is often difficult to keep the different developments apart, since they greatly overlap temporally. Moreover, some of the correlations between the changes and their outcomes appear to hold cross-linguistically. For example, the absence or presence of case marking frequently corresponds to increased or decreased rigidity in word order as well as the presence or absence of periphrastic, more analytic means of expression (cf. e.g. Allen 2006: 214; Hagège 2010: 10; Malchukov, Haspelmath & Comrie 2010: 6; Haspelmath 2015: 31-32). Since correlation is often taken to imply causation (although not always justly so), it is not surprising that causal relationships between the sets of changes have often been suggested (cf. Chapter 3.2 above). One point of debate concerning such proposals it typically the question of directionality of causality: this is usually seen as an either-or situation, where one has to decide between change A causally influencing change B or vice versa. In the following, I will to some extent contest this notion, or rather, supplement it by arguing that in some cases, a co-evolutionary account might be more appropriate. In such a co-evolutionary scenario, linguistic replicators adapt to their environment, meaning that those variants that are more successful in regard to environmental factors will survive and prosper. With competing or cooperating variants, adaptations, i.e. changes to one variant can then lead to the other variant responding and changing as well, which might in turn lead to further changes in the first variant, and so on. That is, competing (or cooperating) variants can come to co-evolve and mutually adapt to each other, in addition to adapting

to their environment. Incrementally, accumulations of such smaller changes can then amount to larger developments on both sides, and can also give the impression of one-sided, discrete causal effects. This assumption is perfectly in line with, or indeed follows from, taking a usage-based constructionist approach, and is also appealing from an evolutionary linguistic perspective, since co-adaptation and co-evolution are highly common phenomena in the biological domain. Nevertheless, in other cases simple cause-and-effect scenarios might be supported by the data. A more detailed discussion of co-evolution of linguistic elements as envisaged here (in addition to a brief comment on correlation and causation) will be given in the first section of the chapter (6.2.2.1). Afterwards, the relation between the changes identified in the history of ditransitives in English as presented above will be dealt with (6.2.2.2).

6.2.2.1. On the notions of correlation, causality and co-evolution

The fact that correlation between two variables does not imply and necessarily entail causation is a well-known and frequently found point of criticism in statistical analyses. Committing this logical fallacy is also widespread in historical linguistics: the lack of opportunities to obtain further data or conduct additional tests etc. invites taking cause and effect relationships as facts where the most we can really determine is temporal correlation. In other words, a change that follows another in time is frequently taken to be the result of the earlier one (*post hoc ergo propter hoc*). Similarly, events that occur together, i.e. in an overlapping time span, are often interpreted as standing in a causal relation to each other (*cum hoc ergo propter hoc*); cf. e.g. Damer (2009: 180-183). Especially in the latter case, it is furthermore easy to confuse cause and effect, since the direction of causality (if there is any) is difficult to determine when there is temporal simultaneity. In general, inferring causality from empirically observed correlation in historical linguistic data is therefore part of the theory, although the plausibility of certain changes and directionalities can be assessed based on e.g. psycho- or neurolinguistic findings as well as trajectories of change in other domains.

In the following, I will approach the question of directionality in causal effect scenarios from a co-evolutionary (and/or co-adaptationist) perspective. This approach is taken to be highly useful for a number of cases: assuming a mutual influence between changes to two distinct elements (or rather, presuming that elements can engage in a reciprocal feedback and adaptive loop that gradually leads to larger changes on both sides) saves us from the danger of oversimplification and risk of confusing cause and effect that is inherent to suggesting a one-directional impact from one discrete, unified change on another. However, as already mentioned, the possibility of co-evolutionary scenarios does of course not impede the possibility (and plausibility) of changes impacting each other in one direction.

In biology, ‘co-evolution’ commonly refers to the phenomenon of reciprocal evolutionary relationships between two or more species, meaning that “individuals of two or more species exert

selective pressures on each other" (Moore & Cotner 2011: 161; cf. also Dercole & Rinaldi 2008: 13). That is, rather than one party changing and the other reacting, until the first entity changes again and the process starts anew, co-evolutionary scenarios see a zig-zag succession of adaptive changes or 'stepwise evolutionary responses' of the interacting entities to a (therefore) constantly changing selective environment. A good case in point is the co-evolution of certain flowers and the insects pollinating them, with both species reciprocally influencing each other's adaptations (cf. e.g. Ehrlich & Raven 1964 on co-evolutionary patterns of butterflies and plants).[254]

Ecological relationships which typically lead to co-evolution are those between predator and prey or parasite and host as well as competitive or mutualistic/cooperative associations (Cox 2006). Coevolution in the former three, especially in competition, is often described in terms of an 'evolutionary arms race', in which the species are pressured to continually 'improve' in order to still be able to compete against the other. This means that each innovation of the antagonist has to be counteracted with an adaptation of the competing entity (cf. Dawkins [1989[2006]: 248; also Dawkins & Krebs 1979). However, the concept of an 'arms race' is also applicable to relationships between mutualists, who will continue to co-evolve and adapt to each other until an equilibrium of minimal cost and maximal benefit for both is reached (cf. also Cox 2006). As already repeatedly alluded to above, the most interesting relationships for the present study are those of competition and symbiotic mutualism, i.e. the latter two of the relationships just mentioned. In the case of competition, the species (or organisms) typically interact in an antagonistic fashion, 'fighting' for resources. In contrast, mutualism usually indicates cooperation, i.e. "an interaction between organisms in which each participant experiences a gain in *fitness*" [original italics] (Moore & Cotner 2011: 277). While changes in both competitors and mutualists can accordingly be mutually adaptive, it is only in the latter case that co-evolution is beneficial for both parties involved.

Although co-evolution is best-known from biological evolutionary systems, various studies have shown that it in fact pertains to complex adaptive systems in general (cf. e.g. Savit, Riolo & Riolo 2013). Therefore, the definition of the concept has been extended to refer to "the parallel feedback process by which agents continuously adapt to the changes induced by the adaptive actions of other agents" (Savit, Riolo & Riolo 2013). Since languages are assumed to be complex adaptive systems in this thesis, this then suggests that co-evolutionary phenomena should be seen in the historical development of languages as well, a proposal which will be taken up in the following sections.

[254]Incidentally, the issue of correlation vs. causation is reflected in evolution in that 'co-evolution' is often distinguished from 'co-adaptation' – the latter indicates that two (or more) elements fit together in their adaptations, which does not necessarily indicate co-evolution in the sense of 'changing together' (cf. Marten 2008: Ch.5).

6.2.2.2. Correlation, causality and co-evolution in the history of ditransitives

In this chapter, possible causal or co-evolutionary effects between the changes in the history of ditransitives will be discussed in turn, based on the correlations observed in the data (cf. Chapter 4.2.5). As shown above, the tentative timeline that the data suggests is that the loss of case marking was already well in progress in early Middle English. While prepositional paraphrases were similarly present before the beginning of the period, a clear increase in their frequency in relation to the double object construction only occurs during Middle English. Concomitant to this change, or slightly later, the DOC narrows in its semantic scope, and certain sub-senses are marginalised and eventually lost. The fixation of constituent order (both on the clause level and in regard to the relative position of the object arguments) is the latest change in this chain of events, although the precise situation is a little more complex. The main argument that I will put forward is that the history of ditransitives is characterised first by adaptations of two particular constructions, namely the DOC and the (*to*-)POC to changes to the environment, i.e. changes to parameters such as the salience of case marking, and the degree of fixation of word order. Furthermore, the constructions are driven into a mutually adaptive (first competitive, then cooperative) relationship, in which they adapt to each other in addition to adapting to 'external' systemic changes.

6.2.2.2.1. Case loss and the rise of prepositional constructions

The loss of case marking in the history of English has frequently been related to the increasing use of prepositional paraphrases, typically assuming either a push-chain or a drag-chain scenario. In the former, it is suggested that prepositional constructions came to 'rescue' the system in helping to disambiguate semantic roles once morphological case marking had been lost. By contrast, the latter set-up would see case being lost due to the increasing availability of analytic periphrases making it redundant. Moreover, combined approaches have also been put forward, suggesting that it was neither only the one nor only the other, but rather a sequence of push-chain processes first, and drag-chain developments later (cf. e.g. Samuels 1972: 80-84). This thesis supports the idea of a bi-directional influence between the changes, but moreover takes up Lundskær-Nielsen's (1993: 26-27) proposal of a stepwise impact rather than a clear one-time progression from push-chain to drag-chain.

Focussing on the changes in question as visible with ditransitives, I furthermore argue that it is necessary to consider the developments leading up to the changes seen in early Middle English. For example, the availability of POCs in Old English, i.e. at a time when case was still rather prominent, is often taken to refute push-chain scenarios (cf. e.g. Allen 2006: 214; De Cuypere 2015c). However, these accounts seem to neglect the fact that case syncretism was highly advanced in Old English already, even if case marking as such still persisted. Taking into account that POCs also did not appear as alternatives to the synthetic construction overnight, this bit of information is therefore not really of

explanatory value – and is admittedly also not presented as such in Allen (2006) – but only pushes the question back to early or pre-Old English. In other words, the initial emergence of POCs could still have been triggered by the increasing loss of case distinctions between Germanic and Old English. At the same time, the 'birth' of PPs and their expansion into new domains from Proto-Indo-European onwards might have been involved in the reduction in the case marking system of Old English. As dealt with above in the evolutionary game theoretic approach to recipient marking (5.2.2), I assume that such prepositional patterns were equally or even more apt to express similar functions as the resident case frames due to their greater expressivity.

While it is difficult if not impossible to determine which of the changes came first, it is then nevertheless plausible to assume that the developments reciprocally influenced each other. That is, a gradual decrease in case marking salience in synthetic patterns likely caused adaptations in the prepositional patterns available, furthering their use in new contexts, and thereby increasing their success. This in turn could have triggered further reductions in the case marking system, and so on. Competition between synthetic and analytic means would therefore have prompted co-adaptation and co-evolution of the constructions involved.

Following this line of argumentation, the history of the English DOC and POC (as well as other argument structure constructions and still other parts of the network) can be conceptualised as a gradual co-evolution of structures over an extended stretch of time, with case marking incrementally becoming superfluous, and PPs in turn growing in frequency and acquiring increasingly more functions. Although this assumption seems to some extent probable, and can plausibly account for the developments up to Old English, the decidedly more rapid changes seen between late Old English and early Middle English are slightly problematic for this account. That is, explaining why the gradualness of changes in the beginning should be replaced by a much quicker progress in development is challenging. Even though the pathway does resemble the typical s-curve of linguistic changes, the initial period of slow growth would seem to be excessively long in this case.[255]

In any case, what I therefore suggest here is that by Old English, a relatively stable equilibrium between case marking and prepositional constructions had been reached, which was, however, subsequently disrupted by other developments, leading to further changes in the system. This is supported by the fact that the DOC and its case constructions were stable within Old English, and a reduction in case frame types only took place at a relatively late point. Also, the circumstance that POCs did not enter into large-scale competition with the DOC in Old English, but only reached local

[255]Note that the evolutionary notion of 'punctuated equilibrium' may be of use in this context. This concept refers to the fact that in biological evolution (among other things), long periods of stasis or equilibrium, in which changes take place very slowly, are interrupted by short periods of punctuation, i.e. very rapid changes (cf. e.g. Eldredge & Gould 1972; Dawkins 1986; Bowern 2006).

peaks with some verb classes.[256] Furthermore, even though there was some reduction in case frames in Old English, this did not correlate with the availability of prepositional paraphrases concerning verb classes. That is, case marking was not lost more rapidly or earlier with those verbs (and verb classes) for which periphrases were present. On the basis of these points, I argue that the emergence of POCs did not constitute the main trigger of the reduction in the range of DOC case frames seen towards the end of the Old English period (e.g. the move towards [DAT-ACC]). Instead, I assume that the ousting of less productive types and the eventual loss of case marking in the DOC resulted from the unpredictable variation in (formal) case frames for expressing particular semantic functions which characterised the construction in earlier English. This tendency was promoted by the substantial variation in the morphological marking of the individual case categories – as shown in chapter (4.2.1) above, ambiguity between the dative and accusative suffixes was very high already in early Middle English, and greatly increased over time. In other words, the initial move towards the most productive [DAT-ACC] frame as well as the beginning loss of case in the DOC is taken to have been first and foremost caused by the semantic overlap between the constructions, as postulated in Barðdal (2009). That such a process is plausible is supported by studies on reduction in cases of unpredictable variation (cf. e.g. Smith, Feher & Ritt 2014, who show that the mechanism of accommodation/ alignment during interaction can account for such tendencies; also van Trijp 2013). Similar processes are furthermore assumed to have occurred in other constructions around the same time (e.g. in transitives), which mutually influenced in each other. This way, the loss of case marking in individual constructions could incrementally amount to a system-wide change and the demise of the morphological case marking system in general.

