Information Structure Triggers for Word Order Variation and Change: the OV/VO Alternation in the West Germanic Languages

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Information Structure Triggers for Word Order Variation and Change: the OV/VO Alternation in the West Germanic Languages

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CHAPTER 1
INTRODUCTION

1 THE WEST GERMANIC OV/VO DICHOTOMY

The West Germanic languages are characterized by a remarkable variation in word order. The continental varieties, including Dutch and German, have largely Object-Verb (OV) word order, whereas English has strict Verb-Object (VO) word order. Parallel examples from English, Dutch, and German are given in (1), in which the object is printed in bold, the finite verb in italics and the non-finite verb underlined.

(1) **VO**

English	that	he	*has*	eaten	**an apple**	
OV						
Dutch	dat	hij	**een**	**appel**	gegeten	*heeft*
German	dass	er	**einen**	**Apfel**	gegessen	*hat*

The sentences in (1) demonstrate that English, Dutch, and German are closely related; the lexicon shows many similarities, i.e., *apple*, *appel*, *Apfel*, and the languages show much overlap in grammatical structures. It is intriguing that such closely related languages show such a fundamental word order distinction, the more so considering that the older stages of the languages show varying mixtures of OV and VO word order. Earlier English allows OV word order, as is illustrated in example (2) from the 13th century.

(2) for þach þe engel Gabriel *hefde* **his burde** iboked
for though the angel Gabriel had his birth foretold
'although the angel Gabriel had foretold his birth'
(cmancriw, II.124.1591)

Similarly, the example in (3) illustrates that VO was a grammatical option in 16th century Dutch. Example (4) shows the same for 13th century German.

(3) op dat hi *soude* beschamen **die wijsen deser werelt**
so that he would shame that wise this world
'so that he would shame the wise of this world'
(Peerle_1537-38)

(4) daz er ime borge *wolte* **einen benanten ſchaz**
that he him guarantee would a promised treasure
'that he would guarantee him a promised treasure'
(Predigtfragmente, 9a20-21)

A further relevant difference between Present-day English and the continental West Germanic languages is the order of the finite verb (Aux) and non-finite verb (V) verb in periphrastic constructions in subclauses.[1] The order of the finite verb and non-finite verb is strictly Aux-V in Present-day English, as the Present-day English example in (1) shows. Reversing Aux and V would result in an ungrammatical structure. Dutch, on the other hand, freely allows variation in the order of Aux and V, as do several German dialects. The examples in (1) show V-Aux order, but reversing Aux and V results in an equally grammatical structure in these languages.

All the early West Germanic languages display variation in the order of Aux and V - including English. Combined with OV/VO variation, this results in six logical reorderings of O, Aux and V. However, only five of those are attested in the early West Germanic languages, illustrated in (5) with 9th century English examples.
V-O-Aux is not attested in any of the West Germanic languages and is assumed to be ungrammatical.

(5) a. O-Aux-V

and	gif	hi	**þone**	**lofsang**	*willað*	æt	þam
and	if	they	that	psalm	want	at	those
wundrum	<u>singan</u>						
wonders	sing						

'and if they sing that psalm for the miracles…'

(ÆLS_[Swithun]:237.4375)

[1] Another difference is that Present-day Dutch and German are V2 languages, whereas English is not. V2 is also a property of earlier English, but this was lost over the late Middle English and Early Modern English periods (roughly between 1400-1600). Much has been written about the (syntactic) status of V2 in Old English, its loss and how it relates to V2 in other Germanic languages (Fischer et al. 2000; Haeberli 2002; van Kemenade 1987, 2012; Walkden 2015, and many others). The V2 phenomenon is orthogonal to the issue of OV/VO variation, however, although the two types of variation may overlap. In main clauses with only one verb, the object will always follow the finite verb, as example (i) demonstrates. This is not because the order of the object and the verb is VO, but because the verb has moved to the V2 position. This becomes clear when (i) is contrasted with a clause with two verbs, as in (ii). In such cases, the object is in OV position, as the verb remains in its base position.

(i) Hij <u>at</u> **een appel**
'He ate an apple'

(ii) Hij heeft **een appel** <u>gegeten</u>
'He ate an apple'

b. Aux-O-V
þurh þa heo *sceal* **hyre** **scippend** understandan
through which it must its creator understand
'through which it must understand its creator'
(ÆLS_[Christmas]:157.125)

c. Aux-V-O
þæt ic *mihte* geseon **þone** **scinendan** **engel**
that I might see that shining angel
'that I might see the shining angel'
(ÆLS_[Cecilia]:46.7137)

d. O-V-Aux
gif heo **þæt** **bysmor** forberan *wolde*
if she that disgrace tolerate would
'if she would tolerate that disgrace'
(ÆLS_[Eugenia]:185.305)

e. V-Aux-O
þæt he feccan *sceolde* **þæt** **feoh** mid reaflace
that he fetch should the goods with robbery
'that he should steal the goods'
(ÆLS_[Maccabees]:760.5327)

The variation in (5) raises many questions regarding its motivation and its syntactic status, both from a synchronic and diachronic perspective. These questions have been addressed in much previous work and from many different theoretical viewpoints. However, one question that has not received much attention – and which will be the main research question of this thesis – is (6).

(6) Were these languages similar in their earlier stages and did they diverge, or were they already different and did they diverge even further?

