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I gave it him — on the motivation of the ‘alternative double object construction’ in varieties of British English

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Three ditransitive constructions can be found in varieties of British English: (i) the ‘prepositional object construction’, where the recipient is encoded as a prepositional phrase (*gave it to him*); (ii) the ‘canonical double object construction’, where the recipient precedes the theme (*gave him it*); and (iii) the ‘alternative double object construction’, where the theme precedes the recipient (*gave it him*). The last of these constructions is typically found in (north)western varieties of British English when both objects are pronominal, and most of the relevant varieties have a ‘canonical’ ordering (REC > TH) when the theme is non-pronominal. Consequently, there seems to be an ‘inconsistency’ in the clause structure of the varieties in question. Using comparative and historical evidence, this article addresses the question of how this inconsistency can be explained. The ‘paradigmatic mismatch’ under discussion is shown to be a remnant of Old English clause structure which can also be observed in other verb second languages such as Modern German. It is argued to result from a tendency for both verb positions (finite/left and non-finite/right) to attract direct objects. This tendency is regarded as an effect of performance preferences in natural language discourse.

1. Introduction

As is well known, standard British English has two alternating constructions for the expression of three-place predicates: the ‘double object construction’ and the ‘prepositional object construction’ (see e.g. Larson 1988; Levin 1993; Goldberg 1995; Bresnan and Nikitina 2003 and references cited there). Moreover, the double object construction comes in two different types if non-standard varieties of English are taken into account: (a) the RECIPIENT precedes the THEME¹ (*I gave him the book*), or (b) the THEME precedes the RECIPIENT (^D*I gave it him*;² cf. Siewierska and Hollmann 2007). This programmatic article addresses the question of how

the various constructions are distributed in varieties of British English, and how these distributions can be explained in synchronic and/or diachronic terms. After surveying some basic information about the three ditransitive constructions in this introductory section, their distribution within varieties of English will be summarized in Section 2. Specific ('inconsistent') varieties exhibit what I call a 'paradigmatic mismatch', i.e. variation in the order of theme and recipient relative to the (lexical or pronominal) status of the objects involved: while the recipient precedes the theme in most sentence configurations (*He gave the man/him_{REC} the book_{TH}*), the reverse order is found when both objects are pronominal (*He gave it_{TH} him_{REC}*). An explanation for this 'inconsistency' is offered in Section 3 on the basis of a frequency-driven functionalist approach, using comparative data from German. Section 4 outlines the historical development of ditransitive constructions in English, illustrating that the 'inconsistent' varieties have preserved patterns of Old English whereas the 'consistent' ones are probably innovative and may have been influenced by contact with Old Norse. The article concludes with a summary and outlook in Section 5.

1.1 Double object construction and prepositional object construction

The double object construction and the prepositional object construction are usually regarded as basically equivalent, though the exact extent of equivalence or non-equivalence is a matter of debate (cf. Bresnan and Nikitina 2003:3–12 and Hollmann this issue for discussion). In general, a contrast in meaning emerges only under specific circumstances. For instance, in some cases the double object construction necessarily expresses "successful transfer between a volitional agent and a willing recipient" (Goldberg 1995:151) whereas an event described by the prepositional object construction may be unsuccessful (cf. (1)). (2) illustrates that the double object construction requires a "volitional agent".

- (1) a. I *sent a parcel to her* but she never received it. (prepositional object construction)
 b. ?I *sent her a parcel* but she never received it. (double object construction)
- (2) ??Joe *threw the right fielder the ball* he had intended the first baseman to catch. (Goldberg 1995:143)

Moreover, there are instances of 'idiomatization' for both the double object construction and the prepositional object construction. The following examples are usually regarded as not allowing an alternation (but see Bresnan and Nikita 2003:8–10 for a number of examples showing that many supposedly idiomatic occurrences of *give*-idioms do alternate):

- (3) This development gave rise to a perplexing problem. [BNC ASF]
 (*...gave a perplexing problem rise.)
- (4) We might *give the hospital a call*, I think, and get the latest report. [BNC CJX]
 (*...give a call to the hospital.)

Since such contrasts as illustrated in (1) and (2) above emerge only rarely (or are rarely relevant in actual discourse), and for idiomatic constructions like those in (3) and (4) an alternation is (usually) not even available, differences in propositional meanings only have a minor impact on the distribution of the two alternating constructions. Much more important are structural, inherent semantic and discourse-pragmatic properties of the constituents involved, in particular their syntactic complexity or length, their status as a pronoun or as a lexical NP, the animacy of their referents, their discourse accessibility (given vs. new) and their (in)definiteness (cf. Hawkins 1994; Collins 1995; Gries 2003; Bresnan and Hay 2006; Bresnan *et al.* forthcoming). For instance, constituents that are either syntactically complex or bear heavy stress (or both) tend to come last. All other things being equal, the double object construction is therefore preferred when the theme is heavy, whereas the prepositional object construction is preferred with heavy recipients (cf. Hawkins 1994, 2004 for an explanation of such heaviness effects). Gries (2003) and Bresnan *et al.* (forthcoming) have accounted for the distribution of the double object construction in terms of multi-dimensional statistical models which take all of the aforementioned parameters into account.

1.2 The order of objects in ditransitive constructions

In standard English, the prepositional object construction exhibits greater syntactic flexibility than the double object construction in so far as the order of prepositional and non-prepositional objects is not entirely fixed: if the non-prepositional object is heavier than the prepositional one, it may be postponed ('heavy NP-shift'; cf. (5)). Such reordering is not generally possible with the double object construction, as is witnessed by the ungrammaticality of (6b) (in standard varieties of English):

- (5) His son was Decimus Burton whose designs [gave [to the scheme] [a wholeness much more successful than any of the other attempts in the county]]. [BNC CB6]
- (6) a. The colonial period ushered in an era of foreign investment which [gave [the large scale trading houses of Europe] [a hold on the development]] ... [BNC A6M]
 b. *The colonial period ushered in an era of foreign investment which [gave [a hold on the development] [the large scale trading houses of Europe]] ...

TH-REC order as illustrated in (6b) is found only in some regional varieties of British English. Hughes and Trudgill (1979:21) provide the example in (8), noting that it “is not especially common, but does occur in northern varieties, particularly [...] if *man* is contrastively stressed” (cf. also Siewierska and Hollmann 2007). I will refer to the construction illustrated in (8) as the ‘alternative double object construction’, in contradistinction to the ‘canonical double object construction’ illustrated in (7).

(7) CANONICAL DOUBLE OBJECT CONSTRUCTION

She [gave [_{REC} the man] [_{TH} a book]].