The further development of the DOC and the POCs is then again taken to be one of co-evolution: the increasing reduction of case frames and case markers, which also reduces the cue reliability of the system, is taken to encourage the use of the more explicit PPs. This in turn influences the loss of case, which again adds to the relative fitness of POCs (and so on). The outcome of these accumulative processes in early/mid Middle English is the final merging of case frames (or the loss of case marking in the remaining case construction), and the emergence of a (nearly) case-less DOC with a form [V NP-Ø NP-Ø]. This variant is clearly less successful than the POCs at this point since it is little indicative of the semantic roles involved.

One could in this context put forward the question whether the different pathways of competition resolution seen with different verb class types can be related to the reduction in case frames at the turn to Middle English (i.e. ousting of the DOC in favour of the POC, emergence of a cooperative

[256]It is also interesting to note that verbs of dispossession were, although associated with POCs in OE already, more frequently paraphrased by prepositional theme constructions at this time. While these patterns mirrored the general trend towards 'replacing' genitive case with (*of*-)PPs, *of/from*-POCs did in fact not correspond to this tendency. Their increasing use from Middle English onwards therefore has to be considered within the context of the overall establishment of POCs as alternatives to the DOC.

relationship between DOC and *to*-POC, etc.). On the one hand, these differences could simply result from differences in type and token frequency and semantic features of the verb-class-specific constructions. On the other hand, it is conspicuous to note that the verb class of transfer was most often and most prototypically associated with the most frequent and most salient case frame of [DAT-ACC] in Old English already. Verbs of dispossession, on the other hand, were more reliably associated with the less productive case frames of [DAT-GEN] or [ACC-GEN]. That these case frames were lost relatively early (in favour of the more productive [DAT-ACC] frame, which did not match the semantics of verbs of dispossession too well) might explain the greater success of POCs with this verb class. By contrast, the fact that the frame of [DAT-ACC] was retained longest, and was closely associated with a meaning of transfer, might have aided the DOC's chances of survival alongside the POC. This would eventually have led to the establishment of the dative alternation. In sum, such distributional differences (even if they were only subtle) might have had an impact on the fate of the DOC versus POCs with individual verb classes.

To conclude, what I have suggested here is that the increasing reduction of case marking and the rise of analytic competitors in the early history of English ditransitives are causally related and influenced each other in a reciprocal way. The presence of some POCs in Old English can therefore be attributed to the certain degree of case syncretism at this stage, and vice versa. However, the more rapid changes to the case marking system seen at the turn from Old to Middle English, namely first, the reduction of case frames to the most productive [DAT-ACC], and second, the disappearance of case inflections and the emergence of an essentially case-less DOC, are claimed to have different causes. More specifically, I assume that these developments were caused by the considerable semantic overlap between the case frames, which invited a reduction in their range, and an increasing formal syncretism, which led to ambiguity and invited a final reduction of case markers. This loss in turn triggered the steep increase in POCs in Middle English. I therefore think that a causal relationship between case-loss and the rise of analytic competitors in general does hold, even though the first emergence of PP-constructions and their extension to new contexts was not necessarily caused by it.

6.2.2.2.2. Case loss and the fixation of word order

A similar situation presents itself in regard to potential correlations and causal effects between the process of deflection and the increasing rigidity of object order in ditransitives (as well as the increasing frequency of SVO orders in these constructions). Again, influences in both directions have been proposed in this respect: as to influences of word order fixation on case loss, it is plausible to presume that the fact that specific semantic roles were often associated with particular positions in the clause as a consequence of their prototypical discourse-pragmatic features could advance case syncretism (cf. e.g. Allen 2006; Möhlig-Falke 2012). For instance, it is plausible that the most prototypical transitive

clauses involved a 'subject' which was maximally opposed to the 'object' in terms of agentivity and accordingly in degree of topicality, which influencing the placement typically associated with it. This tendency could then have resulted in the case markers of these arguments being perceived as redundant. On the other hand, increased ambiguity in morphological case marking could, with Allen (2006: 215) cause "speakers to rely more heavily on word order to interpret and encode semantic relations". Rather than assuming this connection to be a 'one-way street', a bi-directional, co-evolutionary account suggests itself here (cf. Allen 2006: 215). That is, instead of the loss of word order flexibility either triggering the demise of morphological case marking or resulting from it, both processes probably interacted with each other in a reciprocal way, with the intensification of one change leading to the other following suit, and so on.

As to links between case marking and the fixation of word order in ditransitives, I have suggested above that the loss of the former might have triggered the very rapid increase of SVO order in the DOC observed in the Middle English data (6.2.1.4.2). More specifically, it can be assumed that the syncretism between nominative and oblique case was comparatively unproblematic for prototypical transitives (and was incidentally possibly even furthered by this). For the DOC, however, this change plausibly presented a much higher challenge. This construction typically involved two arguments with relatively similar semantics (two animates), and similar degrees of topicality (two discourse-given, accessible entities), which were only distinguished in terms of (non-)agentivity and usual case-marking. The loss of the latter, i.e. greater ambiguity between nominative and dative, would therefore have led to a decreased disambiguation power. As a result, distinguishing the arguments by pre-verbal position for the agentive subject, and post-verbal position for the non-agentive recipient-like object would have been clearly beneficial for the construction in bolstering a clear association between form and semantics.[257] In the POC, this ambiguity was unproblematic, since the recipient was additionally marked and therefore clearly identified by a preposition. This explains the slower increase of SVO orders with these constructions, and the greater degree of flexibility in clausal word order that we see in the corpus data.

Contrary to clause-level word order in ditransitives, the fixation of object orders with ditransitives and the differences displayed by the constructions involved proceeded independently of the loss of case marking. That is, I contradict Allen's claim that the loss of [TH-REC] is a direct outcome of the loss of the category distinction between accusative and dative (cf. Allen 2006; also Fischer 1992). The main reason for arguing against this assumption is that animacy and topicality asymmetries together with

[257]Note that this assumption is to some extent dependent on the REC-argument being prototypically marked by dative, since syncretism between e.g. nominative and accusative was already highly advanced by Old English. This is, however, not problematic if we assume that by Middle English, the only remaining case frame was [DAT-ACC].

contextual clues would in a large majority of cases have prevented ambiguity even if both object arguments were unmarked. Furthermore, the data presented in this thesis indicates that the DOC only moved towards the canonical object order once its association with PP-constructions, which strongly favoured clause-late position, became stronger. Hence, rather than presuming case loss to have been causally involved in the fixation of [REC-TH] order in the DOC, I take word order preferences of PPs that were present already in Old English, and the emergence of the dative alternation, to have played a major role in this development. This issue will be dealt with in more detail in the following section.

Concerning the general move towards SVO order in the history of English and its relation to the loss of case marking, the scenario of change that is supported in this thesis is that some degree of syncretism in Old English as well as positional biases at this point can be attributed to mutual influence. The broader changes seen at the turn to Middle English, however, are again taken to have been instigated by the beginning reduction in case frames due to semantic overlap and insufficient predictability in variation (cf. Croft 2000; Barðdal 2009). As a result, the tendencies towards certain word order patterns already present before, or rather, the greater frequency of some orders due to universal information structure constraints (such as the principle of end-focus), came into full bloom. An evolutionary arms race between further reduction in case marking and greater rigidity in ordering ensued. Eventually, this resulted in the strict SVO order, and the minimal traces of case marking that are visible in Present Day English, meaning that a stable situation of no further changes (or only very little) has been reached by now.

In sum, I assume that the broad demise of case marking in early Middle English was motivated by reasons unrelated to changes in word order constraints (namely little semantic distinctiveness of various case constructions, and phonetic erosion/ increased formal ambiguity). However, I argue that the loss of case distinctions itself did have an effect on clause level word ordering in the DOC. This construction adopted a strict SVO order more rapidly than its prepositional alternatives. Once the semantico-pragmatically similar agent and recipient arguments could not easily be distinguished on the basis of case marking anymore, it was relevant to differentiate them from each other on the basis of word order in the DOC. In the POCs, this was not as necessary, as their identification would have been facilitated by the prepositional marker.

6.2.2.2.3. Rising prepositional constructions and the fixation of word order

In this section, the influence of the rise of prepositional competitors on word order fixation in ditransitives and vice versa will be briefly commented on. More precisely, it is the establishment of PP-constructions as competitors to the DOC, and in particular the emergence of the dative alternation and its impact that is of interest.

First, in respect to the rise of SVO order in ditransitive patterns, I have shown above that the DOC and the *to*-POC are more frequently found with SVO order in late Middle English than POCs in general. I now argue that it was the increasing rigidity in SVO sequences in the DOC from mid-Middle English onwards, which was itself caused by the loss of case marking, that triggered the move towards stricter clause level word order in the *to*-POC once the patterns became more intimately connected. That is, the emergence of a very close relationship between the DOC and the *to*-POC between the two constructions meant that they became mutually adaptive: changes to one construction would then have caused the other pattern to react. When SVO orders rapidly became more frequent with the DOC (in order to resolve the increasing ambiguity between agent and recipient arguments), the *to*-POC accordingly responded by an increase in SVO orders, too. This then possibly promoted an additional rigidisation of clause-level word order in the DOC and further reciprocal changes in both patterns, i.e. an arm's race between the constructions.

Such a mutually adaptive formal alignment between the constructions is generally possible both in situations of competition and cooperation. However, seeing that the *to*-POC is more advanced in this regard than the other POCs, I assume that structural similarity was especially useful for the constructions once they had come to form a cooperative relationship. In a system which was not yet characterised by strict SVO order everywhere, and strict SVO would therefore not necessarily have been successful in general, it is questionable whether following the DOC in this change would have been beneficial for the *to*-POC, i.e. increased its success rates in competition. In a cooperative relationship, in contrast, changing one's shape to be more alike to one's associate is arguably more profitable, since their connection is made visible. For this assumption to work, a necessary presupposition is of course that cooperation as such is beneficial for the constructions involved. That this should indeed be the case is supported by the results of the evolutionary game theoretic approach above, which has shown that under specific environmental conditions, a cooperative division of work-load scenario is most successful. Furthermore, priming effects and a positive impact on productivity by association with another construction as confirmed by Perek (2015) clearly corroborate that the cooperative relationship is profitable for both construction.

As already mentioned, the other POCs in the corpus data, by contrast, retained some flexibility in clause-level ordering. This observation is incidentally in line with e.g. Haspelmath's (2015: 31-32) observation that the presence of 'flagging', such as prepositional marking of arguments, typologically correlates with fewer restrictions on word order. Nevertheless, SVO is eventually also fixed in POCs and PP-constructions in general, since they are necessarily affected by system-wide changes. That is to say, the tighter connections between the core elements of subject, verb, object(s) in all parts of the system increasingly force any other elements to more peripheral position.