This thesis seeks to answer this question empirically, as well as theoretically. The **EMPIRICAL AIM** of this dissertation is to provide a comparative, diachronic, and quantitative analysis of how OV/VO variation is motivated. The central hypothesis is that early Germanic word order was to a (much) larger extent than the Present-day languages governed by information structure. We may therefore formulate the research questions in (7) and (8).

(7) What is the relation between information structure and object position in early English, Dutch, Low German, and High German?

(8) How does the mapping between object position and information structure change?

The **THEORETICAL AIM** of this thesis is to develop a syntactic framework which derives the similarities in word order variation in a unified way, but which is flexible enough to integrate cross-linguistic and diachronic variation.

2 THE GERMANIC LANGUAGES

The focus of this thesis is on the early varieties of the three major West Germanic languages: English, Dutch, and German. This section will briefly discuss the phylogenetic relationships between the West Germanic languages, their relationship to the other branches of Germanic, and their geographical distribution. In addition, it provides the periodization of the language stages included in this thesis.

West Germanic is a dialect group descending from Proto-Germanic, which split from Proto-Indo-European around 500 BC. The internal subgrouping of Germanic is represented in the family tree in Fig. 1. Scholars do not always agree on the precise subgrouping of the various languages, although it is generally accepted that East Germanic first emerged as a separate Germanic branch after the migration of the Goths from southern Sweden to northern Poland, around the Vistula river, in the early first century BC (Hawkins 2008; Robinson 1993). Also undisputed is the split from Northwest Germanic into a separate North Germanic branch from which the present-day North Germanic languages emerge. They "are the products of a very robust heritage of common innovation of all areas of grammar," which clearly set them apart from the other Germanic languages. They are still very similar to this day, partly as a result of extended contact (Harbert 2006: 8).