(8) ALTERNATIVE DOUBLE OBJECT CONSTRUCTION

^DShe [gave [_{TH} a book] [_{REC} the MAN]]. (Hughes and Trudgill 1979:21)

By and large, the generalizations made above about the distribution of ditransitive constructions apply when one of the objects is a pronoun as well, and pronouns simply behave like very short constituents of category NP. The alternative double object construction with a pronominal theme is illustrated in (9):

(9) ^DWe give it the cook and she cooked it. [*sic*] [BNC HVB]

Just like cases such as (8) above ([V NP_{TH} NP_{REC}]), constructions of the type illustrated in (9) ([V PRO_{TH} NP_{REC}]) are very rare, and only a handful of instances can be found in the BNC³ (e.g. *I give it the birds*, *Give it the horses* [...]). However, the alternative double object construction is more common when *both* objects are pronominal, i.e. combinations of the form [V *it*_{TH} *me*_{REC}], [V *it*_{TH} *you*_{REC}], etc. are relatively frequent in regional varieties of British English, though overall much less common than the prepositional object construction ([V *it*_{TH} [_{REC} to me]]), and slightly less common than the canonical double object construction ([V *me*_{REC} *it*_{TH}]). Examples of each construction are given in (10)–(12). The numerical distribution of the three constructions in registers of English is shown in Table 1 (in occurrences per million words, in the Longman Spoken and Written English Corpus; cf. Biber *et al.* 1999:928; the table has been adapted from Siewierska and Hollmann 2007).

(10) His Dad pulled the arrow off the door and *gave it to him*. [BNC ABX]

(11) He wanted more time and the rebels *gave him it*. [BNC HH5]

(12) I got the map from his secretary, and when I *gave it him* he spread it out on his desk. [BNC H0D]

For one specific combination of pronominal recipients and themes the variation between varieties of English has been mapped in the *Linguistic Atlas of England*

Table 1. Ditransitive constructions with pronominal objects in the LSWEC

	CONV	FICT	NEWS	ACAD
[V PRO _{TH} to PRO _{REC}]	90	70	10	<5
[V PRO _{REC} PRO _{TH}]	40	<5	<5	<5
[V PRO _{TH} PRO _{REC}]	20	10	<5	<5

(Orton *et al.* 1978), based on the *Survey of English Dialects* (Orton *et al.* 1962–1971), namely for third person/inanimate themes and first person recipients (*give it to me*, *give it me*, or *give me it*; cf. Figure 1). The emerging patterns roughly correspond to traditional classifications of English dialects, in particular of Middle English. Five major areas can be distinguished: the northern varieties, where REC–TH order prevails, just as in the East Midlands, whereas in the West Midlands it is TH–REC order that is more widespread. In the southwest and in London, neither of

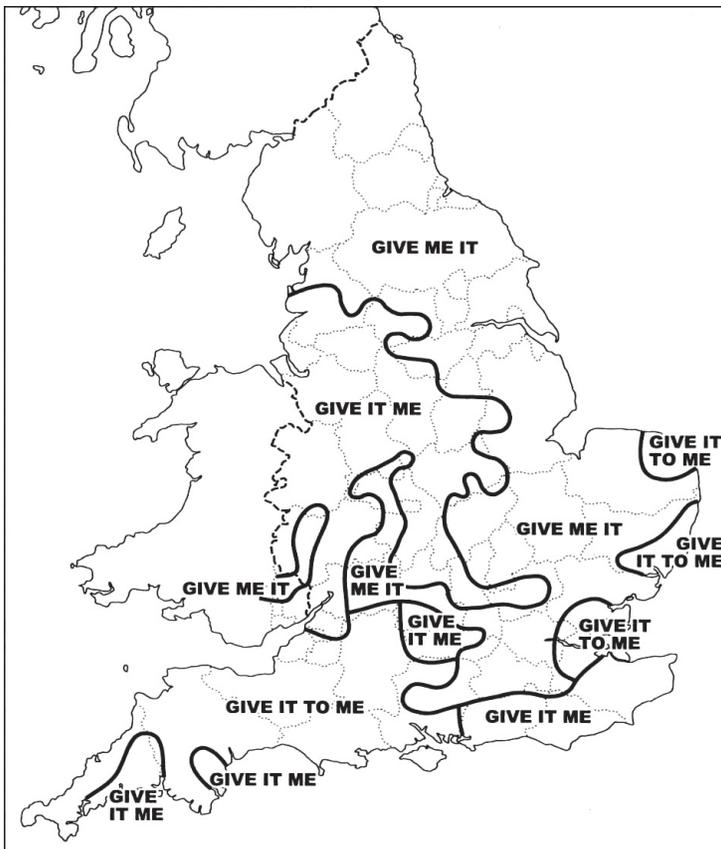


Figure 1. Map “Give it me”, p. 52 from *An Atlas of English Dialects* by Upton, C. and Widdowson, J.D.A. (1996). By permission of Oxford University Press.

the two double object constructions is widely used. As will be seen later, reference to Middle English dialects is significant because it was probably between Old and Middle English that the different constructions established themselves.

2. The distribution of ditransitive constructions within varieties of English

As has been mentioned, the two ditransitive constructions of standard English — the prepositional object construction and the canonical double object construction — have a strongly overlapping, though not identical, distribution (cf. Section 1.2). The question arises how ditransitive constructions are distributed in non-standard varieties which have all of the three constructions distinguished above. To my knowledge, no comprehensive data set is available so far which would allow us to answer this question conclusively, so this section is confined to some suggestions and preliminary observations.

Given that even the most comprehensive dialect corpora are not large enough to provide any statistically significant figures about the (pronominal) double object construction (cf. Hollmann and Siewierska 2006), I will use data from a novel to illustrate the distribution of the three constructions within a given ‘variety’ of English (where ‘variety’ is put in quotation marks because it is used in a maximally broad sense; here it stands for the idiolect of the narrator or some protagonist as conceived by the author of a novel).⁴ In Charles Dickens’ novel *David Copperfield* the two double object constructions are in complementary distribution, in so far as for each combination of a theme and a recipient (pronominal theme/pronominal recipient, pronominal theme/lexical recipient, etc.) only one of the constructions is used. The canonical double object construction is found only with the combinations ‘lexical recipient/lexical theme’ (*give your boy an exercise*) and ‘pronominal recipient/lexical theme’ (*give him a sky-blue coat*). When both objects are pronominal, only the alternative, but not the canonical, double object construction is used (*gave it me*). Neither of the two constructions is found with lexical recipients/pronominal themes, so the prepositional object construction is the only option in such cases (*gave it to Steerforth*). The prepositional object construction is also found as an alternative option in all other cases. Table 2 summarizes the distribution of the various constructions relative to the status of the objects involved. Examples of the four possible combinations of pronominal and non-pronominal recipients and themes are given in (13)–(16).⁵

(13) lexical REC, lexical TH

“Clara, there’s nothing like work — *give your boy an exercise*; ...” [DC 61]

Table 2. Distribution of ditransitive constructions in Charles Dickens' novel *David Copperfield*

RECIPIENT THEME	pronominal	lexical
pronominal	alternative DO-construction PO construction	PO-construction
lexical	canonical DO-construction PO-construction	canonical DO-construction PO-construction