The development of object orders in the different ditransitive constructions is argued to represent another case of mutual adaptation between the DOC and the *to*-POC (but also the POC). As indicated by the empirical data analysis presented above, all POCs and PP-NP combinations (that do not encode ditransitive events, such as *John put a spoon on the table*) show a distinct preference for PP-late position at all times. Accordingly, the order of [V NP PP] is also more frequent than [V PP NP] in early Middle English. Although the PP-first order is less frequent at this point, it is nevertheless present, and the constructions are in general still relatively flexible concerning ordering. There is, however, a crucial difference between PP-NP combinations, POCs in general, and the *to*-POC in particular in regard to the development of the orders in the course of Middle English. With PP-NP combinations, the marked order [V PP NP], i.e. a pattern in which the PP comes directly after the verb and before the NP-argument, decreases over time, corresponding to the general tendency to place non-core material (such as adverbial PPs) in peripheral position. This decrease in PP-early orders is paralleled in the POCs, but is less pronounced, meaning that [V PP NP/ V *prep*REC TH] is still more acceptable in late Middle English in these patterns than in non-ditransitive PP-NP combinations. Finally, the *to*-POC shows little to no change: at the end of the period, both orders, [*to*REC-TH] and [TH-*to*REC] are available. While the latter is more frequent, the *to*-recipient has therefore not lost its flexibility, and can still occur in post-verbal position.

As to the DOC, the data suggest that the orders ([REC-TH] and [TH-REC]) occurred in a relatively balanced distribution in early Middle English, which corresponds to De Cuypere's (2015a) and other's results on Old English. In the course of the period, however, a clear increase in [REC-TH] can be seen; this order is near-categorical in late Middle English. These distributional phenomena are explained as follows here:

The preference of POCs for clause-late, or clause-peripheral position is taken to have had a causal effect on the loss of [TH-REC] order in the DOC. That is, when the patterns became more strongly associated with each other, the strong bias of the POCs for one order drove the DOC to settle for the complementary order. This assumption is supported by the game theoretic model, which has shown that universal pragmatic constraints such as end-focus, paired with preferences for ordering specific to one construction (or strategy), the best choice for the other construction/strategy is to associate itself with the other order.

At the same time, however, I assume that the fact that [REC-TH] order was available and highly frequent with the DOC had an effect on the prepositional ditransitive patterns, which thereby diverged from other PP-constructions. More precisely, I claim that the extension of PPs to cover core semantic roles such as those of recipients, deprivees, and the like, and consequently their association with the DOC, enabled them to retain a [*prep*TH-REC] order even at a time when PPs progressively moved to the periphery of the clause. With the ousting of the DOC, i.e. the loss of this association and the

resolution of competition, the flexibility finally decreased after all, and the more prototypical order [TH-*prep*REC] became canonical. A certain freedom in syntactic choice to enable discourse-pragmatic differentiation also in these cases has nevertheless been maintained: however, instead of allowing different orders of the same construction, this is now achieved through cooperation with other constructions. For example, verbs of dispossession in PDE are found in two distinct prepositional patterns. While the prepositional REC-construction is used in contexts where the deprivee is in focus, prepositional theme patterns involve a topical deprivee and the theme in focus (*John stole money from Mary* vs. *John robbed Mary of money*).[258]

The persistence of [REC-TH] orders is, as already mentioned, even more conspicuous in the case of the *to*-POC, in that both orders are equally available in the course of Middle English (although [TH-*to*REC] is more frequent at all times). This phenomenon is taken to again reflect the greater degree of integration into the VP of the PP in this case; since the *to*-POC has come to mark the core semantic role of recipients of ditransitive events, it shows the same distributional features as other means of encoding this role. That the *to*-POC differs from other POCs in this regard is furthermore assumed to be due to its stronger association with the DOC.

At the end of Middle English, the members of this dative alternation are characterised by the following word order features: the DOC is almost categorically associated with [REC-TH] order, whereas the *to*-POC favours [TH-*to*REC], but is not limited to it. With the association between the patterns becoming stronger and stronger beyond Middle English, the constructions then develop an ever increasing tendency towards sharing the workload more clearly. That is, in the course to PDE, the *to*-POC gives up its flexibility in ordering, and becomes increasingly limited to the complementary order of the DOC, i.e. [TH-REC]. This clearer formal, and correspondingly also functional, differentiation then adds to the stabilisation of the alternation relationship, which in turn positively influences the complementary distribution of orders. Both the constructions themselves, as well as the underspecified 'ditransitive' constructeme, which emerges at some point, profit from this development: functional differentiation correlated with formal differentiation enhances the learnability of the system while maintaining its expressiveness. Despite a fixation in word order, syntactic freedom is not lost entirely, or rather, discourse-pragmatic differences such as topic and focus can still be expressed. In fact, this development constitutes a move from unpredictable variation towards predictable variation, which is beneficial for a system (cf. also Smith, Feher & Ritt 2014).

[258]Note that as mentioned above, the different constructions have also come to be associated with different verbs in a complementary fashion: while *steal* is now typically restricted to the *from*-POC, *rob* is usually found in an *of*-theme construction. This appears to be a relatively recent change, as in the Middle English data, no such biases can be observed.

As a final side note, I assume that the distinct discourse-pragmatic features associated with each order (and therefore construction type) can also account for the circumstance that some verb classes (or sub-sets of verb classes) are restricted to one of the members of the dative alternation. For example, complex predicates of abstract transfer such as *give a kick* have been argued to place a particular focus on the action expressed by the theme argument, for which reason the DOC appears to be pragmatically much better motivated in this case than the *to*-POC (cf. also Goldberg 1995: 94-97). On the other side, complex predicates of mental activity or emotion such as *have love* or *feel envy* arguably give greater relevance to the cause or stimulus of the feeling. This greater compatibility with REC-late ordering then explains their strong bias towards prepositional constructions at all times.

In sum, I have suggested in this section that the emergence of closer links between the DOC and the (*to*-)POC had a clear (possibly reciprocal) impact on word order constraints of the constructions. As to changes in clausal word order, I have argued that the sharp increase of SVO orders with the DOC (caused by increased ambiguity in case marking) led to a more pronounced increase in SVO orders in the *to*-POC. Other POCs (and PP-NP combinations), by contrast, remained slightly more flexible at least for some time – the differences between the patterns are ascribed to the emergence of the dative alternation. A similar explanation holds for the distinct behaviour of the constructions in regard to object ordering: first, the increasingly strong link between the DOC and POCs is taken to force the former to resort to [REC-TH] order, since the opposite order is occupied by the POCs. On the other hand, however, the semantic development of the POCs and their ensuing association with the DOC account for the fact that the order of [REC-TH] persisted with these constructions. In that, the POCs stand in contrast to other PP-NP combinations, in which the PP is progressively restricted to peripheral position and disallowed from post-verbal placement. This development is even more remarkable in the case of the *to*-POC, indicating an even stronger relationship to the DOC. This strong connection, which culminates in the formation of the dative alternation, eventually forces the patterns in a complementary distribution, with the DOC settling on [REC-TH] order, and the *to*-POC on [TH-*to*REC].

6.2.2.2.4. Rising prepositional constructions and the semantic narrowing of the DOC

Last, and possibly also most interestingly since this issue has so far not been dealt with in more detail in the literature, I suggest that the increasing functional extension of the PP-patterns, and the ensuing increasingly strong association between the DOC and the *to*-POC is closely connected the semantic specialisation of the DOC. Thus, the two constructions can be viewed as mutually adaptive, since changes to one construction triggered a response in the other. As was mentioned above, linking up the reduction in range of verb class types of the DOC to the rise of more explicit PP-constructions is not an entirely new idea. However, it is usually not made explicit whether the processes are thought to be causally connected or are only mentioned together since both are taken to have been triggered by the

same change, namely deflection (cf. e.g. Colleman & De Clerck 2011: 201-202; also Barðdal 2007; Colleman 2010b, 2011; Barðdal, Kristoffersen & Sveen 2011). This thesis now argues in favour of the former option, in that it assumes a clear, although gradual and stepwise, cause and effect development between the changes involved.

The specific co-evolutionary scenario proposed for the semantic development of DOC and POCs in the history of English is as follows: despite the fact that in Old English we find different case frames associated with different (overlapping) semantic relations for ditransitive verbs, the most common of these case frames already at this point is [DAT-ACC], i.e. a combination of a dative object denoting the REC-argument and a theme marked with accusative case (Visser 1963: 606–46, De Cuypere 2015a: 7). This pattern in turn most frequently (concerning both types and tokens) and as a consequence most prototypically expresses transfer situations, which are instantiated by 'giving'-verbs. The increasing loss of less prototypical and less productive case constructions in late OE adds to the token frequency of the [DAT-ACC] frame. Furthermore, it results in an increase in type frequency, since even those verbs (and possibly verb classes) that were exclusively associated with other case frames before, would now be found with [DAT-ACC] marking. The semantic distinctions present before (although merely tendencies) are blurred to a considerable degree, with all kinds of semantic relations now being expressed by this frame. This is clearly supported by the Middle English data: a large range of different verb types and verb class types is found in the construction in the earliest sub-period. The assumption furthermore appears plausible even if we acknowledge that some verbs might have increasingly resorted to available POC-patterns once these changes took place, i.e. before Middle English.

With the final loss of case marking, an inflection-less, formally underspecified and rather general DOC pattern emerges at the turn to Middle English. At this point then, the DOC can encode a rather wide range of meaning relations, meaning that it is associated with a number of sub-constructions with varying degrees of productivity and prototypicality. As shown by the corpus results, the most entrenched of these is the sub-sense of transfer, which suggests that the tendencies present in the OE DOC case constructions are carried over to the schematic Middle English DOC.

Concomitant to the establishment of a schematic DOC is the steady increase in the use of the more explicit (and more flexible) prepositional competitors (cf. Mustanoja 1960, Fischer 1992, Allen 1995, McFadden 2002, De Cuypere 2010, 2015b). Among the most prominent (and most frequent) of these POCs are those involving GOAL-prepositions such as *towards*, *till* or *to* since their spatial/allative meaning corresponds most adequately to the 'transfer'-semantics of the large majority of ditransitive verbs, i.e. of the verbs most frequently used in the DOC. Within this group, the *to*-POC is in turn most successful, due to its best performance concerning semantic as well as articulatory/perceptory factors (by being sufficiently expressive and maximally economic, i.e. representing the best match concerning benefits and costs).

In the course of Middle English, an increasingly stronger link between the *to*-POC and the DOC develops due to the former's prevalence and high frequency. The patterns thus enter into a closer and closer associative relationship, until the *to*-POC is perceived as **the** analytic alternative to the DOC. The two constructions are then interpreted as two ways of expressing approximately the same meaning, and a preferential association between two linked patterns thus develops into a (near-)categorical association.[259] Subsequently, in later Middle English and beyond Middle English, 'the rich get richer, the poor get poorer': with the closer association between DOC and *to*-POC, verbs with corresponding paraphrases that include prepositions other than *to* (e.g. *from* or *of*), that is to say, verb classes that do not fit the semantic relations expressed by *to* (GOAL/ ADDRESSEE/ RECIPIENT) are increasingly marginalised from the DOC, and eventually ousted completely. Not compatible anymore with the DOC, whose meaning is increasingly narrowed to encoding 'transfer'-events, these verbs (e.g. verbs of dispossession) resort and become restricted to the prepositional patterns, or other means of expression (e.g. possessive phrases).