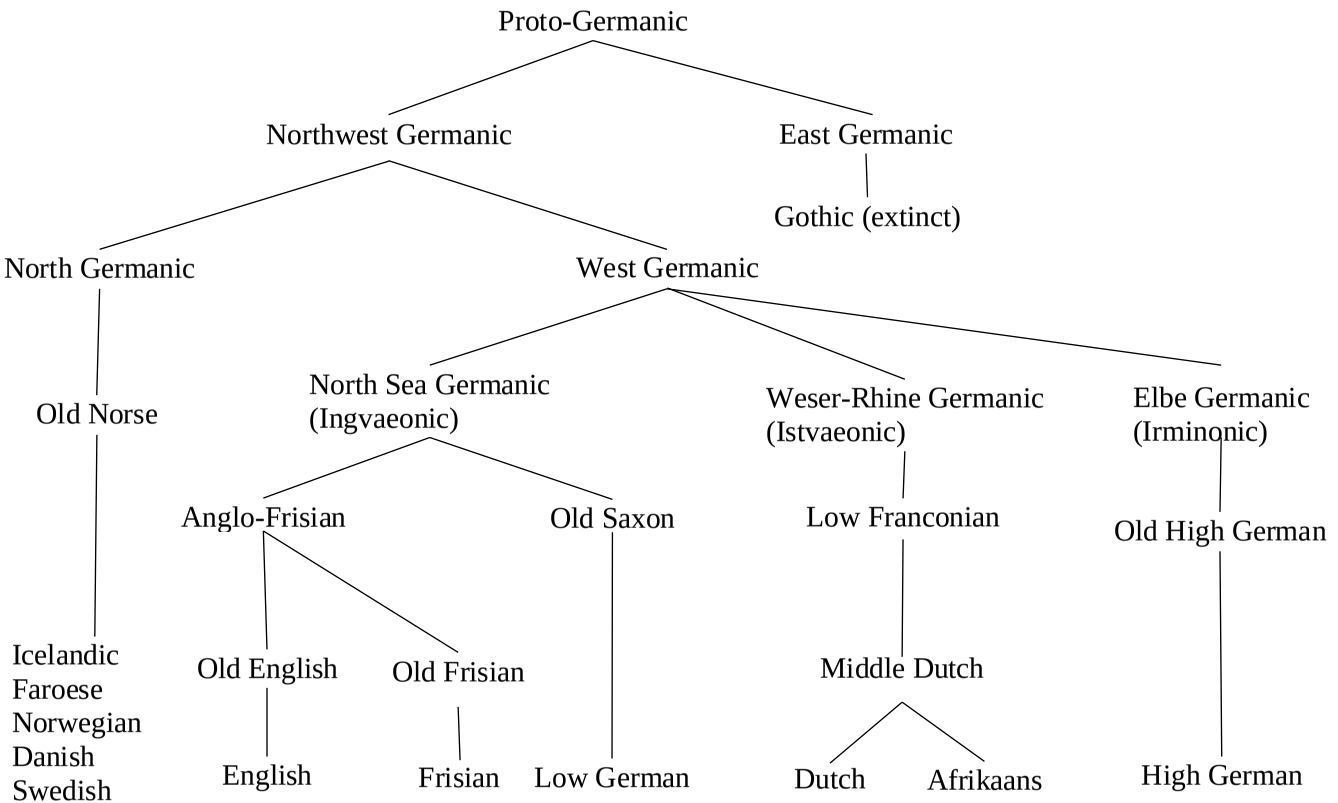


Figure 1. Germanic family tree

The subgrouping of the West Germanic languages as descending from one common Proto-West Germanic ancestor is not without controversy, however (see Stiles 2013 for discussion). It is generally assumed that West Germanic is a collection of at least three dialect groups, named after Tacitus' classification of the Germanic tribes into three groups: Ingvaeonic, Istvaeonic and Irminonic. Fulk (2018) argues that out of these three, only Ingvaeonic, including English and Frisian, may be unambiguously identified as a separate subgroup. The identification of Istvaeonic and Irminonic as separate branches is much less straightforward, because much less is known about these groups. The division between these groups is usually based on whether they have undergone the Second Germanic Consonant shift or not, thus separating Low Franconian and Old High German into two separate branches. Old Saxon occupies an interesting position in the West Germanic dialect continuum in this regard. It is classified together with Old English and Old Frisian as an Ingvaeonic language, but Fulk (2018) notes that Saxon already lost much of the Ingvaeonic features by its earliest attestation as the result of Frankish political dominance starting in the 7th century. Similarly, Harbert (2006) notes that Old Saxon endured many waves of "Germanization" from the south. Old Saxon, in its first attestation, thus occupies an intermediate position between Old English and Old High German.

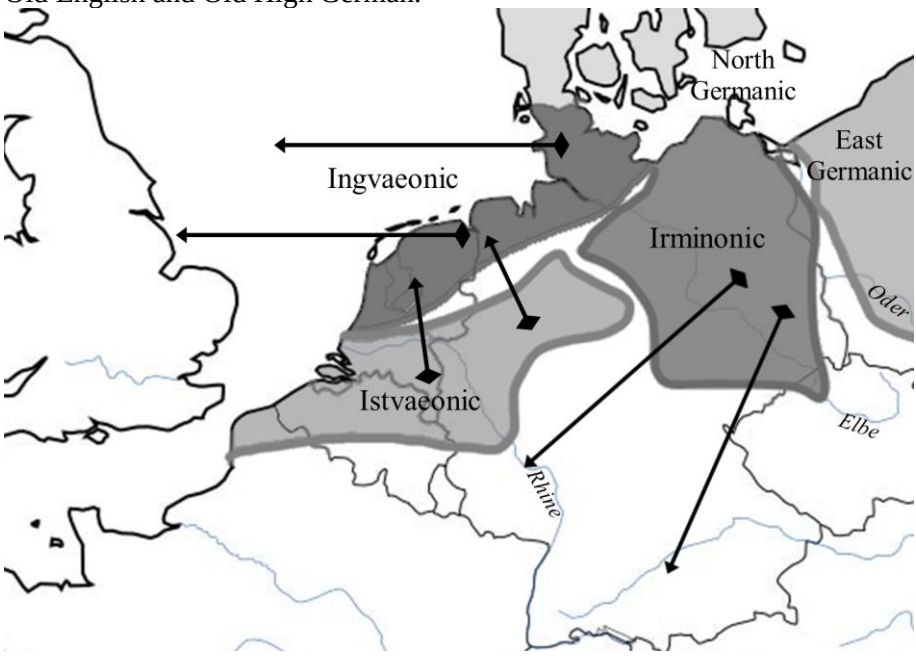


Figure 2. Map of the areal distribution of the three early Germanic dialect and their later spread

The map in Figure 2 provides a general overview of the areal distribution of the three different Germanic dialect groups around the time they were established as separate dialects and indicates their subsequent spread (based on Robinson 1993). Ingvaeonic, or North Sea Germanic, was spoken along the North Sea coast, i.e. the north of the Netherlands and Germany, and extended to the east of the lower Elbe. North Sea Germanic later extended to Britain in mid-fifth century, as the result of mass migration of Angles, Saxons, and Jutes. Istvaeonic, or Weser-Rhine Germanic, was spoken in the area between the Rhine and Weser rivers and extended to the coast of Belgium. Irminonic or Elbe Germanic was spoken around the Elbe river, and later extended south into Germany (Henriksen & van der Auwera 2001; Robinson 1993). The map shows that these languages are geographically contiguous, but not all languages are in close contact with each other. English occupies a rather isolated position, but the language situation in what is now the north of the Netherlands and Germany is quite diverse, with dialects from the three different dialect groups being in close contact with each other.

The empirical part of this thesis is based on a detailed study of OV/VO variation in earlier stages of English, Dutch, Saxon, and High German material[2]. Figure 3 gives an overview of the periodization of the earliest language stages and their attestation. The solid lines indicate that the language is robustly attested in that period, while the interrupted lines indicate that there is no (substantial) written record of the language in that period.

[2] Not included in this thesis is Old Frisian, although it occupies a very interesting position between English and the continental West-Germanic languages. It is the closest relative of Old English in phylogenetic terms, and it is the direct neighbour of Old Low Franconian/Middle Dutch and Old Saxon/Middle Low German. It is not included because its first attestation is relatively young: Old Frisian is first attested in the 12th century. Second, the material that is available is relatively sparse, and not easily accessible (although recently the Corpus of Old Frisian has become available, van de Poel 2019). The status of OV/VO in Old Frisian is left for future research.