- (14) lexical REC, pronominal TH
She withdrew her hand timidly from his arms as we stopped to speak to them, and blushed as she *gave it to Steerforth and to me*. [DC 321]
- (15) pronominal REC, lexical TH
"If I was ever to be a lady, I'd *give him a sky-blue coat* with diamond buttons..." [DC 43]
- (16) pronominal REC, pronominal TH
Mr. Dolloby rolled it up again, and *gave it me back*. [DC 186]

It should be noted that the categories 'pronominal' vs. 'lexical' are rather coarse-grained, since some elements may not be clearly categorized as either pronouns or lexical NPs. For instance, deictic pronouns and pronominal *one* are generally classified as pronouns, but they often behave like full NPs with respect to their distribution in ditransitive constructions. In the language of *David Copperfield* these elements license the canonical double object construction (cf. also Bresnan and Nikitina 2003:18 on the behaviour of such 'heavy pronouns'):

- (17) "...how could I deny her when she *give me this* to carry for her — knowing what she brought it for? ..." [sic] [DC 434]
- (18) But if you want a dog to race with, Little Blossom, he has lived too well for that, and I'll *give you one*. [DC 897]

Assuming that the language of *David Copperfield* represents one type of variety of English, we can so far distinguish three major types of varieties with respect to the availability of ditransitive constructions (assuming that the prepositional object construction is generally available as one alternative): (i) varieties that have only the canonical (but not the alternative) double object construction, but that do not use it when both objects are pronominal (**gave me it*, **gave it me*, *gave it to me*; e.g. standard British English); (ii) varieties that have only the canonical double object construction and that do allow it in sentences with two pronominal objects (*gave me it*, **gave it me*, *gave it to me*; e.g. some north-eastern varieties of British English); (iii) varieties that have both the canonical and the alternative double object

construction and that use the latter when both objects are pronominal (**gave me it, gave it me, gave it to me*; e.g. some (north)western varieties of British English). This list of varieties is, of course, not exhaustive, but it seems to capture the patterns most commonly found on the British Isles. For the sake of future reference, I will use the following labels for the three types of varieties: varieties of type (i) will be called ‘neutral’, varieties of type (ii) ‘consistent’, and varieties of type (iii) ‘inconsistent’. The term ‘inconsistent’ is motivated by the varying order of the theme and the recipient relative to the [non-]pronominal status of the objects.

In order to determine the distribution of ditransitive constructions in varieties of English more exactly, we would of course have to make more fine-grained distinctions. For instance, the distribution of specific constructions with two pronominal objects (^D*gave it him*) would have to be investigated in comparison to their distribution with one pronominal object (^D*gave it the cook, ^Dgave the book him*), or without a pronominal object (^D*gave the book a man*). Moreover, the question should be addressed to what extent the availability of constructions depends on lexical or grammatical classifications (NP, pronoun), or maybe on other properties such as animacy or the ability to carry stress. Sentences such as (19) seem to be unattested in any variety of English, but Hughes and Trudgill (1979:21) provide the example in (20), which requires that *him* carry heavy stress:

(19) *She gave some thought it.

(20) ^DShe gave the book HIM. (Hughes and Trudgill 1979:21)

We may speculate that certain implicational relations can be established with regard to the availability of the various constructions. For instance, the hypothesis suggests itself that varieties allowing the alternative double object construction in sentences such as (8) above (^D*She gave a book the man*) will also allow it in cases like (9) (^D*We give it the cook*), though not vice versa; and it seems likely that varieties which allow (9) will also allow sentences of the form ^D*I gave it him*, but not vice versa. This hypothesis amounts to postulating a hierarchy of the form shown in (21), which is, however, nothing more than a conjecture at this point. The hierarchy says that if a variety of English allows a certain construction at some point on the hierarchy, it will also allow all other constructions further to the left.

(21) [V PRO_{TH} PRO_{REC}] > [V PRO_{TH} NP_{REC}] > [V NP_{TH} NP_{REC}] > [V NP_{TH} PRO_{REC}]

3. A parallel structural mismatch in German: Towards an explanation

From the perspective of language-internal ‘paradigmatic architecture’ — the organization of syntactic relations into constructional schemas, as it were — the

existence of the alternative double object construction in some varieties of English is unexpected. As has been shown, this construction leads to what we may call a 'paradigmatic mismatch': in some sentences the recipient precedes the theme while in others the theme precedes the recipient, even though there is no distinctive morphological case marking. Although misunderstandings will only rarely arise because contextual information and animacy asymmetries will usually indicate which constituent functions as a theme and which one as a recipient (cf. Haspelmath's 2004 'ditransitive person-role constraint'), such 'constructional inconsistency' seems to call for an explanation. It contradicts the 'principle of analogy' as postulated, for instance, by the Neogrammarians in the domains of phonology and morphology (cf. Osthoff and Brugmann 1878:78ff.). The 'paradigmatic mismatch' in 'inconsistent' varieties of English will be addressed from a historical perspective in Section 4, where the development of ditransitive constructions from Old English to Modern English is sketched. Before turning to the diachronic facts of English, however, a comparative survey of some relevant facts from German will be given in Section 3.1, since German has a syntax quite parallel to that of Old English and since, unlike for Old English, negative evidence and grammaticality judgements are readily available. In Sections 3.2–3.4, the distributional facts of German will be explained with reference to three general motivations underlying the structure and development of languages, namely 'frequency', the 'principle of analogy' and the 'principle of end weight'. I take it that parallel explanations could be given to account for the word order of Old English.

3.1 Object serialization in the German Middle Field

A paradigmatic mismatch parallel to the one found in 'inconsistent' varieties of English can be observed in ditransitive constructions of standard German. While the recipient generally precedes the theme when both objects are lexical, the inverse order is found when the two objects are pronominal. This is illustrated in (22)–(25).⁶

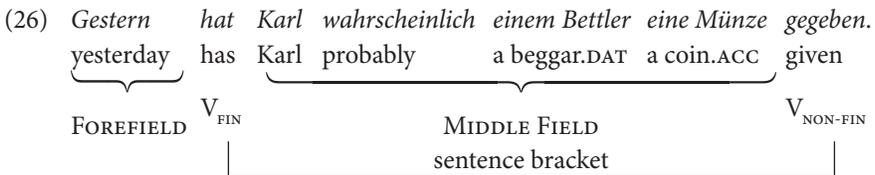
(22) *Er gab* [_{REC} *einem Bettler*] [_{TH} *eine Münze*].
 he gave a beggar.DAT a coin.ACC

(23) [?]*Er gab* [_{TH} *eine Münze*] [_{REC} *einem Bettler*].
 he gave a coin.ACC a beggar.DAT

(24) *Er gab es*_{TH} *ihm*_{REC}.
 he gave it.ACC him.DAT

(25) [?]*Er gab ihm*_{REC} *es*_{TH}.
 he gave him.DAT it.ACC

The data from German seem to indicate that we may be dealing with a rather general phenomenon, at least within the Germanic language family. If we consider the make-up of the German sentence in a so-called *topological* model (e.g. Lenerz 1977; Höhle 1986), it turns out that the paradigmatic mismatch under discussion gives German main clauses a remarkably symmetrical structure. Such a topological model is illustrated in (26). German main clauses are regarded as being made up of three major ‘fields’: the ‘Forefield’ (or ‘Prefield’), the ‘Middle Field’ and the ‘Postfield’. The Postfield, which hosts extraposed/right-dislocated constituents, is not relevant at this point. The Middle Field is ‘embraced’ by the ‘sentence bracket’, which consists of the finite verb on the left margin and the non-finite verb (if there is one) on the right margin.