The emergence of the *to*-POC variant is accordingly assumed to have stood in a cause and effect relationship with the changes to the function of the DOC; these changes indicate that the patterns functionally approximated each other, and that stronger horizontal links between them formed, eventually resulting in the establishment of the ditransitive-constructeme More specifically, I propose that the narrowing of the DOC's meaning to transfer-related senses correlates with the emergence of the *to*-POC in that those are the senses that are compatible with the relations expressed by this particular preposition. Verbs not expressing such senses, and thus not licensed to enter into the alternation, are then increasingly also prevented from being used in the DOC. As discussed above, this development is not thought to be one-directional, but to constitute a series of reciprocal evolutionary responses in the constructions. That is, the relation works in both ways: one the one hand, the emergence of the *to*-POC plausibly promotes the DOC's move towards narrower giving-semantics. On the other hand, the prototypicality of transfer-senses in the Old and Middle English DOC could itself lead to a reduction in non-transfer verb-classes, and in turn trigger changes to the *to*-POC, driving it to further expand in contexts. Although changes in this regar are visible in Middle English, it is clear that this process of mutual adaptation between the DOC and the *to*-POC, with changes in the semantics of the one triggering changes in the other and vice versa, was not complete by the end of Middle English, but is still ongoing today. More precisely, the relationship between the allostructions is continuously becoming tighter. At the same time, uses that are further removed from the core meaning of transfer,

[259]It is clear from PDE data that the association is in fact not categorical, but involves a range of irregularities and exceptions; nevertheless, there are good reasons to assume that the relationship between the patterns constitutes a more systematic and conspicuous phenomenon than mere partial semantic overlap. In other words, the constructions are taken to constitute 'allonyms' instead of only partial synonyms in PDE (cf. also above).

but have for some reason survived until today, continue to become marginalised from the DOC. The latter is, for example, seen with the verbs of *forgive* and *envy*, whose use in the DOC has been decreasing recently. As proposed above, it therefore seems plausible to assume a cline of prototypicality of verb classes (or verb-class specific constructions) in respect to the basic transfer meaning of the DOC, which corresponds to the temporal sequence of uses being lost.

To conclude, the semantic narrowing of the DOC can therefore be regarded as causally related to the emergence and expansion of the *to*-POC. This functional approximation of the patterns crucially serves as evidence for the assumption of a strong connection between them. That is, I adduce the fact that the DOC saw a semantic specialisation over time as evidence of one of the central proposals of this thesis, which is that the DOC and the *to*-POC have come to form a tight network, in which they are linked to each other and also to a more abstract constructeme. In this replicator-plex, the constructions express more or less the same thing, and stabilise and adapt to each other rather than standing in competition. Importantly, this relationship does not constitute a mere coincidental overlap in the semantics of the constructions, but represents the outcome of a development reflecting the psychological reality of an association in the minds of speakers. This apparently made them first avoid the use of verbs in either of the two constructions unless they could also appear in the other. Later, however, it came to license the use of verbs that appeared in one of the two constructions also in the other (cf. e.g. the use of *provide* in the DOC, or the rare, but attested use of verbs like *cost* or *refuse* in the *to*-POC).

What is particularly interesting about the proposal made in this section is, among other things, that it thus takes the semantic widening or extension in contexts seen in prepositional competitors in the history of English to have stood in a reciprocally causal relationship with the semantic narrowing of the DOC. This might then indicate that processes of grammatical constructionalisation in one part of a system can bring about lexical constructionalisation in closely related patterns and vice versa. Whether such mutualistic developments can also be found in other alternations or closely related constructions remains to be investigated.

6.2.2.3. Summary: the dative alternation as a case of constructional co-evolution

In sum, what this chapter has proposed is essentially that the history of the dative alternation was characterised by a variety of adaptive responses of two types – on the one side, the emergence of the alternation as such can be seen as the evolutionary result of changes in the environment of the two constructions involved, namely the DOC and the *to*-POC. That is, the establishment of the dative alternation represents an adaptive response to the decreasing salience of morphological case marking (itself caused by the large semantic overlap between constructions) and the increasing tightness of word order constraints. The fact that the two constructions became associated and

developed a relationship that was competitive at first and then became cooperative, however, also led to the constructions mutually adapting to each other in addition to adapting to their environment. (In fact, a link forming between the constructions means that they come to be part of their respective intra-systemic environments).

To illustrate this, consider the proposal that the increasing ambiguity of case inflections and their eventual loss triggered the increasing use of prepositional patterns and their increasing functional extension. The DOC 'reacting' to this change by moving towards more specialised semantics (in turn causing the POCs to extend even more, etc.) can then be viewed as confirmation for the assumption of an intimate relationship between the patterns, and accordingly for the existence of the dative alternation. In a similar way, I have posited that the loss of case marking and the ensuing need for disambiguation between the agent and recipient argument drove the DOC to a more rigid SVO order; this would then constitute an adaption of the DOC to environmental changes. The increasing fixation of SVO in the *to*-POC, in contrast, arguably constitutes an adaptive response of the prepositional pattern to the DOC, and therefore again corroborates the idea of a close and mutually adaptive relationship between the two. Finally, we have seen that word order changes which increasingly restricted PPs to clause-peripheral position could cause the POCs to become associated with certain discourse-pragmatic functions (such as +focus). This bias in placement, which translates into [TH-REC] order in ditransitive constructions, could then force the DOC to resort to the opposite order, suggesting again that the constructions adapted to each other. In this case, the development is even more conspicuous, since as I have proposed, the association between the patterns then enabled the (*to*-)POC to retain a certain flexibility in ordering: rather than becoming limited to PP-late order like other PP+NP-patterns, the *to*-POC maintained the option of having the PP in post-verbal position. I would claim that this is again a sign of the close relationship between the patterns, and of their mutually adapting to each other. That the constructions eventually come to settle on a complementary distribution concerning object orders (and accordingly, discourse-pragmatic function) is further support for this assumption. A similar complementary distribution can also be seen in passives, where the *to*-POC allows for the theme argument as the subject (*a book was given to Mary*), while the DOC is used with a recipient subject (*Mary was given a book*). The patterns furthermore seem to stand in a complementary relationship in regard to verb (and verb-class) preferences – while some verbs (e.g. *give, offer* or *tell*) appear to be biased towards DOC uses, others such as *bring* or *sell* have been shown to favour the *to*-POC in PDE (Gries & Stefanowitsch 2004).

In conclusion, I have argued here that the dative alternation was the consequence of system-wide changes to specific morpho-syntactic parameters in the history of English. The establishment of the close relationship that is the alternation in turn triggered its members to formally and

functionally adapt to each other, with the patterns either approximating each other or developing a complementary 'division of labour'-distribution.

6.2.3. Strategy competition in ditransitives: towards a mixed strategy

The preceding chapters have focussed mainly on competition (and cooperation) between different (higher-order as well as lower-order) constructions. However, following Steels (2007, 2010, 2011b, 2012c) in distinguishing between linguistic selection on the level of (sub-)systems and selection of language strategies, we can also approach the history of English ditransitives and argument structure constructions in general from the viewpoint of competition (and cooperation) between different strategic means. These strategies are, as stated above, taken to "emerge out of the collective activity of all individuals and [to be] not explicitly accessible nor represented" (Bleys & Steels 2011: 152). Nonetheless, they are subject to change via feedback loops on the communicative success of specific utterances instantiating language systems. For instance, drawing on the example of ditransitives in the diachrony of English, the selective fitness of the case-strategy appears to have changed when ambiguity between the individual case markers that formed the Old English/ Middle English system of case became too high to guarantee successful communication.[260] A tentative exploration of how the history of recipient marking in English could be modelled in terms of an evolutionary game between the strategies of case and PPs has been presented in Chapter (5.2.2) above.[261] It has furthermore been shown in this game theoretic approach that selection on the level of language strategies is guided by the same physiological-cognitive factors that also determine the success of constructions and sub-systems stored in the minds of speakers. Among these pressures are, for example, expressive adequacy or articulatory economy. Moreover, alignment between speakers plays an important role, meaning that changes in the grammar of individuals can spread through a population and eventually accumulate into innovations on the meta-level of emergent, collective linguistic strategies (or changes to existing strategies).

On this account, the diachronic development of argument structure strategies (and ditransitive strategies in particular) in the history of English can best be described as one of a change from a single, pure strategy towards a cooperation of various strategies, i.e. a stably mixed strategy system. Starting out in pre-Old English, we find a population that is characterised by using a predominant case strategy both for core semantic role marking/ argument structure expression (e.g. themes, recipients,

[260]Or, following the line of argumentation presented above, the case-strategy weakened in fitness when the semantic overlap between various case constructions led to case being perceived as redundant.
[261]The game-theoretic approach presented above can in fact be read as either commenting on strategy selection or on selection of sub-systems, i.e. constructions.

experiencers) as well as for non-core semantic roles such as temporal or location adjuncts.[262] In ditransitive events, the CASE-strategy is furthermore used for all discourse-pragmatic functions, meaning that both focused recipients and unfocused ones are maintained by CASE. With the emergence of prepositions and PPs, wich take over specific functions in the pre-OE language systems, a new strategy slowly establishes itself. While this PP-strategy is first restricted to competing against 'case' for non-core role marking, the extension of PPs into more and more contexts previously fulfilled by case only (including argument-marking) finally results in full-fledged competition between the case strategy (maintaining the case system of Old English) and the strategy for PP-use. At the same time, tendencies towards preferred word order choices are present in Old English; however, this does not necessarily imply that a 'fixed word order' strategy has been introduced to the system yet. Rather, we can assume with Möhlig-Falke (2012), Los (2015), and others, that OE employed a 'topic-focus' strategy for sentence structuring, which to some extent aided argument structure identification, and could therefore develop into an innovative strategy at some point. Even if a word order strategy had been added to the inventory of argument structure strategies in Old English already, it seems that the competition between WORD ORDER, PPs and CASE in this period was largely resolved in favour of the latter.[263] The greater success of CASE in Old English compared to the other strategies, reflected in the fact that a majority of semantic role types are exclusively associated with case constructions, can be attributed to its better overall performance in respect to factors such as economy, expressivity as well as possibly flexibility. For instance, case markers are typically shorter and thus more parsimonious than prepositions, similarly (although slightly less) semantically informative than PPs, and furthermore allow for more syntactic freedom than invariable word order (cf. chapter 5.2.2 on the 'recipient game' above; also e.g. Haspelmath 2006: 3; Hagège 2010: 29; Kittilä, Västi & Ylikoski 2011: 4).

A visual representation of Old English argument structure strategies is given in Figure 63, which shows that the system of core semantic role marking (e.g. marking of recipients, themes or causes/stimuli) is most clearly sustained by a case-strategy, despite also being associated with PPs and a fixed word order strategy at least to some extent. Although these strategies can be considered to compete against each other for the functions in question, it could also be argued that they have entered a state of stable, yet temporary, cooperation, with CASE constituting the dominant variant and PPs and WORD ORDER as the weak alternatives.

[262]The distinction between core and non-core semantic roles corresponds largely to the distinction between complements and adjuncts often made in the literature (cf. Huddleston & Pullum 2002: 224-228; Th. Hoffmann 2005, 2011). Although such a strict binary division is unwarranted for PDE (as also argued above), it can still be applied to PPs in earlier periods, at least to some extent.

[263]As has been shown above, the strategy of WORD ORDER can also be treated as part of the strategy environment of CASE and PPs. The establishment of a mixed strategy of CASE/NP + PP could then again be viewed as an evolutionary effect to changes to the environment of these strategies.

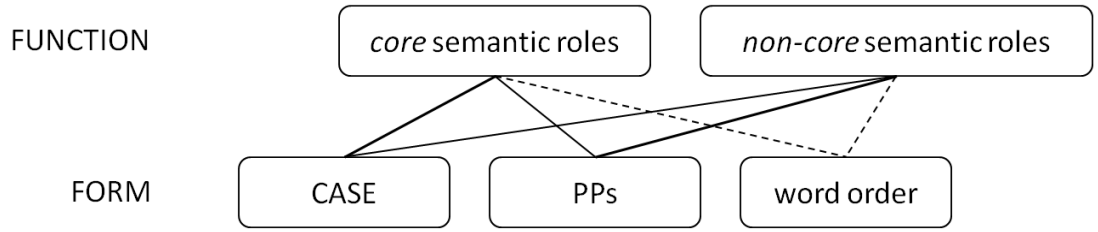

Figure 63 Degenerate system of semantic role marking strategies in Old English

As also indicated in the figure, in contrast to CASE being most successful in core semantic role marking (i.e. argument structure), with non-core semantic roles it is the prepositional strategy that wins out in Old English already. While case is therefore still used to mark e.g. adverbials of time, the prepositional competitors have turned out to be better apt for these functions. Quite possibly, this is due to their greater distinctiveness and their allowing for finer distinctions (e.g. *to* vs. *towards*), which is arguably more relevant in e.g. expressing spatial/temporal location or movement than in marking more abstract concepts. It should, however, be noted that the binary distinction between the functions of core and non-core semantic roles that is made in Figure 63 is somewhat arbitrary. Rather, what we could presume is a continuum of related functions (and systems) which are maintained by a range of strategies, with individual strategies performing more successfully in regard to some systems/functions than concerning others. This assumption would then correspond to van de Velde's (2014) degenerate systems approach to language, meaning that the same semantic distinctions can be expressed through different strategies in a many-to-many relationship (as shown in Figure 63; cf. also Edelman & Gally 2001; Whitacre 2010). In such systems, strategies can still be added and lost; however, even if the inventory of formal strategies remained the same, the links between function and form can change over time.