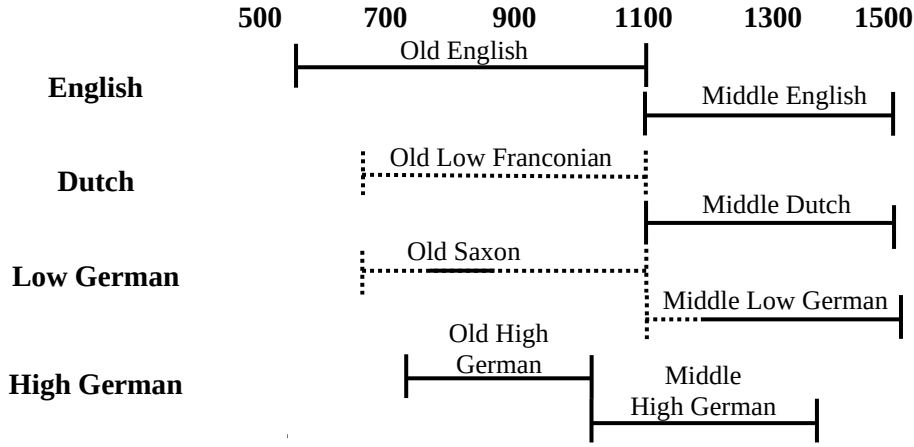


Figure 3. Periodization and attestation of the early Germanic languages.

Early English is robustly attested throughout its history. The start of Old English is generally dated to the sixth century, after the earliest migrations of the Germanic tribes to Britain, taking the Germanic language with them. Old English is attested in a rich number of sources, most of which is original prose not translated from Latin. The transition to Middle English is dated around 1100.

The predecessor of present-day Dutch is generally referred to as Old Low Franconian, a West Germanic dialect group assumed to have been spoken between 700-1100. It is hardly attested, however, as most of the texts from that time were written in Latin. Old Low Franconian mostly survives in several short inscriptions and glosses, with the exception of the *Wachtendonck Psalms*, which comprise a more substantial collection of Psalms written in the 10th century in the form of interlinear glosses accompanying the Latin. However, fragments of the psalms survive only in the form of later copies. Since the attestation of Old Low Franconian is so limited, it will not be included in this thesis. The change from Old Low Franconian to Middle Dutch is generally dated to the 11th century. Middle Dutch is richly attested, mostly in the form of law texts, charters, wills, and other official documents.

Low German, or Saxon, is characterized by an interrupted attestation. Old Saxon is (presumed to be) spoken between 700 and 1100, although it survives in very few substantial texts. The bulk of the material comes from two texts, the *Hêliand* and the *Genesis*, both dated to the 9th century. It is generally assumed that, like the other West Germanic languages, Saxon shifts from the Old to the Middle stage around the 11th century. However, Middle Low German is not attested until the early 12th century. Material written in the intervening time frame was in Latin. Middle Low German gained importance

as a written language during the heyday of the Hanseatic League and was used internationally as a lingua franca. Its attestation is rich in terms of quantity and diversity; it survives in a substantial number of texts from different genres, such as charters, laws, chronicles, and religious texts. Middle Low German as a written language was replaced by Early New High German from the second half of the 16th century onwards.

The periodization of High German differs slightly from that of the other West Germanic languages, especially in the dating of the shift from Old High German to Middle High German. The Second Germanic Consonant Shift is estimated to have been completed around the 7th century, which heralds Old High German (Fulk 2018). The attestation of Old High German is relatively rich; the first written documents are dated to the second half of the 8th century, and its attestation continues until second half of the 11th century. Middle High German is attested in a relatively brief period between 1050 and 1350.

3 The Quest for 'the' basic word order

Much of the early research on OV/VO variation in early West Germanic focusses on the question whether the basic word order in the languages is OV or VO. This question stems from observations in early typological work, which assumes that the order of the verb and object is a fundamental property of languages, and that OV and VO are each typologically associated with their own distinct set of syntactic characteristics (i.e. Dryer 1992; Greenberg 1963; Lehmann 1973; Vennemann 1976). An OV language is thus taken to be essentially different from a VO language. From this perspective, Present-day English and Present-day Dutch and German are radically different languages, but it is unclear whether they were already different in their early stages, as they display syntactically similar word order variation. This is especially interesting in light of the hypothesis that Proto-Indo-European is presumed to be a basic OV language with optional VO (Delbrück 1900; Hock 2015; Viti 2015).

The underlying assumption in much formal work on the status of OV/VO in early Germanic is that the surface word order reflects the base order of the VP. When there is variation in the position of the object, the syntactic correlates of OV and VO languages may be used to identify the base order of the VP. Any deviation from this underlying word order is the result of leftward movement (from a VO base) or rightward movement (from an OV base), although it has also been argued that OV/VO variation is the result of variation in the underlying word order.

Haider (2020) outlines the key syntactic correlates of Present-day Germanic OV and VO languages, which are summarized in Table 1. The correlates that are most frequently discussed in the literature on early

Germanic OV/VO variation are the position of particles (and other light elements), and the order of the auxiliary and the non-finite verb.

Particles are argued to be a relevant diagnostic for underlying word order in languages with OV/VO variation, because they are assumed to be prosodically light (although they may receive primary stress) and generally resist extraposition (Pintzuk 1999). The order of particle verbs is particle-verb in OV languages, and verb-particle in VO languages. This means that post-verbal particles are indicative of a VO grammar, as they cannot be the result of extraposition. From this perspective, Old High German is an OV language, as there are hardly any postverbal particles in Old High German which are not the result of Latin influence (Axel 2007; Fuß 2018). Similarly, there are no postverbal particles in Middle Low German (Petrova 2012b).