The Forefield is a slot for one sentence-initial constituent which is generally either topical or focal. It often contains the subject but it may, alternatively, be occupied by any other constituent of the clause. The Middle Field constitutes the ‘core’ of the sentence. It contains all arguments and adjuncts (except, of course, the topical and extraposed ones, which are located in the Forefield and the Postfield, respectively). In (26), the Forefield is filled by the adverbial *gestern* ‘yesterday’. The sentence bracket is formed by the auxiliary *hat* ‘has’ and the (non-finite) main verb *gegeben* ‘given’. The non-topical arguments and adjuncts are located in between. Table 3 shows that any constituent of the clause may occupy the Forefield.

Pronouns usually occur on the left margin of the Middle Field (if they are unstressed), in a position that is sometimes called the ‘Wackernagel position.’⁷ If one of the objects (*einem Bettler* ‘a beggar.DAT’ or *eine Münze* ‘a coin.ACC’) is pronominalized, the relevant pronouns immediately follow the finite verb. When they are both pronominalized, the accusative tends to precede the dative.⁸ Table 4

Table 3. The structure of German main clauses

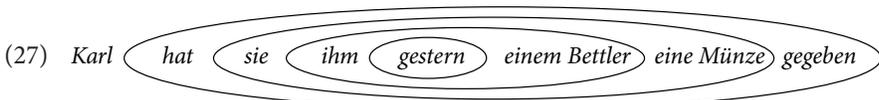
Forefield	V _{FIN}	Middle Field	V _{NON-FIN}
<i>Karl</i>	<i>hat</i>	___ <i>wahrscheinlich gestern</i>	<i>einem Bettler eine Münze gegeben</i>
<i>Wahrscheinlich</i>	<i>hat</i>	<i>Karl</i> _____ <i>gestern</i>	<i>einem Bettler eine Münze gegeben</i>
<i>Gestern</i>	<i>hat</i>	<i>Karl wahrscheinlich</i> _____	<i>einem Bettler eine Münze gegeben</i>
<i>Seinem Sohn</i>	<i>hat</i>	<i>Karl wahrscheinlich gestern</i>	_____ <i>eine Münze gegeben</i>
<i>Ein Fahrrad</i>	<i>hat</i>	<i>Karl wahrscheinlich gestern</i>	<i>einem Bettler</i> _____ <i>gegeben</i>
	has	Karl probably yesterday	a beggar.DAT a coin.ACC given

Table 4. Pronominal objects in the German Middle Field

Forefield	V _{FIN}			Middle Field			V _{NON-FIN}
Karl	hat			gestern	einem Bettler	eine Münze	gegeben
Karl	hat		ihm	gestern	_____	eine Münze	gegeben
Karl	hat	sie		gestern	einem Bettler	_____	gegeben
Karl	hat	sie	ihm	gestern	_____	_____	gegeben
Karl	has	her.ACC	him.DAT	yesterday	a beggar.DAT	a coin.ACC	given

illustrates the structures that result when the subject is located in the Forefield and the objects are pronominalized.

When we consider the structures displayed in Table 3 and Table 4, it becomes apparent that in the most typical sentence configuration — in sentences with a (topical) subject in the Forefield — German clause structure displays a remarkable symmetry as far as the arrangement of arguments and adverbials in the Middle Field is concerned:⁹ the verbs (finite and non-finite) occupy the outermost positions, while the constituents located towards the centre of the Middle Field become increasingly oblique, in what looks like a shell structure. If we move from the verbs inwards the first elements are the accusative objects *sie* (to the left) and *eine Münze* (to the right), then follow the dative objects *ihm* (left) and *einem Bettler* (right), and in the centre there is the adverbial *gestern* 'yesterday'. Accordingly, the Middle Field (plus the sentence bracket) can be described as a concentric structure in such 'subject-topic sentences'. This is illustrated in (27). Note that the ellipses do not indicate constituency but spatial distance in typical sentence configurations, and that pronouns and noun phrases with identical case specifications are of course complementary, which means that for each layer either a pronoun or a noun phrase has to be chosen:



Given that verbs, rather than adverbials, should be regarded as the centre of the clause, the structure could better be described as a 'bi-polar' formation with a verb (position) on each side. This is shown in (28) and (29):



The structure shown in (28) and (29) suggests that the two verb positions, in a way, ‘attract’ the theme, or NPs in the accusative case. If this is right, it follows that accusative pronouns will precede dative pronouns — since pronouns are located on the left margin of the Middle Field, close to the finite verb — whereas the reverse order will be found with lexical NPs on the right margin of the Middle Field. However, saying that the verb positions ‘attract’ the accusative is of course only a metaphor which is itself in need of an explanation. The assumption that two elements or categories *x* and *y* ‘attract each other’ can be translated into a more falsifiable statement by saying that, all other things being equal, they tend to co-occur more often than any other possible combination of elements. In other words, they tend to be placed together if they occur in the same sentence and if no other reason requires an alternative ordering. Such a generalization can be accommodated within the framework of frequency-driven functionalism as advocated, among others, by Martin Haspelmath (cf. Haspelmath 2004, 2006, forthcoming; cf. also Bybee and Hopper 2001 and Bybee 2001, 2005 for phonological applications). This argument requires that we briefly digress into matters of text frequency, which will be done in Section 3.2. Section 3.3 deals with the question of how and why frequency should have an effect on the linear order of elements, against the background of claims made in ‘frequency-driven functionalism’. As will be argued, frequency is an important, but not the only factor determining the order of elements in the clause. It sometimes competes with the ‘principle of analogy’, which requires that elements with identical morphological and/or semantic properties should be treated alike in the application of syntactic rules. In addition to these two explanatory principles accounting for the order of elements in the clause, a third one is introduced in Section 3.4, namely the ‘principle of end weight’. While the principle of end weight is theoretically independent of the other two principles, it will be argued to ‘conspire’ with frequency effects favouring the type of configuration found in the German Middle Field, thus outweighing the ‘principle of analogy’.