Such a move from one mixed strategy to another is precisely what we see in the history of English then, as with the increasing weakening of the case strategy towards the end of Old English, the make-up of the strategic system of semantic role marking changes, with the other strategies eventually entering into the stable equilibrium of cooperation that is still present in PDE. More specifically, the decreasing expressivity of case markers eventually leads to a decrease in fitness of the case strategy, or rather, the case strategy changes into an 'NP-only' strategy. In early Middle English then, the prepositional strategy competes most successfully against the others, since it is clearly fitter than the much less informative reduced CASE strategy (PP > CASE). Nevertheless, the greater parsimony of zero-marking is supposed to have been of advantage in certain contexts, for which reason the strategy manages to remain in the language rather than being ousted entirely by the prepositional strategy. As was seen above, PPs do take over in some cases (cf. e.g. verbs of dispossession or reverse transfer, verbs of cognition/emotion such as *wonder*, *yearn*). In other linguistic sub-systems, however, the strategies ultimately enter into a mutualistic relationship, where they stabilise each other instead of

competing. Often, this also includes cooperation with WORD ORDER. For instance, the greater economy of CASE/NP makes it a more suitable fit for certain discourse-pragmatic functions (such as marking REC [-focus] constituents). Together with the fact that PPs show a preference for clause-late position and are therefore more appropriate for non-focal elements (REC [+focus]). This can result in functional diversification, i.e. division of labour, between the strategies. That is, exposed to variable input produced by a mixed PP/NP strategy, some speakers/hearers might infer a rule/conditioning. If such "local disambiguation efforts undertaken by [variable] speakers [are then interpreted] as conventionalized", with larger and larger parts of the population aligning to each other in this respect, a mixed yet conditioned system can establish itself (Deo forthc.: 34). An evident case in point of an emergent mixed strategy is the system of ditransitive argument structure. Here, the strategies of PPs, case/NP and word order have come to cooperate to express the various facets of transfer-meanings. In other words, the systems of NP (DOC) and PPs (*to*-POC) maintained by the different strategies have come to build their respective, complementary niches via word order preferences.[264]

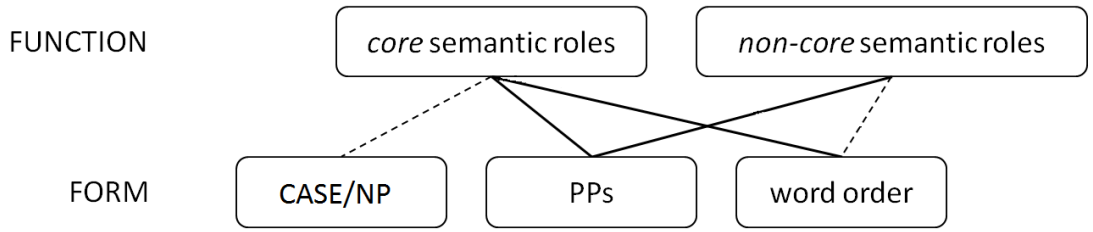

Figure 64 Degenerate system of semantic role marking strategies in Present Day English

To sum up, as also indicated by a comparison of Figure 63 and Figure 64, the history of English argument structure marking is characterised by various changes on the level of language strategies, with strategies both being innovated (PP) and lost (or fading considerably, as with CASE). Furthermore, there are adjustments in the links between functions and strategies. In some cases, this means the emergence of new links or the loss of others (e.g. [core semantic roles - CASE]). In other cases, existing links are strengthened or weakened (e.g. [core semantic roles - PPs]). In the course to PDE, we thus see the establishment of a stable, mixed strategy. In this symbiotic, cooperative relationship the strategies typically fulfil different, yet complementary functions. With ditransitives, this translates into the emergence of a paradigmatic distribution of DOC and *to*-POC.

6.2.4. A proposed scenario: round-up

By way of conclusion, this chapter has attempted to come up with a plausible scenario for the development of ditransitives in the history of English, and has approached this issue with a focus on competition and cooperation on different levels, including that of language (sub-)systems, i.e.

[264]The question whether the strategy maintaining the DOC is one of Ø-marking (and would therefore have to be included in the figure), or whether the DOC reflects the absence of a strategy is not addressed here.

constructional networks, and that of language strategies. Furthermore, I have proposed that causal effects between the changes involved can be seen in various stages of this development, often leading to a co-evolutionary, mutually adaptive relationship between the constructions concerned. More precisely, the dative alternation has been claimed to constitute an adaptive response to environmental changes, meaning that changes to the constructional/ strategic fitness landscape triggered the establishment of a close connection between the constructional means of DOC and *to*-POC, and in consequence, the strategies of CASE/NP and PP. With the patterns becoming associated to each other, and coming to be part of each other's systemic environment, i.e. with the patterns becoming horizontally linked in the constructional network, they are driven into competition and eventually cooperation. This in turn leads them to co-evolve and mutually adapt to each other, and the construction increasingly align to each other formally and functionally on the one hand, or develop a complementary distribution on the other hand.

The more specific scenario I have proposed here is the following: in Old English, we find different case constructions which are available to ditransitive verbs. Among these, the frame [DAT-ACC] is the most frequent and most productive one. This sub-type of the DOC is also the most semantically open frame, in expressing a range of different senses including transfer, dispossession, and attitudinal verbs. In general, the choice of case constructions appears to be to some extent semantically motivated in that the frames are roughly associated with certain meanings. However, there is also large semantic overlap between the case constructions, with individual frames instantiating several senses, and individual meanings typically relating to more than one frame. The schematic, more abstract DOC representing a generalisation over all case construction is thus semantically very underspecified, joining three case-marked NPs with a ditransitive predicate, and denoting an event in which an agent causes another participant to be affected by acting on a third party. Nonetheless, despite being associated with different more or less productive senses, the meaning of transfer is presumably quite strongly present also in the OE DOC.

Already in Old English, some of the verbs and verb classes connected with the DOC are also found in prepositional (case) constructions. Although there is thus some competition between the DOC and prepositional paraphrases at this point, it is clearly resolved in favour of the more synthetic construction. (On the level of strategies, CASE is therefore clearly the more successful one at this point). More precisely, the POCs at this stage are still restricted in their use, and are only found with certain verb classes such as dispossession (*take away*) or caused motion (*bring, send*). These POCs constitute early reanalyses of spatial prepositions in utterances with participants that are ambiguous between inanimate goals or sources and animate recipients or deprivees (and the like). Furthermore, the paraphrasable ditransitive verb classes at this point are typically not limited to one particular prepositional type, but rather appear with a range of semantically related POCs. For example, verbs of

bringing and sending are associated with several GOAL-type prepositions including *to*, *towards* and *till*, among others. As to word order preferences, both the DOC and the POCs in Old English are relatively flexible both concerning clause-level order and the order of the two object arguments. Nevertheless, some tendencies can be assumed: in general, SVO order is quite frequent due to differences in topicality of prototypical 'subject' and 'object' arguments. Furthermore, and quite importantly, PPs exhibit a bias towards clause-late or clause-peripheral position, possibly due to their common adjunctival function of 'afterthoughts', providing additional, optional information. In the DOC, both object orders are frequently attested in an almost equal distribution. However, [REC-TH] orders are slightly more prominent due to animacy and topicality asymmetries between the objects, which influence relative placement.

In late Old English or at the turn to early Middle English, several processes then take place. First, within the ditransitive case constructions there is a movement towards the most productive case frame of [DAT-ACC], with the other frames increasingly being lost. This move is paralleled with the prepositional competitors (*prep*DAT-ACC). The development is taken to be mainly caused by the unpredictability in variation concerning form (case frame and ditransitive verb) and function (ditransitive sub-sense), which invites reduction. Moreover, there is considerable formal as well as functional ambiguity between the individual case affixes, meaning that the system as a whole is unstable in involving competition on varying levels, and is therefore prone to change. With only one case construction left, and little formal distinction between the affixes maintained, the case markers are increasingly perceived as redundant, and are reduced even more. In sum, this results in the loss of case marking in general. For the POCs, this means the establishment of inflectionless patterns with a form [V NP-Ø *prep*NP-Ø]; for the DOC, this means the convergence of case frames into one larger double object construction involving two bare NP object arguments, and expressing a comparatively wide range of meaning relations. Distinguishing between the semantic roles of the objects is not severely complicated by this change since they are prototypically located on the opposed ends of the topicality cline – REC-arguments tend to be animate, given, definite, among other features, whereas themes are more often inanimate, new, indefinite, etc. However, the change does result in heightened potential ambiguity of the two similarly topical constituents of agent/subject and REC/indirect object. As has been argued above, this issue is resolved by a rapid increase in strict SVO ordering in the DOC in early Middle English, allowing the agent to be distinguished from the recipient on the basis of pre- versus post-verbal position. POCs interestingly retain a certain amount of flexibility throughout the period, despite the fact that they tend to favour SVO order to a greater extent than the DOC in the beginning. This preference might reflect the adjunctival origin of the PP-objects, making the POCs more dependent on changes in the transitive construction they inherit from. DOCs, by contrast, are possibly more independent in their behaviour.

A further outcome of the increasing loss of case marking, which is taken to be reinforced and mutually adaptive to the deflection process, is the increasing use of POCs in comparison to the bare DOC. In addition to increasing in frequency with those verb classes already paraphrased by PP-constructions in Old English, the prepositional patterns also extend analogically to new verbs and verb classes, which are more abstractly connected to spatial motion. It has been proposed here that this development represents a rather straightforward case of grammatical constructionalisation, with the individual prepositions acquiring more and more functions over time. The prepositions' expansion in the context of ditransitive role marking can furthermore be seen as part of a larger development, with prepositional constructions progressively moving from their adjunct-beginnings along a cline towards more procedural function (such as expressing obligatory complements in tight verb-preposition combinations like *rely+on*).

The competition between the DOC and POCs (corresponding to a weakened CASE-marking strategy and a PP-strategy on a meta-level of emergent collective behaviour) is resolved in crucially different ways in the course of Middle English: first, the most prototypical and most frequent verb-class specific constructions of transfer and transfer-related senses increasingly enter competition with GOAL-type prepositions. Within this group, the most productive and frequent one is *to*, which besides being the most economical, is also sufficiently expressive and thus constitutes the best 'maximal gain-minimal cost' variant. Although the *to*-POC initially surpasses the DOC, i.e. although there is a temporary phase of competition which is settled in favour of the prepositional periphrasis, the constructions eventually develop a cooperative relationship. In this relationship, they stabilise each other and mutually benefit from the replication of the other. The existence of such a symbiotic relationship in PDE is confirmed or at least strongly supported by evidence from cross-constructional priming and alternation-based productivity effects of the members of the dative alternation. The establishment of a paradigmatic link between the DOC and the *to*-POC, with the former as the strong variant, and the latter as the weak option in PDE, can be conceptualised as a strengthening of horizontal links between the two constructions in the network. Moreover, I have argued that it can be seen in the emergence of a ditransitive constructeme in the sense of Cappelle (2006) and Perek (2015), meaning that the two formally distinct constructions are both associated with a formally underspecified generalisation. Rather than representing synonyms, the DOC and the *to*-POC have therefore come to form allonyms (or allostructions). Instead of continuing to compete for the same function, they have diverged functionally, and have formed their respective complementary niches. That is, as shown in a large variety of studies on the PDE alternation, the allostructions have developed differences in regard to discourse-pragmatic functions such as topicality of the recipient or theme, and thereby constitute a prime case of constructional division of labour in a cooperative, mutualistic relationship. Importantly, this differentiation in contexts correlates with differences in object ordering.