	OV	**VO**
Particle verbs	Particle ← V	V → Particle
Resultatives	Resultative ← V	V → Resultative
Order of auxiliaries	… (XP) V ← Aux	… Aux → V (XP)
VP-medial adverbs	✓ [DP adverb V]$_{VP}$	✗ [V adverb DP]$_{VP}$
left-adjoined adverbs	unconstrained	head-adjacency
VP-internal scrambling	✓ [DP$_i$ DP e$_i$ V]$_{VP}$	✗ [V DP$_i$ DP e$_i$]$_{VP}$
V-V-complementation	…[…[V° V°]]$_{verbal\ cluster}$]$_{VP}$	… [V°[V° …]$_{VP}$]$_{VP}$
Expletive or quirky subject	Excluded	Obligatory expletives

Table 1. Syntactic correlates of basic OV and basic VO languages (Haider 2020: 342)

Pintzuk (1999) further argues that pronouns are, like particles, light elements and can also be used as a diagnostic for the underlying word order of a language. In Old High German and Middle High German, these are again preverbal in the majority of the cases (Axel 2007; Sapp 2014, 2016). The position of particles does not feature prominently in the literature on Middle Dutch, but the consistent preverbal position of pronouns suggests that Middle Dutch is an OV language (Burridge 1993). The postverbal position of the object is generally considered the result of extraposition in early English and

Dutch (Blom 2002; Burridge 1993; Coussé 2009 on Middle Dutch; Sapp 2014, 2016 on early High German).

The situation in English is more complex, however. van Kemenade (1987) argues that Old English is OV, as the majority of the particles is preverbal, although she notes that there are exceptions. Pintzuk (1996, 1999) takes this as evidence that Old English has an OV grammar and a VO grammar. She combines this with the observation that V-Aux order must reflect underlying OV order. This follows from the correlate in Table 1 that only OV languages allow variation in the order of V and Aux, as opposed to the strict Aux-V order in VO languages. It also follows from the observation that V-O-Aux order is unattested: V-Aux word order cannot be combined with an underlying VO VP[3]. Pintzuk finds no examples of postverbal particles, pronouns, or light adverbs in postverbal position in V-Aux clauses. In contrast, she finds postverbal light elements in Aux-V clauses. She concludes from this that particles and pronouns cannot move rightward, as they do not occur in clauses which are, under the assumption of strict word order in the VP, unambiguously OV. The examples she finds in Aux-V clauses must therefore be the result of a VO grammar. The variation in Old English is thus a case of Grammar Competition (Kroch 1989), in which speakers have more than one grammar at their disposal.

From this perspective, early Dutch and German have always been OV languages; they never allowed postverbal particles, and still allow Aux-V and V-Aux variation to this day. In Old and Middle English, however, V-Aux orders are lost, which is another indication that English shifted from an OV to a VO language according to the correlates in Table 1. Pintzuk (1996, 1999) extends the Grammar Competition hypothesis to variability in the headedness of IP as well. She assumes that the finite verb always moves to I (T in modern terms), and that IP can be either head-initial or head-final. This naturally follows from the assumption that there must be underlying VO structures in the language: head-initial VP can only be combined with a head-initial IP.

These observations suggest that the continental West Germanic languages display diachronic consistency; they were always OV languages, and only lost the option to extrapose the object to the right of the verb. The situation in English is radically different, however. Taylor & Pintzuk (2012b) argue that pre-English was like continental West Germanic and was consistently head-final in its earliest stages. Around the time of *Beowulf* English developed a head-initial TP, which could compete with a head-final TP. The language develops a head-initial VP in the Old English period. The variation in headedness between TP and VP continues until approximately 1250, when the

[3] Referred to in the literature as the Final-over-Final Constraint (see Sheehan et al. 2017 for discussion).

head-final TP and VP are lost. English thus gradually transitions from a 'true' OV language to a 'true' VO language, with a period of sustained variation between the two grammars.

With the advent of Kayne's Antisymmetry framework (Kayne 1994) the issue of basic word order has become an issue of surface word order, and how this is derived, rather than of syntactic basic order. In Kayne's framework, all phrases are constructed according to a universal spec-head-complement configuration[4]. In essence, the basic structure of any West Germanic clause is Aux-V-O in this approach. In fact, rightward movement is ruled out by definition; patterns deviating from the basic Aux-V-O structure must be the result of leftward movement. The order of the object and its complement is not the result of a rather strict parameter setting in the syntax, but it is the result of triggers in the syntax. This derives all word order patterns (Biberauer & Roberts 2005; Walkden 2014; Wallenberg 2009; Zwart 1994).

This brief section on the discussion of the syntactic status of OV/VO variation in early Germanic has demonstrated that its derivation is by no means straightforward. In fact, all possible derivations have been proposed in the literature:

(9) a. Basic OV with rightward extraposition
b. Variation in headedness of VP: OV and VO are both base-generated
c. Basic VO with leftward movement

Much of the previous research focusses on the syntactic status of OV/VO variation of individual languages and it is not always clear how the conclusions that are drawn hold up to cross-linguistic scrutiny. In addition, many early formal analyses of OV/VO variation are not concerned with the factors that motivate this variation. Understanding how the variation is motivated, however, seems crucial in finding the similarities and differences between OV/VO variation in early West Germanic.