3.2 Types of text frequencies

The most basic type of frequency is that of ITEM FREQUENCY,¹⁰ i.e. the frequency of elements such as *give*, *it*, *me*, etc. in a text. A second type of frequency has been called STRING FREQUENCY (see e.g. Krug 1998, 2000). String frequency measures the frequency of specific linear combinations of items, for instance <*give it*>, <*give me*>, or <*give him*>. Thirdly, if we generalize over one of the two positions in a ‘string’, this gives us one type of PATTERN FREQUENCY — say, ‘unary pattern frequency’ — which indicates the frequency of patterns such as <V *it*> or <V *me*> (cf. also Bybee’s 2001 ‘schemas’). Finally, we can also abstract away from the second element of a string, thus determining what we may call ‘binary pattern frequency’. In this case we are dealing with patterns such as <V NP_{ACC}> or <V PRO_{DAT}>. Note

that string frequency and pattern frequency have nothing to do with constituency, i.e. the elements of a string like <*give it*> need not form a constituent. This is why such pairs are enclosed by angle brackets rather than square brackets.

The crucial point of my argument concerning the preferred order of objects in German is that the pattern frequency of a finite verb followed by a pronominal accusative, or of a non-finite verb preceded by a lexical accusative, will always be higher than the frequency of the corresponding structures with dative pronouns or NPs. This prediction is independent of the order of accusative and dative constituents in the Middle Field. The reason is that most transitive verbs are mono-transitive, thus licensing only one (accusative) object, whereas the dative is, with a few exceptions, licensed only *in addition to* an accusative object (some verbs license only a dative object, e.g. *helfen* 'help' or *folgen* 'follow'). In other words, the set of environments licensing a dative object is (almost) a subset of the set of environments licensing an accusative object. Therefore, patterns such as <V_{FIN} + *ihn*> or <V_{FIN} + PRO_{ACC}> on the left margin of the Middle Field are expected to be more frequent than the corresponding structures with a dative pronoun (<V_{FIN} + *ihm*>, <V_{FIN} + PRO_{DAT}>). Likewise, on the other side of the Middle Field, the pattern <NP_{ACC} + V_{NON-FIN}> is expected to be more frequent than the corresponding pattern with a dative object (<NP_{DAT} + V_{NON-FIN}>).

The expectations concerning the closer affinity of accusative pronouns and NPs to finite and non-finite verbs, respectively, are corroborated by data from the COSMAS corpus.¹¹ The results obtained from a random sample of 969 occurrences of the (unary) pattern <*hat* + PRO_{SG}> for pronouns in the nominative, accusative and dative are given in Table 5 (*hat* is the 3rd person singular form of the auxiliary *haben* 'have').

As Table 5 shows, the finite verb *hat* is most frequently followed by a nominative pronoun. There are 754 occurrences of the pattern <*hat* + PRO_{NOM}>. This is expected since every sentence has a subject. The corresponding pattern with an accusative pronoun occurs 191 times, in most cases with a neuter pronoun (*es*). The dative pronouns are much rarer in this configuration, and are moreover special in so far as masculine and feminine pronouns outnumber neuter pronouns. Comparing the three cases to each other, the nominative is approx. 4 times more frequent than the accusative, which in turn outnumbers the dative by a factor of 8.

Table 5. Frequencies of the pattern <*hat* + PRO_{SG}>

	MASC	FEM	NEUT	Σ
NOM	435	190	129	754
ACC	36	19	136	191
DAT	15	8	1	24
Σ	486	217	266	969

A similar asymmetry between dative and accusative case can be observed on the other side of the Middle Field. The pattern $\langle \text{DET}_{\text{ACC.MASC}} (+ N) + \text{gegeben} \rangle$ (e.g. *einen Tritt gegeben*, lit. ‘a kick given’) occurs 2,411 times in the whole COSMAS corpus and is thus much more frequent than the corresponding structure with a dative NP ($\langle \text{DET}_{\text{DAT.MASC}} (+ N) + \text{gegeben} \rangle$, e.g. *einem Mann gegeben* ‘[to] a man given’), which occurs only 373 times. The first pattern outnumbers the second by a factor of approx. 6.5.

3.3 Pattern frequency and word order

We now turn to the question of how frequency patterns like those pointed out above can be causally related to word order rules (or tendencies of constituent linearization). The idea underlying the explanation proposed in this section can be summarized like this: whenever there is a set of elements $\{\alpha, \beta, \gamma\}$ whose serialization is not determined by any independent principle of grammar, those serializations will be preferred which occur most frequently in actual discourse. For instance, if a string or pattern $\langle \alpha, \beta \rangle$ is more frequent than $\langle \alpha, \gamma \rangle$, the orders $\langle \alpha, \beta, \gamma \rangle$ and $\langle \gamma, \alpha, \beta \rangle$ will be preferred over any order in which α and β are not adjacent. Let us refer to this hypothesis as the ‘principle of frequency-based serialization’:

- (30) The principle of frequency-based serialization
 The elements of a set $\{\alpha, \beta, \gamma, \dots\}$ tend to be serialized in such a way that, all other things being equal, frequently co-occurring pairs of elements $\langle x, y \rangle$ are adjacent, and the tendency for any such pair to be adjacent correlates with its frequency.

The ‘principle of frequency-based serialization’ relies on claims made by proponents of what we may call ‘frequency-driven functionalism’. Haspelmath (2004:1–2) refers to the relationship between discourse frequency and grammatical structure as “the *Frequency Condition on Entrenchment in Grammaticalization*. It says that when a loose combination of expressions becomes entrenched and is conventionalized as a separate construction, which particular elements may figure in the construction often depends on their frequency of occurrence”. This is of course closely related to DuBois’ (1985:363) claim that “grammars code best what speakers do most”, and to Hawkins’ ‘Performance-Grammar Correspondence Hypothesis’:

Grammars have conventionalized syntactic structures in proportion to their degree of preference in performance, as evidenced by patterns of selection in corpora and by ease of processing in psycholinguistic experiments. (Hawkins 2004:3)

The reasoning underlying the ‘Performance-Grammar Correspondence Hypothesis’ is, of course, that more frequent structures require less processing or

production effort than less frequent ones (cf. Bybee 2001:6–14 for an overview of the relationship between frequency and memory).

Let us consider example (31) for illustration, assuming that the order of the two pronouns *es* and *ihm* is not grammatically fixed. This is certainly not too far-fetched if we consider that neither of the two possible serializations gives rise to real ungrammaticality:

- (31) *Ich habe* $\left\{ \begin{array}{l} es_{\text{ACC.NEUT}} \\ ihm_{\text{DAT.MASC}} \end{array} \right\}$ *gestern gegeben.*
 I have {it, him} yesterday given

In (31), the Middle Field is delimited by the auxiliary *habe* 'have' and the past participle form of the verb *geben* 'give' (*gegeben*). The two possible 'output candidates' are given in (32) and (33):

(32) *Ich habe ihm es gestern gegeben.*

(33) *Ich habe es ihm gestern gegeben.*

Each of the output candidates has 'advantages': (32) is in accordance with the 'canonical' order of direct and indirect objects with non-pronominal NPs; we could say that it obeys the 'principle of analogy' (cf. below). (33) is at variance with the principle of analogy — it gives rise to a 'paradigmatic mismatch' in the clause structure — but it has the advantage of being in accordance with the 'principle of frequency-based serialization', since the string *<habe + es>* is more frequent than the string *<habe + ihm>* (24,614 vs. 6,539 occurrences in the COSMAS corpus; the ratio is approx. 4:1). Thus there are (at least) two competing principles at work: the 'principle of frequency-based serialization' stated in (30) above, and the 'principle of analogy'. The latter principle can be characterized more precisely in the present context as the 'principle of analogical form-function mapping':

- (34) The principle of analogical form-function mapping
 Elements with identical morphological and/or semantic specifications are treated alike in the application of syntactic rules, or the use of constructional schemas.