While the DOC early on develops a tendency for [REC-TH] order as a response to the [TH-REC] order preferred by PP-constructions already in Old English, the POCs (and especially the *to*-POC) again interestingly remain flexible to a certain extent. (This is possibly due to the increasingly close connection with the DOC, which drives the constructions to formally align as well). Eventually, however, with the establishment of the alternation, the *to*-POC settles on the complementary order from the DOC, i.e. develops a canonical order of [TH-REC] in contrast to the (near-)categorical [REC-TH] order of the DOC in PDE. On the clausal level, on the other hand, the constructions appear to move closer to each other, as the rapid increase in SVO orders in the synthetic pattern is followed by a more fixed SVO order in the *to*-POC in comparison to other POCs. This is taken as a clear indication of a co-evolutionary behaviour of the constructions, with one aligning itself to changes in the other.[265]

The increasingly stronger association of the DOC and the *to*-POC can also be related to changes visible in the semantics of the DOC: I have here proposed that through this stronger and stronger link between the two patterns, uses that cannot be paraphrased by this particular POC due to their unsuitable semantics are increasingly marginalised from the DOC, and are eventually lost altogether. For instance, verbs of dispossession, which instantiate a sense of 'taking away' and therefore involve a SOURCE-meaning, are almost diametrically opposed to the GOAL-semantics of *to*. Accordingly, they do not fit with the close relationship that is developing between the two constructions, and become more and more peripheral to the DOC. With the loss of sub-types that are only remotely connected to a movement towards a goal, the meaning of the DOC is increasingly narrowed to basic giving-semantics. This process of constructional semantic specialisation, in which the prototypical meaning of successful transfer to a willing recipient is progressively foregrounded at the expense of other senses is thought to be still ongoing in PDE. For example, marginal uses such as verbs of refusal or mental/attitudinal verbs such as *forgive* or *envy*, which are also markedly awkward in the *to*-POC might fall out of use of the DOC at some point in the future.

As to the fate of the ousted verb classes, they usually resort to the prepositional competitors. Their pathway is therefore one of competition resolved in favour of one construction rather than emerging cooperation. A good case in point is that of verbs of dispossession: these verbs more and more frequently occur in POCs with *from* or *of* rather than the DOC, until the prepositional uses become entirely categorical (after Middle English, but before the 18th century). Regarding word order, it appears that the looser connection to the DOC is reflected in that the clear preference for [TH-REC], i.e. PP-late, order is maintained throughout the period, and becomes almost obligatory towards the end. This situation is still found in PDE; what is quite remarkable, though, is that this POC-construction

[265]The establishment of the benefactive alternation, that is, verbs of creation being paraphrased by a *for*-POC cannot be traced in the data investigated in this thesis, but seems to have taken place only at a later stage, possibly due to the slight mismatch in meaning between the *to*-POC and the verbs involved.

has seemingly likewise entered a cooperative relationship with the prepositional theme construction, allowing verbs of dispossession to choose between two syntactic structures according to event construal (cf. *John stole money from Mary* vs. *John robbed Mary of money*).

A slightly different case is presented by the group of verbs of pure benefaction and malefaction. While these verbs similarly disappear from the DOC in the course of Middle English and similarly show an increase in relative frequency of POCs, only the former come to be restricted to POCs (including *for*). The latter, however, are not found in POCs either anymore in PDE, but have eventually chosen a still different strategy (namely that of the possessive genitive; cf. *John broke Mary's nose*).

A third pathway taken by some minor verb classes is continuity, or rather, reinforcement of OE tendencies. This has been illustrated above by the group of reversed transfer verbs as well as mental/attitudinal complex predicates (such as *have envy/love towards/for so*.). These verbs exhibit a strong bias towards POCs in Old English already (or might even have been used exclusively in the prepositional patterns at this point), and after a short-term expansion to DOC usage, move back to categorical POC-use. Contrary to the other two groups, the variation in prepositional types found in Old and Middle English is not reduced in this case, but different POC types are still used today, with some verb-specific preferences showing, but no generalisations over semantic sub-senses associated with specific prepositions. A strikingly different issue presents itself with verbs of reversed communicated transfer and verbs of ballistic motion. As to the first of these, patterns such as 'ask so. their name' continue to be used in the DOC despite their opposing semantics, which might be explained by their close link to the DOC sub-construction of communication, analogically coercing them into the DOC. Verbs of ballistic motion, by contrast, have apparently been slowly coerced into the dative alternation, since despite their quite basic spatial semantics and long confinement to POCs, they are now increasingly found in the DOC.

In sum, the history of ditransitives in English therefore really presents a highly fascinating illustration of how competition can be resolved both on the level of systems or constructions as well as language strategies. Concerning the latter, the diachrony of English has seen a move away from a single, pure strategy of CASE towards an intricate system of a mixed strategy, in which semantic roles are variably indicated by prepositional markers or zero-marking, combined with fixed word order. In this stable state of mixed strategy, or strategy cooperation, the different formal means have typically come to be used for different yet related functions on various levels of specificity or generality, corresponding to (or indeed shaped by) pathways of competition resolution in the respective constructional networks. Furthermore, the history of the dative alternation constitutes a compelling case of co-evolution of linguistic units, in that the emergence of the alternation as such can be regarded as an evolutionary effect of system-wide changes, i.e. changes to the environment of the constructions. Importantly, such adaptations to the changing fitness landscape then also led to the

constructions adapting to each other, indicating that they have come to be intimately connected over time. In this close relationship, changes to one of the members of the alternation inevitably produce an adaptive response in the other member.

7. Conclusion

7.1. The dative alternation in Middle English

The main question this thesis has attempted to answer is how the PDE dative alternation came about in the history of English, and how it can be modelled in an innovative framework of evolutionary construction grammar. The link between the more synthetic double object construction (DOC) and the more analytic, prepositional pattern involving *to* (*to*-POC) easily qualifies as "one of the most extensively studied alternations in the grammar of English" (Wolk et al. 2013: 385). While its PDE properties have been subject to quite some debate, the history of the alternation is equally complex and intriguing, but has received considerably less attention so far. One reason why the history of the dative alternation is so special is that its development reflects most of the major and most pervasive changes the English language went through between Old English and PDE, including the collapse of the morphological case marking system and the concomitant rise of prepositional paraphrases, as well as the fixation of word order. This means that dealing with ditransitive constructions in the history of English also means revisiting issues which have occupied linguists for a long time, and which are therefore certainly highly interesting. By investigating the effect of these broader changes on the constructions involved, I have aimed to provide a historical explanation for the synchronic phenomenon of the dative alternation and for its conspicuous features.

7.1.1. Synopsis of the thesis

In order to address the main research questions of this thesis, namely when, how and why the dative alternation emerged in the history of English, and how to conceptualise this development in a joing framework of evolutionary linguistics and construction grammar, the following steps have been taken in this thesis:

First, some major issues in constructionist approaches to ditransitives in Present Day English have been introduced. More specifically, the question of how the constructions in question, i.e. the DOC and the *to*-POC (and, to a lesser extent, the *for*-POC) as well as their formal and functional features are treated in this framework, has been outlined. Most importantly, the first chapter has seen a discussion of argument structure alternations in usage-based construction grammar. The main conclusions to be drawn in this regard have been that the DOC and the *to*-POC both encode a basic meaning of transfer, and are thus roughly synonymous. This synonymy has led to their being perceived as closely related, meaning that they are strongly connected via horizontal links in the constructional network, and are even linked to a higher-order generalisation. This abstraction specifies only those formal and functional features that are common to both of the constructions. Essentially, the dative alternation is therefore viewed as more than a mere epiphenomenon of a partial overlap in verbs instantiating the

constructions. Instead, the dative alternation receives an independent theoretical standing, and is thought to be represented in the minds of speakers as such. This assumption is supported by a number of experimental studies. Furthermore, the constructions can be shown to exhibit effects of 'alternation-based productivity' – this means that the use of a verb in one construction typically increases the likelihood of it also being used in the other construction. Importantly, the members of the dative alternation therefore seem to stabilise each other rather than competing against each other.

In a second step, the history of the dative alternation has been reviewed, and the major changes that took place in the history of English and which affected the constructions in question have been reported on. This included a discussion of the demise of the morphological case marking system at the transition from Old to Middle English, of the rise of prepositional patterns to contexts previously exclusively expressed by synthetic patterns, and of the increase in word order rigidity around the same time. The latter issue concerns not only word order on the clausal level, but importantly also the order of objects of ditransitive verbs, which became progressively more fixed in the history of English. Moreover, changes in the semantics of the DOC have been dealt with, since this construction reportedly saw a considerable reduction in the range of verb classes associated with it over time. This is taken to represent a narrowing of the construction's semantics. Finally, I have briefly discussed previous suggestions on correlations and causal relationships between the individual changes, as they have frequently been taken to be connected in various ways.

The hypotheses gleaned from this overview have then been approached empirically in a two-fold way, i.e. by means of two different methodologies, namely a large-scale analysis of corpus data on the one hand, and an evolutionary game theoretic model on the other hand.

As to the first of these, the thesis is based on an extensive corpus study of Middle English texts, more precisely an investigation of the *Penn-Helsinki Parsed Corpus of Middle English* (PPCME2). This corpus study entailed the extraction, classification and analysis of all tokens of the DOC, i.e. sequences of two NP-objects, as well as all instances of prepositional alternatives. Crucially, the latter were not restricted to constructions with *to*, but included all kinds of prepositions able to paraphrase a double object construction. While *to*-POCs did make up a large part of this prepositional database, periphrases involving e.g. *from*, *of* or *for* were therefore incorporated as well. The combined tokens were analysed according to their morphological properties (case marking salience), syntactic features (word order on the clause level and concerning object order), as well as semantic characteristics (verb classes such as transfer, dispossession, or mental/attitudinal, etc.). The inclusion of non-prototypical patterns, meaning that patterns other than the typically focussed on DOC case frames and to-prepositional patterns were investigated as well, constitutes a crucial difference of this thesis to previous studies on the history of ditransitives in the history of English, and counts as one of its major merits. The results gained by said analysis have been used as the basis for discussing ditransitives in Middle English. Since

the main aim of this thesis has been on devising a plausible scenario for the evolution of the constructions in question, and most importantly, the emergence of the dative alternation, a particular focus was here given to diachronic changes within (and beyond) the Middle English period.

The application of a second method of evolutionary game theory follows from the second main framework this study has used, that is, evolutionary linguistics. This framework has been introduced in the fifth chapter of the thesis, with a focus on the question how and why language should or can be considered an evolutionary system. I have concluded that language indeed has to be approached from an evolutionary perspective since it fulfils all of the necessary criteria for replicator systems. Language use involves units that replicate, i.e. are transmitted and shared between minds of speakers; they involve variation, as new constructions etc. are continuously generated by copying errors in the transmission process. Crucially, language use is also characterised by differential replication, meaning that some variants are able to replicate more successfully than others. The success of linguistic variants is determined by a variety of factors, most importantly cognitive-physiological ones, social pressures, and intra-systemic factors. Depending on how well individual variants fare with regard to these factors, they will either oust their competitors, lose against them, or come to construct their respective niches, and form a cooperative relationship with other variants. I have argued that taking such an evolutionary perspective, in which competition between variants and frequency of occurrence (success in replication) play a key role, is particularly suitable for investigating the history of the dative alternation.