[4] Haider (2013) likewise argues that there is a universal base structure and a general ban on rightward movement, although his premises are different. He assumes that all structure is universally right-branching (i.e. OV), and that the dichotomy in OV and VO languages is the result of the direction in which the verb licenses the verb. If objects are licensed to the left of the verb, the verb remains in its base position. If the objects are licensed to the right of the verb, the verb moves to a position above the object, so that the object is in its licensing domain. In addition, Haider argues that there is a third type of language – one in which the directionality of the verb is not specified. Objects may be merged in either an OV or a VO way. The loss of OV/VO is the result of the directionality parameter becoming fixed.

4 THE ROLE OF INFORMATION STRUCTURE

Recent work on OV/VO variation has focussed on the influence of information structure on the position of the object. The term information structure is introduced by Halliday (1967) to refer to the partitioning of a clause into a part that is more informative, and a part that is less informative. The general observation is that relevant information follows less relevant information (i.e. the Given-before-New principle, Gundel 1988; Gundel, Hedberg & Zacharski 1993). Applied to OV/VO variation, this leads to the hypothesis that given objects are more likely to surface in preverbal position, and objects that are new are more likely to surface in postverbal position.

The precise classification of relevant and not so relevant information has received much attention in the literature on information structure, which has resulted in a (rather bewildering) number of labels and definitions, such as *given-new*, *topic-comment* or *background-focus*, which overlap to some extent, but which differ in details (see Féry & Ishihara 2016 for a concise overview of the various labels and their definitions, based on Krifka 2008). In addition, not every information structural label is always applied in the same way by individual researchers. This diversity in information structure labelling is also reflected in earlier work on OV/VO variation. The information structure framework that is used and the way constituents are annotated differs substantially among researchers, and in some cases the annotation schemes that are used are not clearly defined, which makes it difficult to compare the outcomes of the various studies. An additional problem from a comparative perspective is that each study uses its own underlying structural assumptions about the language(s) to inform the data selection criteria. However, the results all point in the same direction: early Germanic OV/VO is information-structurally motivated.

Taylor and Pintzuk (2011, 2012a, 2012b) study the influence of information structure on Old English clauses. They take the premises of the Double Base Hypothesis (Pintzuk 1999) as their starting point and hypothesize that there is an information structural effect on postverbal objects in V-Aux clauses, but not in Aux-V clauses. In their approach V-Aux-O is unambiguously derived by rightward movement from an O-V-Aux base, as V-O-Aux order is ungrammatical. In contrast, Aux-V-O is ambiguous between base-generated VO and rightward movement from an OV base. Hence, Taylor and Pintzuk do not expect an effect of information structure in these clauses. In their approach, the position in which an object is base-generated is independent of its information status. The effect of information structure is only visible in derived constructions. In addition, while O-Aux-V must be derived by leftward movement in Taylor and Pintzuk's account, they are excluded because Taylor and Pintzuk assume that these orders are the result of factors other than information structure (although they do not

motivate why). They code objects according to a binary given-new coding scheme and find a significant effect of information structure in V-Aux clauses, but not in Aux-V clauses. The same methodology is applied by Walkden (2014) to the Old Saxon *Hêliand*. The findings suggest that Old Saxon patterns similar to Old English. There is a significant effect of information structure in V-Aux clauses, but not in Aux-V clauses.

Petrova (2012a) and Petrova and Speyer (2011) also study OV/VO variation in Old English, but they study the effect of focus. They define focus as the presupposition of the existence of a salient set of alternatives in the context. They distinguish two types of focus: presentational focus and contrastive focus. Presentational focus is the selection of a referent out of a set of alternatives, which updates the common ground. Contrastive focus applies to the explicit presence of alternatives. However, Petrova and Speyer determine the focus structure of a clause on the basis of a given-new distinction, although they are not specific in what counts as given and new information in their framework, and how this maps onto the focus structure of the clause. They assume that a new object is also the focus of the clause, but focus-background and given-new are usually considered different information structure distinctions and cannot be used interchangeably (cf. Krifka 2008; Petrova & Solf 2009). The analysis in Petrova (2012a) is qualitative, but Petrova and Speyer (2011) present some data which suggest that new objects are more likely to surface in VO order, although the majority of objects is OV. In contrast to Taylor and Pintzuk, Petrova and Speyer include O-(S)-Aux-V clauses and argue that these objects are always contrastively focused.

Hinterhölzl and Petrova (2018), Petrova (2009) and Petrova and Hinterhölzl (2010) present qualitative studies of the effect of focus on OV/VO variation in Old High German. "O" in their analysis refers to any constituent that is not a verb. They argue that there is a one-to-one mapping between the information status of a constituent and its position in the clause. Contrastive elements are immediately preverbal, while focussed elements are postverbal. However, these findings are not corroborated by Sapp (2016), who demonstrates quantitatively that while focussed constituents are more likely to be postverbal, the mapping between position and information status is far from categorical. Sapp (2014) demonstrates that Middle High German and Early New High German OV/VO variation is a continuation of Old High German, although the frequency of VO reduces.