Roughly speaking, the 'principle of analogical form-function mapping' requires that the order of themes and recipients (or accusative and dative NPs) should be invariant across sentences and independent of the exact categorial status of the NP (e.g. pronoun or lexical NP). Given that the order of themes and recipients is not invariant in the German Middle Field, this principle seems to be outweighed by the 'principle of frequency-based serialization'.

3.4 The ‘principle of end weight’

So far, I have postulated two (competing) principles underlying word order rules and tendencies of object serialization in the German Middle Field. Unfortunately, such an account probably falls short of an adequate explanation. In particular, the hypothesis that the two verb positions in the German Middle Field ‘attract the accusative’ via frequency effects faces one problem: it cannot account for the order of objects in subordinate clauses, where pronominal themes likewise precede pronominal recipients, although there is no (finite) verb to the left of the Middle Field. This is illustrated in (35):

- (35) ...*dass ich* *es*_{TH} *ihm*_{REC} *gestern* *gesagt* *habe*.
 ...that I it.ACC him.DAT yesterday told have
 ‘...that I told him it yesterday.’

We could of course assume that the order of elements in the German Middle Field is primarily determined in main clauses and then generalized to subordinate clauses (another instance of the ‘principle of analogical form-function mapping’). From the perspective of frequency-based explanations this seems feasible, since main clauses are certainly more frequent than subordinate clauses, especially in the spoken language. Still, one may object that we should be bound to expect the word order in subordinate clauses to differ from the one in main clauses if frequency were the only factor. In this section, a third explanatory principle will be discussed, namely the ‘principle of end weight’. As will be argued, the principle of end weight favours TH–REC order for pronominal objects and REC–TH for non-pronominal ones and thus ‘conspires’ with the frequency effects pointed out above.

The ‘principle of end weight’, which I take to be equivalent to Behaghel’s (1909) ‘law of increasing constituents’ (*das Gesetz der wachsenden Glieder*), is usually regarded as a principle of phonological well-formedness at the sentence level and has often been invoked by rhetoricians. Behaghel refers to the Athenian Demetrius of Phaleron (†280 BC), who states in his treatise on style (*perí hermeneías*) that “in composed periods the last element has to be larger [than the preceding ones]” (§18) and that “the words have to be arranged like this: to put first what is not very prominent, and in the second and last position what is more prominent” (§50; quoted from Behaghel 1909:137; my translation). Hawkins (1994, 2004) has shown that the principle of end weight can be explained in terms of processing ease and is thus firmly anchored in cognitive principles of language organization.

If we consider the serialization of pronouns in the German Middle Field from a phonological point of view, we notice that accusative pronouns typically have less phonological substance than dative pronouns. It is consequently to be expected that accusative pronouns will precede dative pronouns if the principle of end

weight applies at this level of phonological organization (cf. also Müller 2001 for this assumption).¹² (36) provides a scale of phonological weight which orders the German pronouns according to the number of their syllables (monosyllabic vs. disyllabic) and the structure of their rhymes:¹³

(36) monosyllabic			disyllabic
-VC	-V{CC,V}	-VV{V,C}	
[əs] _{3SG.NT.ACC}	[ʊns] _{2PL.ACC/DAT}	[i:n] _{3SG.MASC.ACC}	[i:nən] _{3PL.DAT}
[miʧ] _{1SG.ACC}	[zi:] _{3PL.ACC/3SG.FEM.ACC}	[i:m] _{3SG.MASC.DAT}	
[diʧ] _{2SG.ACC}		[ɔɪʧ] _{2PL.ACC/DAT}	
[ziʧ] _{3REFL.ACC/DAT}		[i:ɐ] _{3SG.FEM.DAT}	

The generalization that pronouns are serialized according to their phonological weight makes the right predictions in most but not all cases. For instance, dative *uns* should precede accusative *ihn*, but the reverse order is usually found (e.g. *stellte ihn uns vor* 'introduced him to us'; note that the alternative ordering *stellte uns ihn vor* is also fully acceptable, but less frequent: <*ihn uns*> occurs 246 times in the COSMAS corpus as against 46 occurrences of <*uns ihn*>). Still, both of the two dative pronouns that are relatively light — *sich* and *uns* — are also used in the accusative, i.e. there is case syncretism. The following generalization can therefore be made: every dative pronoun that is lighter than some accusative pronoun is also used in the accusative. This seems to indicate that the scale in (36) is not only one of phonological weight, but also one of frequency: as was shown in Section 3.2, accusative pronouns are more frequent than dative pronouns in the Wackernagel position and are therefore expected to have less phonological weight.¹⁴

As far as combinations of pronouns are concerned, the principle of end weight thus works in the same direction as the principle of frequency-based serialization, in so far as it favours TH-REC order for combinations of pronouns. The same applies to the serialization of lexical NPs on the other side of the Middle Field: lexical recipients are typically 'lighter' than lexical themes, since the former tend to be human and given whereas themes are often non-human and new. This has been shown by Collins (1995:43), who states that on an average "entity NPs [themes] are over three times longer than receiver NPs". As a consequence, lexical recipients are expected to typically precede lexical themes, according to the principle of end weight.

To sum up this section, there are two principles favouring the order of objects as described for the German Middle Field in Section 3.1 (i.e., PRO_{TH}-PRO_{REC} and NP_{REC}-NP_{TH}): (i) the principle of frequency-based serialization, and (ii) the principle of end weight. The principle of analogical form-function mapping is at variance with these ordering principles, though it does not favour any particular

order. It merely says that the order of objects should be invariant across sentences and independent of the types of NPs involved, but this could either mean that pronouns should be ordered like lexical noun phrases, or else that lexical noun phrases should be ordered like pronouns. The fact that German exhibits an ‘inconsistent’ ordering of objects in the Middle Field shows that the principle of analogical form-function mapping does not carry much weight in this part of German grammar. This is not unexpected considering that linear order plays a minor role in German clause structure, since grammatical relations are primarily identified by morphological case.