Evolutionary game theory has then been used to model the development of competing strategies for argument marking, paralleling different stages in the development of the English language. The main aim in employing an evolutionary game theoretic approach in this study has been to test the assumption that under universal pragmatic constraints such as the focus-last principle, changes in system-internal constraints (such as the decrease of case marking indicativeness and an increase in word order rigidity) competition between constructions (e.g. the members of the dative alternation) can lead to mutualistic cooperation. Furthermore, by including this tool, I hope to have demonstrated that methodologies from other disciplines can be used to assess hypotheses about historical language change. In general, taking an evolutionary game theoretic approach, and connected to this, working within an evolutionary linguistic framework, has allowed us to view the history of the English dative alternation from a new perspective.

On the basis of the results of these two empirical analyses, and on the basis of the ideas presented in the various chapters, the final part of the thesis has put forward a scenario for the development of ditransitives in English which centres around the concepts of constructionalisation (the emergence of variation in the system), competition (and competition resolution), as well as cooperation and co-evolution. The main proposals and arguments offered are briefly summarised in the following.

7.1.2. Main results and proposed scenario for the rise of the dative alternation

In brief, the narrative that has been suggested for the development of the dative alternation in English on the basis of the empirical analyses is the following: in Old English, there are different case constructions for ditransitive verbs, which eventually collapse into one main case frame due to their large semantic overlap. At the turn to Middle English, case marking is then lost altogether, as a result of the redundancy of a single case pattern, as well as increasing phonetic erosion. The result of these developments is the Middle English DOC, a sequence of case-less noun phrase objects, which expresses a relatively abstract notion of indirect affectedness. Prepositional paraphrases, on the other hand, are also already available in Old English, but are not yet used with all verb classes at this point, and generally seem to be still restricted in a number of aspects. This changes in late Old English/ early Middle English, possibly instigated by the increasing demise of case marking – in an initial stage, POCs extend to more and more functions, i.e. verb classes, see an overall increase, and even surpass the DOC for some time. The later development of the POCs is, however, strikingly dependent on the verb classes (or rather, verb-class specific constructions) involved. With certain verbs, e.g. verbs of dispossession or verbs of pure benefaction, POCs clearly win out over the course of the Middle English period, corresponding to their ousting from the DOC. While there is considerable variation in PP-types in these cases in the beginning, the verb classes eventually settle for a particular kind, meaning that variation is reduced.

A different development can be observed in the case of transfer- and transfer-related verb classes (such as communication or intended, future transfer) – here, we see a reversal of the trend for more POC use during Middle English, with DOCs in fact taking over again towards the end. Although there is a similar tendency for POC-variation in the initial phase, with time the *to*-POC emerges as **the** analytic equivalent to the transfer-DOC. This then lays the ground for the establishment of the dative alternation as we find it in PDE; with the range of verb classes associated with the DOC being reduced to those of transfer-like senses, the association between the two patterns becomes progressively tighter, and they come to constitute allostructions or paradigmatic variants of each other. As discussed above, this link can be conceptualised as a generalisation (constructeme) over formally distinct, yet semantically similar constructions.

Last, there is a group of somewhat miscellaneous uses which do not follow either the one or the other pathway in a clear manner: for instance, complex predicates of attitude/emotion or verbs of reverse transfer are more frequently found in POCs in Old English already, and do not change significantly except for entirely ousting DOC uses eventually. In PDE, these verbs are then exclusively associated with prepositional constructions. What unites this group is their non-conformity to the

behaviour of the other verb classes in PDE. This includes their not having becoming restricted to one particular preposition (at least not on a more systematic level).

As to word order changes in the diachrony of ditransitives, I have shown that the overall increase in SVO orders is paralleled in both patterns, but is slightly more advanced in the DOC, possibly due to ambiguity issues after case loss. In respect to object ordering, PPs tend to prefer clause-late (i.e. recipient-second) position from early on, which forces the DOC to more frequently choose recipient-first order; although there is some competition for orders during the period, these are also the orders which become canonical for the respective constructions.

7.1.3. Main arguments: competition, cooperation, co-evolution

One of the main arguments that this thesis has put forward is that the history of ditransitives in English essentially constitutes a story of **competition** and **cooperation** on various levels. Among other things, we see competition between case constructions in Old English and between the DOC and POCs in early Middle English, as well as between different POC-types who 'fight' for the same function. Also, the various lower-level constructions specifying object order in the DOC and POCs compete against each other. While in some cases, such competition has been resolved in favour of one of the variants, in other cases complementary niches have been formed. The most striking example of the latter development is the establishment of the dative alternation – that is, the key point of this thesis has been that to show that the members of the PDE dative alternation have come to form a cooperative, mutualistic relationship over the course of time. In this symbiotic, paradigmatic association, the patterns stabilise each other and positively impact their respective productivity rather than contesting against each other for expression.

Furthermore, the history of ditransitives in English can be described as a tale of competing selectional pressures, most importantly those of expressivity and economy. While the prepositional, analytic competitors would seem to be more successful in regard to the former, the more synthetic double object construction is preferred in respect to the latter. As will be pointed out below, it is one of the main benefits of taking an evolutionary linguistic approach to language that it allows us to assess the various types of factors influencing the replicative success of one variant over another in a more systematic and transparent way. Also, the influence of such factors can readily be tested by the innovative methodologies evolutionary linguistic approaches frequently draw on (cf. e.g. agent-based modelling investigations of reductions in case marking systems; van Trijp 2013).

I have also argued that the diachronic development of the constructions involved is importantly characterised by **co-evolution**. This means that the ditransitive allostructions, the DOC and the *to*-POC, have come to stand in a mutually adaptive relationship to each other, in which changes in one pattern will inevitably be followed by changes in the other. This also entails that there is typically no simple

one-directional causal influence of one discrete, large-scale change on another, but that causal effects are two-way, step-wise, and gradual developments, with many small adaptations on both sides. Most interestingly, such a mutually adaptive development can be seen in regard to the semantics of the DOC: through its increasingly close association with the most frequent (and most suitable) of the prepositional paraphrases, namely the *to*-POC, the construction undergoes a process of semantic specialisation, coming to denote a basic meaning of transfer rather than indirect affection, and losing a range of sub-senses such as 'dispossession'. At the same time, the narrowing of the semantics of the DOC can be seen as responsible for the stronger and stronger link between this pattern and the *to*-POC in the first place, indicating that the two developments impacted each other. A similar development can be observed in regard to word order: with the increasingly intimate link between the constructions, they align to each other in clause-level word order, but formally and functionally diverge in respect to object order. The final outcome of this is the complementary distribution of DOC and *to*-POC according to discourse-functional factors in PDE, reflected in their word order preferences (DOC: topical recipient followed by theme [REC-TH]; *to*-POC: topical TH followed by *to*-REC).

Most interestingly, the emergence of the dative alternation as such can be argued to constitute an evolutionary effect of or adaptive response to system-wide, environmental changes: the loss of case marking and the increasing fixation of word order resulted in the closer and closer association between the constructions. That is, under certain conditions (such as universal principles like that of end-focus), two constructional means (or strategies) can come to enter into an intimate relationship, in which they share the workload. Once such a link has been established, the patterns begin to co-evolve. Having come to be part of their respective systemic environments, they therefore adapt to each other, and react to changes in the respective other.

7.2. Theoretical implications

A more theoretically focussed aim of this thesis has been to discuss the potential benefits of approaching language change in general, and the development of ditransitives in particular, from the joint viewpoint of construction grammar and evolutionary linguistics. Concerning construction grammar, the precise approach chosen here was usage-based, cognitive construction grammar, in which language is seen as crucially shaped by language use and frequency in use in a bottom-up way. In respect to evolutionary linguistics, the particular assumptions I have worked on are that linguistic replicators are competence constituents rather than utterances, that variation is generated in a random way rather than being guided by functional factors, and that selection is driven by cognitive-physiological, social and intra-systemic factors. Importantly, language change in this framework is always frequency change, meaning that the strong focus on frequency in use in usage-based construction grammar finds its parallel here.

Integrating the two approaches, a number of decisions had to be made – most importantly, evolutionary replicators are taken to correspond (or indeed be) constructions rather than either form or meaning. Furthermore, the present thesis has mainly focussed on replicators as cognitive patterns (i-replicators) rather than concrete utterances, while at the same time acknowledging that replication inevitably involves actual expression, and that mental constituents are fundamentally influenced by the communicative success of their external manifestations. In regard to the different degrees of schematicity that define constructions in a network, I have assumed that replication essentially takes place only at the very lowest level. Nevertheless, more abstract constructions constitute replicators as well in that they are activated in a bottom-up fashion every time an associated construct/micro-construction is used. A potentially problematic issue is posed by the concept of constructionalisation in e.g. Traugott & Trousdale's (2013) diachronic construction grammar. As discussed above, there is a clash here in that a new construction is only assumed to emerge when both form and meaning of an older construction change, whereas in an evolutionary approach, any change to an existing replicators will result in a new variant which competes against the resident one. Since competition plays an integral part in the scenario proposed in this thesis, the latter assumption was followed in the end. However, this matter is clearly still in need of further discussion.

As to the benefits gained by proposing a merged account of construction grammar and evolutionary linguistics, the former framework was thought to be especially useful in that it lets us describe language phenomena in terms of clearly defined linguistic elements, i.e. form-meaning pairings. That is, construction grammar can provide a rich inventory of terminology and tools to analyse linguistic elements as well as language change, shaped by a comparatively long and unified research tradition. Furthermore, the network approach to language, which is crucial to construction grammar and which allows for constructions to be linked without one having to be a transformation of the other as in generative accounts, matches with the evolutionary linguistic focus on competition between 'related' variants. Also, as already mentioned, both usage-based construction grammar and evolutionary linguistics take frequency to play a fundamental part in language use and change; they are thus entirely compatible in this point. Last, the amount of psycho- and neuro-linguistic research compatible with constructionist, usage-based approaches that has gone into determining and detailing the cognitive factors influencing domain-general and linguistic processes is a clear benefit of using this particular framework, since evolutionary linguistics represents a meta-framework rather than a more concrete language-theoretic approach, subsuming a large variety of different views on language.

In contrast to construction grammar, which was therefore used as a heuristic tool for description and analysis as well as to some extent for its theoretical underpinnings, evolutionary linguistics offers a means for explaining why certain patterns are present in a language. Assuming that they are there because they have been successful in being transmitted over time, the reasons for their success can

then be assessed in a much more analytic (rather than hermeneutic) way. This adds to the explanatory value of evolutionary linguistics as a framework and constitutes its major advantage over other approaches. Furthermore, a distinct benefit of taking an evolutionary perspective is that it enables us to focus on the development of individual constructions or replicators without disregarding the constructional context of these patterns. In other words, surrounding, related constructions can be taken into account as part of the selective environment which determines the fitness of specific replicators. That way, constructions are not dealt with in isolation, but at the same time, we are to some extent saved from dealing with the complexity that is inherent to all language change. For instance, the success of double object constructions clearly depends on a variety of issues including the salience of case marking. Rather than attempting to account for the loss of case marking in general and treating the development of the DOC as part of this larger change, however, such an approach allows us to assess the selective fitness of the DOC against the background of systemic, larger-scale changes at play. Also, by drawing on concepts well-known from biology such as co-evolution and mutualism/cooperation, the interdependency of constructions and changes affecting them can be approached in a potentially more enlightening way.

An additional advantage in taking an evolutionary approach lies in the distinction between language systems and language strategies as put forward by Steels (e.g. 2007). While the former would correspond to (parts of) the constructional network as usually dealt with, the latter refers to strategies emerging from the collective behaviour of a speaker population without a cognitive basis. Like constructional variants, strategies are subject to linguistic selection as well, are influenced by the same factors, and are furthermore influenced by changes on the level of systems. Including this distinction in treatments of historical language change e.g. in English is interesting for two reasons: first, larger-scale changes such as the loss of case marking or the rise of prepositional patterns, potentially triggered by accumulations of smaller changes in the systems and spread through alignment in a population, can be addressed more realistically, without positing highly abstract strategy-like constructions in the minds of individual speakers. Second, even though not applied in the present study, adding a level of analysis by drawing on the concept of language strategies is useful for typological studies in that the strategies employed can be compared without having to concern oneself with the particular features of the systems maintained by the strategies.