Middle Dutch OV/VO variation has also been argued to be the result of focus. Blom (2002) argues that many objects in VO order are focus constructions, although she does not provide a definition. Coussé (2009) studies the effect of focus indirectly. She assumes that there is a correlation between the type of constituent and its information status (based on Givón's 1983, 1988 *code-quantity* principle), and translates this to a coding scheme

based on the definiteness of the object. Pronouns are least likely to be focussed, followed by definite noun phrases and then indefinite noun phrases. She considers objects with a relative clause most likely to be focused, as these are heavy. Her results indicate that indefinite and heavy objects are more likely to be postverbal than definite objects and pronouns.

The previous studies on the interaction between information structure and object position in early West Germanic all seem to point to the conclusion that the two are related, and that object position is to some extent determined by information structure. However, the different structural assumptions and information structural coding schemes do not allow a conclusion beyond this general observation.

5 Focus and outline

The discussion in the previous section has shown that while OV/VO variation has received much attention in the literature on the individual West Germanic languages, a clear comparative perspective is lacking. This is largely because most of the studies focus on one language (stage), using their own assumptions about the structural analysis of the languages, which in turn inform the selection criteria for the data. The studies that focus on information structure each use their own definitions of information structure, and corresponding annotation scheme. While most of the studies subscribe to some form of the idea that given objects are more likely to be preverbal and new objects more likely to be postverbal, the outcomes of the studies are not readily comparable or compatible. As a result, a detailed understanding of the differences and similarities in West Germanic OV/VO variation is still lacking. This thesis is the first to address the issue of OV/VO variation in early Germanic from a comparative perspective by means of a quantitative analysis of factors that motivate the variation. This section will outline the approach to the data, the annotation, and the analysis.

5.1 The corpora

The empirical part of this thesis is based on comprehensive corpus studies on early English, Dutch, and German. An overview of the corpora that are used for each language stage is provided in Table 2.

Old English	York-Toronto-Helsinki Parsed Corpus of Old English Prose (YCOE, Taylor et al. 2003)
Middle English	Penn-Helsinki Parsed Corpus of Middle English, second edition (PPCME2, Kroch, Taylor & Santorini 2000)
Old Saxon	Heliand Parsed Database (HeliPaD, Walkden 2016)
Middle Low German	Corpus of Historical Low German (CHLG, Booth et al. 2020)
Middle Dutch	Corpus Gysseling (2021) Corpus van Reenen-Mulder (CRM, van Reenen & Mulder 1993) Corpus Laatmiddel- en Vroegnieuwnederlands (CLV, van der Sijs, van Kemenade & Rem 2018) Compilatiecorpus Historisch Nederlands (CHN, Coussé 2010)
Old High German	Referenzkorpus Altdeutsch (ReA, Donhauser, Gippert & Lühr 2017)
Middle High German	Referenzkorpus Mittelhochdeutsch (ReM, Petran et al. 2016)

Table 2. Overview of corpora

The corpora differ substantially in the level of syntactic enrichment. Hence, different strategies were employed to collect the relevant data. Ideally, the sample of source material contains texts that represent authentic language. That is to say, the texts are ideally 1) not translations, to avoid transfer from the source language, 2) not written in verse to avoid metrical influences, and 3) non-formulaic in terms of language use. Whenever possible, texts that fall in any of these categories were excluded. However, for Old Saxon and Old High German, for instance, the attestation is so limited that all source material would have to be excluded if the criteria for authentic language use are strictly enforced. In these cases, all material was included in the analysis and possible translation or metrical effects were given special consideration.

The Old English and (early) Middle English data were collected from the syntactically parsed YCOE and PPCME2 corpora, respectively. Old and Middle English are both richly attested in a large collection of native sources, which makes it possible to restrict the dataset to texts which are most likely to unambiguously reflect authentic syntax. The Old English dataset is restricted to texts from the O23 and O3 period (850 -1050) and excludes official

documents. In addition, translated texts were excluded from the main analysis. A separate sample of translated texts was used to study the possible influence of Latin on OV/VO variation (cf. Chapter 3, section 3.2.4). The early Middle English dataset contains all texts from the M1 section of the PPCME2, except for official documents, law texts and the *Ormulum*, which is written in strict metrical verse (cf. Appendix 1, Table 1 for an overview of the texts included). The data were retrieved automatically by querying XML versions of the relevant texts using the XQuery query language in *CorpusStudio*[5] (Komen 2011b), a program designed to query syntactically annotated texts and automatically generate a database with user-customized features, which can be further annotated within *Cesax* (Komen 2011a).

Old Saxon survives in only two major texts, the *Hêliand* and the *Genesis*. This rather sparse attestation does not afford me the luxury of being picky in the selection of texts. Yet, the *Genesis* is excluded from the present study as it survives in only three relatively short fragments, which makes the text less suitable for the study of information structure. The *Hêliand*, however, is a substantial text which has been preserved in its complete form. It is available in the syntactically parsed HeliPaD, which follows the same annotation guidelines as the historical English corpora. The text can thus be queried in the same way as the Old and early Middle English dataset. Middle Low German is more richly attested in a variety of texts. The material used for this study comes from the CHLG, which contains a selection of syntactically parsed texts, which are diachronically balanced for dialect and genre. The texts all represent original, native Middle Low German; they are not translated, and are unambiguously dated and localized. The corpus is only available via an online interface[6], which allows users to query the texts using the CorpusSearch (Randall, Taylor & Kroch 2005) query language.