4. English ditransitive constructions in a diachronic perspective

Having discussed three principles accounting for the order of elements in the German Middle Field — partially conspiring and partially competing — we can now turn to the historical development of the double object construction in English. The clause structure of Old English or, to be more precise, of the West Saxon dialect of Old English, is quite similar to that of German. Old English is usually analyzed as a verb-second language, though the verb occurs regularly in the third position as well when it is preceded by a pronoun (cf. van Kemenade 1987; Denison 1993; Fischer *et al.* 2000 for surveys of Old English syntax; note that verb third structures are also found in Old High German; cf. Tomaselli 1995; Ramers 2005). It is typically analyzed as OV, but VO structures are also frequently found. This is attributed either to extraposition (i.e., right-dislocation beyond the final verb), or to variation in the underlying order (the ‘double base hypothesis’; cf. Pintzuk 1990). V3-structure in main clauses is illustrated in (37) and an example of VO/extraposition is given in (38):

- (37) *God him worhte ða reaf of fellum*
 God them made then garments of skins
 ‘God then made them garments of skin.’
 (Ælfric’s Homilies I, 147–148, ed. Clemons; c990–994)
- (38) *Se mæsse-preost sceal monnum bodian þone soðan zeleafan*
 the mass-priest must people preach the true faith
 ‘The mass priest must preach the true faith to the people.’
 (Ælfric’s letter to Wulfstan I, 175, ed. Fehr/Oz; c1070)

In general, the topological structure of the OE sentence is nevertheless quite similar to that of the Modern German sentence, in particular, in so far as there is a ‘basic’ part of the clause, corresponding to the German Middle Field, and there are marginal positions for information-structurally prominent constituents. As

far as the order of theme and recipient is concerned, the situation is also parallel to the one found in German. Both REC–TH (DAT–ACC) and TH–REC (ACC–DAT) are attested, but the order of objects seems to be sensitive to properties of the constituents involved. Using the same diagnostics that are commonly applied to modern V2-languages, Koopman (1991:120) has argued that “there is reasonable evidence to suggest that the underlying order is DAT-ACC”. Two examples with this (supposedly) basic order are given in (39) (main clause) and (40) (subordinate clause):

- (39) *He* [_{REC} *þam geswenctum mannum*] [_{TH} *reste*]
 he gave the oppressed people rest
 ‘He gave the oppressed people rest.’
 (Vercelli Homilies IV, 149–50, ed. Scragg; a1000)

- (40) *þæt he* [[_{REC} *þon biddendan*] [_{TH} *ece lif*] *forgeafe*]
 that he the asking eternal life gave
 ‘that he gave eternal life to those who asked for it.’
 (Blickling Homilies II, 19, 35, ed. Morris; c971)

The order of pronominal objects is likewise parallel to that of German. According to Visser (1963:623), “[w]hen both the objects are pronouns it seems always to have been the rule to put the direct object before the indirect object. Exceptions are not numerous.” Examples are given in (41)–(43) (for more examples see Visser 1963:623):

- (41) & Ø *hæfde hit*_{TH} *him*_{REC} *wel neh twelf monæð*
 and PRO had it.ACC him.DAT well near twelve months
 ‘...and PRO kept it for himself for about twelve months.’
 (Anglo-Saxon Charters S 1467, ed. Sawyer; c1040)

- (42) ... *gelæste hit*_{TH} *him*_{REC} *georne ær oððon æfter*
 ... should.pay it.ACC him.DAT eagerly before or after
 ‘...(he) should pay it to him readily before or after [the feast].’
 (Laws of England: VI Æthelred 25, 2, ed. Liebermann; c1008–1011)

- (43) *He þe bæd langes lifes, and þu hit*_{TH} *him*_{REC} *sealdest* ...
 he you asked long life and you it.ACC him.DAT gave ...
 ‘He asked you for a long life, and you gave it to him ...’
 (Paris Psalter 20, 4, ed. Stracke; a900)¹⁵

Turning from Old English to Middle English, we are faced with the well-known problem that Middle English cannot simply be regarded as a later stage of Old English if the latter is taken to be synonymous with West Saxon, since most Middle English documents are written in dialects from regions other than West Saxon.

It is therefore often difficult to say whether a structural difference between varieties of Old and Middle English is due to a process of historical change, or whether the relevant differences already existed in Old English times. The developments sketched below are therefore to be taken as models for possible developments, rather than representing specific developments in the history of English. The question at what time the order of objects changed will be taken up later.

In very general terms, the change from Old English to Middle English is characterized by two important developments: first, the basic word order shifted from V2/OV to SVO; and second, case morphology was lost (cf. Trips 2002 for an overview). Supposedly as a result of the loss of case distinctions, the word order in the VP became increasingly fixed, but this change proceeded less quickly than one may be led to expect. As Visser (1963:622) remarks, “the indirect object can no longer be distinguished from the direct object by means of the difference in inflectional form. Henceforth the interpretation depends on context and situation, and on the fact that in the majority of cases the indirect object refers to a person and the direct object to a thing, so that word order is mostly immaterial”. Later, “a fixed wordorder [sic] came to take over the discriminative task of the difference in case forms”, in other words, REC–TH order was established as the canonical order.

A certain freedom may also have existed in the order of pronominal objects. However, it is likely that combinations of the type *gave it him/gave him it* were fixed earlier than the corresponding patterns with lexical NPs, owing to their relatively high string frequency. Some (not necessarily regional) varieties of Middle English had TH–REC order, just like the West Saxon dialect of Old English (again, ‘variety’ is used in a maximally broad sense and stands for the language of specific manuscripts). Examples are given in (44)–(47) (in chronological order):

- (44) he wule hit me forʒeuen
MED, s.v. *mild-herted*, Lambeth Homilies; a1225, W-Midlands
- (45) ‘Gossip’, quod þe wolf, ‘forʒef hit me’.
MED, s.v. *god-sib* 2., The Fox and the Wolf; a1300, prob. Kentish
- (46) Also I prey yow to foryeve it me.
Chaucer, Canterbury Tales, General Prologue, 743; 1380–90, London
- (47) Thou þat knowest the vse of an argument, I pray the schewe yt me.
MED, s.v. *ūse* 4a., Chartier Dialogue of the Friend and the Fellow; a1500, dialect not classified

A second type of variety of Middle English differs from Old English in regularly showing REC–TH order in the case of pronominal objects, as is illustrated in (48)–(50). Note that the sentences in (48) and (49) show verb-final order and are, in this respect, conservative:

- (48) Gode faith me it tauzte
MED, s.v. *tēchen* 10., Piers Plowman B; c1378, W-Midland
- (49) he wil me it allowe
MED, s.v. *allöuen* 5., Piers Plowman B; c1378, W-Midland
- (50) A pure man ... prayed þaim to giff hym it.
MED, s.v. *thirst* 1.(b), Alph. Tales; c1450, dialect not classified

As mentioned above, it is not entirely clear whether REC-TH order was in all cases the result of a process of innovation, or whether the relevant structures already existed in Old English times. However, there is good evidence that REC-TH order may have been established (at least in some varieties) before the Middle English period: the area covered by 'me-it-dialects' in Figure 1 corresponds more or less to the Danelaw (which extended more into the West Midland dialect area, though, and less into the south). In Old Norse, both REC-TH and TH-REC order are attested (for examples see Faarlund 2005:134, 141–142), but in modern Scandinavian languages REC-TH is the order generally used with all combinations of objects (nominal and pronominal). (51) and (52) are examples from Swedish and Icelandic:

- (51) Swedish
Han lånade honom den.
he lent him it
'He lent him it.' (Holmes and Hinchliffe 1994:511)
- (52) Icelandic
Ég gaf honum það.
I gave him it
'I gave it to him.' (Jóhanna Barðdal, p.c.)