Lastly, the benefit of evolutionary linguistics in introducing innovative tools and methodologies to historical linguistics was demonstrated in this study by a game theoretic approach to certain issues in the history of ditransitives in English. The exploration of new tools constitutes one of the main merits of the present thesis. Another is its innovative theoretical approach to issues in language change, and in particular to the diachrony of ditransitives in English in combining construction grammar and evolutionary linguistics. In regard to more concrete results on the specific issue of ditransitives, this

study has proven to be more encompassing and therefore hopefully also more insightful than what has been presented so far. More precisely, by incorporating non-prototypical case frames and the entire range of prepositional paraphrases instead of focussing on the *to*-POC, as well as paying attention to word order changes in the whole clause, the present thesis has aimed to provide a more conclusive picture of the processes at play in the history of the dative alternation. Thus, the main contributions of this thesis are its innovative theoretical approach, its use of innovative methodologies in addition to more established ones, by which it has provided a new perspective on the development of the dative alternation in English. Nonetheless, there have also been several limitations to the thesis, which could be remedied in future research. These are briefly discussed in the following section.

7.3. Open issues and possible directions for further research

There is two basic areas where I see a clear need for further research concerning the topics brought up in this thesis; the first is of a more methodological nature, while the second relates to theoretical implications and a need for further refinement.

As to the former, although I believe that this thesis has managed to yield some insights into the as yet somewhat understudied history of ditransitives in English, it is evident that a number of issues have been dealt with in a rather speculative manner. First of all, what has become clear is that even though Middle English certainly represents an important and highly remarkable period in the development of the structures in question, the changes within this time span cannot be adequately discussed without looking more closely at Old English. This is especially so because many of the changes visible in Middle English can be assumed to have started well before that period, or are at least highly dependent on the earlier situation. Most problematic in this regard is quite obviously the issue of case marking, which I have not been able to address properly in this thesis due to the early Middle English data already being highly ambiguous. In order to arrive at a more comprehensive picture, Old English data would therefore certainly need to be investigated as well. While this is not to say that empirical information on Old English ditransitives is missing at all (quite the contrary, cf. especially De Cuypere's contributions, as well as Visser's and Mitchell's less recent but still useful examinations), a number of aspects of particular relevance to the present study are still awaiting adequate analysis. Above all, this concerns less prototypical ditransitive case frames such as [ACC-ACC] or [DAT-GEN], whose frequency distribution would of great interest. Correspondingly, the distribution and precise formal and functional features of prepositional competitors **not** involving *to*, e.g. *from*- or *of*-paraphrases of dispossession-DOCs in Old English certainly requires more attention. Moreover, exploring the question of word order on the clause level in ditransitive constructions in OE would allow us to draw more convincing conclusions about the development of these patterns in Middle English and beyond – for instance, the position of prepositional phrases in Old English clauses and potential

differences in the placement of various types of PPs is evidently relevant for the assumptions made in this thesis.

At the same time, it has been seen in the discussion above that several changes appear to have been only in progress, but far from completion during Middle English, meaning that an expansion of this research to cover Early Modern English or even later stages of the language might be beneficial. A special case in point is the establishment of the benefactive alternation, which is remarkably absent from Middle English, but definitely present in PDE – the emergence of this association is therefore likely located at some point in Modern English. An investigation of this issue could then possibly also help to unearth the reasons for this split in alternations, i.e. the fact that verbs of creation pattern together with a different (non-*to*) POC despite still being used in the DOC. Furthermore, the later development of PDE 'odd' DOC uses such as verbs of refusal, verbs of communicated transfer, or attitudinal verbs like *envy* and *forgive* would deserve attention as well.

Regardless of specific period, or even if we stick to Middle English, I think that a more encompassing investigation of the network of ditransitive patterns is needed, and would surely yield new insights. That is, following the assumption that constructions do not exist in isolation, but are always connected to a whole range of other constructions, I would certainly support a survey including all kinds of three-place predicate structures. An approach that goes in this direction has been taken by Mukherjee (2005) for PDE ditransitives – instead of taking into account only DOCs with two overtly expressed NP-objects and *to*-POCs, he in fact looks at occurrences of ditransitive verbs in all possible sub-types of ditransitive complementation. This then includes passives, constructions with covert or clausal objects, as well as prepositional REC-patterns. However, Mukherjee's results are deliberately restricted to verbs which are attested in the basic DOC pattern (as was also done in the present study), as a result of which semantically quite prototypically ditransitive verbs such as *donate* or *explain* are excluded from the investigation due to their strict bias towards the *to*-POC (cf. Mukherjee 2005: 12). As has been seen, limiting the data in this way prevents e.g. the detection of possible productivity asymmetries between different constructions (e.g. the DOC and the *to*-POC; cf. Perek 2015). Furthermore, prepositional theme constructions such as *John told Mary about the secret* are not considered as "variant pattern[s] of the ditransitive verb TELL" in Mukherjee (2005: 126). In contrast, the approach advocated here would include all such variants, in order to be able to get a fuller picture of constructional competition in the case of ditransitives (in the widest sense of the term). Such an inclusive account would then hopefully also enable us to address issues such as the development of malefactive verbs, which seem to have moved from the DOC to other means of expression, most prominently possessive phrases (*John broke Mary's shoulder*). Finally, incorporating passives would clearly be important especially in regard to word order discussions; an issue closely related to that of impersonal or experiencer constructions, it could possibly shed new light on the question of the

emergence of prototypical 'subject' and 'object' slots/categories in the history of English (cf. Allen 1995).

A similarly potentially very rewarding endeavour, although not confined to ditransitives, would be a closer investigation of the matter of competition between synthetic and analytic (prepositional) constructions in the history of English; more specifically, it appears that the diachrony of prepositional phrases and their increasing grammaticalisation has not been dealt with empirically in more detail (except for the case of prepositional and phrasal verbs). Considering that PP-complements of various types constitute an integral part of the PDE language, such an undertaking would certainly be beneficial.

Last, what has been more or less completely ignored in this thesis is the influence of language contact on the various changes in question. While I would claim that the development of ditransitives in English can plausibly be explained by drawing on internal factors only, it can nevertheless not be denied that impact from Scandinavian or French might have played a role – even if contact between English and other languages did not constitute the ultimate trigger of the changes observed, it is still (more than) possible that a reinforcing effect could have been produced by incoming vocabulary. A related matter is that of regional and social variation, which has only very superficially been addressed here; it is clear that much of what has been proposed in this thesis represents a simplification and generalisation over socio-linguistically very distinct situations, which a more fine-grained analysis could possibly detect. A good case in point is e.g. the retention of [TH-REC] orders in the DOC in some varieties of British English; since I have been largely concerned with change towards a standard, this issue (among others) has received little attention (but see Gerwin 2014).

Also concerning methodology, but less concerned with corpus data, a highly interesting future project would be to address the various issues brought up in this thesis by means of mathematical modelling (e.g. agent-based modelling or population dynamics) as well as other approaches typically associated with evolutionary linguistics, such as iterated-learning experiments (cf. e.g. Kirby & Hurford 2002). I expect that doing so could potentially increase our understanding of the processes at play in language use and change, in particular concerning competition and cooperation between linguistic elements. Furthermore, these methods could be used to test various assumptions about the influence of certain types of factors; this could help us to explain e.g. reduction processes in case marking systems (cf. e.g. van Trijp 2013).

On a more theoretical level, it is evident that a more in-depth discussion of what an integrated framework of construction grammar and evolutionary linguistics would entail is still needed. For example, the concepts of constructionalisation and grammaticalisation from an evolutionary viewpoint clearly have to be refined to quite some extent still. Tying in with this, I have not been able to discuss the role of various types of factors influencing the success of variants, as well as of domain-

general processes such as chunking or categorisation in adequate detail and with sufficient systematicity in this thesis. Nevertheless, I hope to have shown here that taking an evolutionary approach to language change can be of advantage to linguists. In general, I am optimistic that the present thesis has raised some interesting issues and has come forward with plausible and also fruitful suggestions despite its limitations. I look forward to cooperative (rather than competitive) discussions on the many questions that remain.

8. References

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9. Appendices

9.1. Appendix I: Abstract

The present thesis discusses the diachronic development of ditransitive verbs and their complementation patterns in the history of English, with a particular focus on the period of Middle English. More precisely, the study deals with a number of changes which affected the double object construction over time (including case loss, the rise of prepositional paraphrases and the fixation of word order), and resulted in what is today known as the 'dative alternation' (*John gave Mary a book* vs. *John gave a book to Mary*).

Methodologically, the thesis reports on a large-scale quantitative investigation of ditransitive tokens in the *Penn-Helsinki Parsed Corpus of Middle English*, which included not only double object constructions with two NP-objects and prepositional competitors with indirect objects marked by *to*, but importantly also looked at paraphrases involving other prepositions, such as *from* or *of*. On the basis of the results of an analysis of the relevant tokens in terms of morphological, syntactic and semantic criteria, a plausible scenario for the development of ditransitives in English is then proposed. The theoretical framework in which this proposal is grounded is an integrated approach of usage-based construction grammar *cum* evolutionary linguistics, which views form-meaning pairings as linguistic replicators subject to selective pressures.

The main argument that is put forward in the thesis is that in the history of English, a progressively close association between the double object construction and the *to*-construction forms, which in turn leads to the semantic specialisation of the former. The strong link between the constructions furthermore influences word order in the patterns, ultimately leading to a complementary distribution of the two constructions in regard to object order and discourse-pragmatic factors. This emergence of a 'division of labour' relationship of formally distinct patterns is crucially seen as a change from constructional competition to cooperation.

9.2. Appendix II: Kurzfassung

Die vorliegende Dissertation beschäftigt sich mit der diachronen Entwicklung von ditransitiven Verben und deren Komplementierungsmöglichkeiten in der Geschichte des Englischen, mit speziellem Fokus auf der Periode des Mittelenglischen. Hauptaugenmerk der Studie liegt auf mehreren Veränderungen (wie der Verlust der Kasusflexion, die zunehmende Häufigkeit von Präpositional-Paraphrasen oder die Fixierung der Worstellung), die die ‚double object'-Konstruktion im Laufe der Zeit beeinflussen, und schlussendlich zu der heutigen Dativ-Alternation führen (*John gave Mary a book* vs. *John gave a book to Mary*).

Methodologisch bezieht sich die Untersuchung auf eine quantitative Korpus-Studie von Ditransitiva im *Penn-Helsinki Parsed Corpus of Middle English*. Wichtig ist hierbei, dass nicht nur double object-Konstruktionen mit zwei NP-Objekten, und präpositionale Kompetitoren mit *to* inkludiert wurden, sondern auch Paraphrasen mit weiteren Präpositionen, wie z.B. *from* oder *of*. Auf der Basis der Resultate einer Analyse der relevanten Instanzen in Bezug auf morphologische, syntaktische und semantische Kriterien, wird ein plausibles Szenario für die Entwicklung der Ditransitive im Englischen postuliert. Der theoretische Ansatz in dem diese Diskussion stattfindet ist ein integrierter Zugang von gebrauchsbasierter Konstruktionsgrammatik und evolutionärer Linguistik, der Form-Funktions-Paare als linguistische Replikatoren ansieht, die Selektionsdruck unterliegen.

Das Hauptargument, das in dieser Dissertation vorgebracht wird, ist, dass sich in der Geschichte des Englischen eine zunehmend engere Assoziation zwischen der double object-Konstruktion und der *to*-Konstruktion herausbildet, die wiederum zu einer semantischen Spezialisierung der ersteren führt. Die starke Bindung zwischen den beiden Konstruktionen beeinflusst weiters die Wortstellung der Strukturen, und endet schließlich in einer komplementären Verteilung der Konstruktionen bezüglich Objektstellung und diskurs-pragmatischen Faktoren. Die Entstehung dieser ‚division of labour'-Beziehung zwischen formal unterschiedlichen Strukturen wird hier entscheidend als ein Wechsel von konstruktioneller Kompetition zu konstruktioneller Kooperation beurteilt.