Given that Modern Scandinavian languages uniformly have REC-TH order, it seems feasible that this was also the preferred order of Old Norse. If this is right, REC-TH order with pronominal objects in varieties of English may well be the result of language contact with Old Norse. In this case, the REC-TH construction may have been established before the Norman Conquest, i.e. before the emergence of Middle English, since the Danish settlements in the north-west date back to the late 8th century.

A similar instance of language contact has been claimed by Trips (2002:152–163) for 'object shift', viz. an operation commonly found in Scandinavian languages which is also attested in varieties of Middle English that are located in the Danelaw, in particular the language of the *Ormulum*. Given all the other (e.g. lexical) evidence that we have for contact influence of Old Norse on Old English, the hypothesis that REC-TH order in the pronominal double object construction

is due to language contact is certainly not too far-fetched. It is equally clear, however, that REC–TH order was also favoured by the ‘principle of analogical form-function mapping’, in so far as it led to a uniform serialization of objects in the Verb Phrase.

5. Conclusions and outlook

Starting with the observation that some varieties of English exhibit what we may call a ‘paradigmatic mismatch’ — the order of objects varies with their status as a noun or pronoun — I have attempted to show that such an inconsistency may actually be well motivated in V2-languages such as German and Old English if one takes frequency patterns (‘the principle of frequency-based serialization’) and stylistic preferences (‘the principle of end weight’) into account. Such principles have been claimed to counterbalance the ‘principle of analogical form-function mapping’, which is also an important motivation underlying language structure. TH–REC order (with pronominal objects) has been shown to be a conservative pattern in so far as it has been ‘inherited’ from Old English. Varieties manifesting REC–TH order in ditransitive constructions with two pronominal objects are basically found in the area corresponding to the Danelaw, which suggests that language contact with Old Norse may have played a role in the establishment of this construction. In order to corroborate this suspicion, a fine-grained analysis of Middle English texts with regard to the distribution of double object constructions and their geographical origin needs to be carried out. I leave this as a suggestion for future research.

Notes

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1. I will use the semantic terms ‘recipient’ (REC) and ‘theme’ (TH) to distinguish the two lower arguments of ditransitive predicates.
2. A superscript ^D is used to indicate a restriction to specific dialects.
3. The British National Corpus (BNC) contains approx. 100 million words. It comprises a spoken component of approx. 10 million words, which contains samples of speakers from all parts of Britain.

4. Note that the language of *David Copperfield* does not correspond to any northern or north-western variety of British English.
5. The page numbers correspond to the edition of the Etext of *David Copperfield*, published by Infomotions in 2005.
6. Note that the order of NPs is also sensitive to other factors such as length/complexity, definiteness and the interpretation of indefinite NPs. For instance, *eine Münze* in (23) can be preposed when it receives a specific/wide scope or a generic interpretation. If both objects are non-specific/existential, however, the dative precedes the accusative. This configuration is, for several reasons, regarded as the 'basic' or 'canonical' one (cf. Buring 2001; Lenerz 2001; Haider and Rosengren 2003; Frey 2004).
7. Wackernagel (1892) claimed that proto-Indo-European had a special position for clitics in the clause, namely the second position. Moreover, he contended that verb-second ordering in Germanic languages has emerged as a result of this rule, since (specific) verbs were generally enclitic in main clauses. Viewed from this perspective, it is the position of the finite verb that should be called the 'Wackernagel position' in German. However, since the position of the finite verb has lost its restriction to unstressed elements — assuming that there was such a restriction to begin with — today it is the position immediately following the finite verb that is usually called the 'Wackernagel position', since this position is occupied by elements similar to those occupying the 'genuine' Wackernagel position in languages such as Ancient Greek or Vedic (cf. also Anderson 1993).
8. In the COSMAS corpus, there are 18,139 occurrences of the sequence *es ihm* and only 67 of the order *ihm es*. Only in 10 cases of *ihm es* are the two pronouns co-arguments, i.e. in most cases there is a clause boundary between the two pronouns (e.g. ...*sagt ihm, es sei Zeit*, 'told him it was time'); cf. also Note 14.
9. There are several positions for adverbials, but most of them are located between the pronouns on the left margin and indefinite/existential objects on the right margin; cf. Frey and Pittner (1998).
10. I deliberately avoid the term 'token frequency' since it evokes the dichotomy of token vs. type frequency, which is too coarse-grained for the present purposes.
11. The COSMAS-corpus (Corpus, Search, Management and Analysis System) is a corpus of written language that contains more than 1 billion words. It can be accessed online at: http://www.ids-mannheim.de/kl/projekte/cosmas_I/.
12. This assumption is, of course, not beyond doubt, since the principle of end weight can hardly be said to operate at all levels of the phonological hierarchy. There is good evidence, however, that it operates not only at the phrase level (as shown by Hawkins 1994, 2004), but also at the word level, at least within the German Middle Field. From a phonological point of view, the Middle Field can be divided into three major parts: (i) the left margin, often associated with the Wackernagel position, which attracts/hosts clitics; (ii) the right margin, which is usually occupied by focal material; and (iii) an area in between which usually contains material with stress positions but with no stress or only secondary stress. This topological tripartition is independent of constituency and clearly reflects phonological principles of word serialization.

13. The structure of the onset is generally irrelevant to rules that are sensitive to syllable weight, in particular stress rules.
14. The observation that accusative pronouns are more frequent than dative pronouns has been restricted to their occurrence in the Wackernagel position because, surprisingly perhaps, dative pronouns seem to be more frequent than accusative pronouns altogether. For instance, the pronoun *ihm* occurs 475,243 in the COSMAS corpus whereas *ihn* occurs only 426,738 times. This bias is due to two facts: first, *ihn* is only used as a masculine pronoun while *ihm* is also used as a neuter form. This fact is negligible, however, because neuter occurrences of *ihm* are very rare. More important is the fact that most German prepositions govern the dative (e.g. *mit* 'with', *ohne* 'without', *zu* 'to', *von* 'from'). Many locative prepositions can be used with either the dative or the accusative. Prepositions that always require the accusative are relatively rare (e.g. *für* 'for').
15. The prose portion of the Paris Psalter contains interlinear translations of the Latin texts and is therefore not a reliable source for syntactic information. In the example given, there is, however, no pronominal element corresponding to Old English *hit* (*tribuisti ei*), so I take it that the word order of (43) is not an artefact of translation.

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