Where Old Low Franconian survives in only a small number of short texts, Middle Dutch is richly attested in many official documents, such as charters and wills. There is no single corpus available which contains a diachronic and representative sample of Middle Dutch texts, so the material was collected from various individual sources, as indicated in Table 2. Not all material included in the various corpora is included in the present study. Instead, I

[5] CorpusStudio provides a user-friendly interface to query corpora. It supports the CorpusSearch (Randall, Taylor & Kroch 2005) query language which was originally developed to query the historical English corpora. CorpusStudio is enriched with the option to query XML versions of the texts in the corpora using XQuery, a language which is generally used to query XML files of any type, not just corpora. The advantage of using XQuery is that it allows for more precise searches, because it is less restrictive in its application compared to CorpusSearch, which contains a relatively limited fixed set of search functions.

[6] https://www.chlg.ugent.be/corpus/

created a representative subcorpus which contains a relatively balanced sample of source material from various time periods, dialects, and genres. An overview of the texts included in this thesis is given in Appendix 2. None of the Dutch corpora are syntactically annotated or parsed, so relevant clauses were collected manually.

The Old High German source material was collected from the ReA, which may be accessed through the ANNIS interface (Krause & Zeldes 2016).[7] The corpus is not fully parsed, although some syntactic annotation is provided. It was possible to create a subcorpus of subclauses with two verbs, but clauses which also contained an object had to be manually extracted. Middle High German source material was collected from the ReM, which can also be accessed through the ANNIS interface.[8] Syntactic annotation is limited in this corpus, and relevant clauses were extracted manually. Since the Middle High German attestation is quite rich, I created a subcorpus which contains a representative sample of source material that is balanced in terms of dialect and genre (based on the selection in Catasso 2021).

5.2 Selection criteria

The analysis is based on subclauses with a finite verb, a non-finite verb, and a direct object, as using subclauses with two verbs controls best for finite verb movement. All early West Germanic languages display V2 in main clauses, while finite verbs generally remain low in subclauses (see fn. 1). A second reason to focus on clauses with two verbs is that the order of the finite verb and non-finite verb features prominently in the literature on early English, as discussed in section 3.

One of the reasons why previous studies on OV/VO variation in early Germanic are not readily comparable is because they do not use the same definition of "O". In most cases, "O" is more than just the direct object, and it frequently includes anything that may surface in a position preceding or following the verb, including arguments like the direct object, indirect object, or subjects, but also adjuncts such as PPs or adverbs. The constituents have different grammatical functions in the clause and may be subject to different syntactic constraints. To prevent interference from an effect of constituent type, the present study focusses on objects only. While indirect objects are also objects, they cannot be treated on a par with direct objects, as their syntactic and functional status is different. Direct objects are base-generated as the complement of V, whereas indirect objects are base-generated in Spec,VP. In addition, direct object and indirect objects tend to be associated with different thematic roles and different functions within the clause and

[7] https://korpling.german.hu-berlin.de/annis3/ddd
[8] https://annis.linguistics.rub.de/annis/annis3/REM/

within discourse. For this reason, the analysis is restricted to direct objects only.

5.3 Annotation: weight and information status

All direct objects are annotated for two features: WEIGHT and INFORMATION STATUS. This subsection outlines the approach to both these variables.

5.3.1 Weight

While the main focus of this dissertation is on the influence of information structure, WEIGHT has been shown to significantly influence the surface position of objects as well. Languages in general tend to place heavy constituents later in a sentence than light constituents, following the End-Weight principle (after Quirk et al. 1972, see also Behaghel 1909, Wasow 2002). In fact, Hawkins (1994) has suggested that all word order variation is the result of weight. In early Germanic longer constituents are also more likely to surface in postverbal position, compared to shorter constituents, as has been shown in many earlier studies on early Germanic OV/VO variation (Sapp 2014; 2016 on early High German, Taylor & Pintzuk 2012a on Old English, Walkden 2014 on Old Saxon). A study of the influence of information structure on OV/VO variation thus also needs to take the effect of WEIGHT into account.

There are many ways to code the weight of a constituent. It can be measured in terms of phonological properties, such as the number of syllables or lexical stresses, or in terms of syntactic properties such as the number of syntactic phrases or the level of embedding. A more ad-hoc approach is measuring constituent WEIGHT based on orthography, i.e. by counting the number of letters or words in a constituent. Comparisons of the various metrics, such as Szmrecsanyi (2004) and Grafmiller & Shih (2011), demonstrate that constituent weight metrics are highly correlated and do not lead to significantly different models, especially when the focus of a study is on another factor as is the case in the present thesis. Constituent weight in the present study is measured by counting the number of letters in an object, as this is one of the most straightforward ways of operationalizing WEIGHT. In the statistical analysis WEIGHT is log-transformed to reflect the intuition that an increase from, say, a 5-letter object to a 15-letter object is a much more significant increase in weight than an increase from a 45-letter object to a 55-letter object, even though the increase is the same in absolute numbers.

5.3.2 Information status

It was already noted in section 4 that information structure is not a uniform theoretical term. The (general) literature on information structure abounds in information structure categories and labelling. Many of these information

structure categories are identified on the basis of isolated examples, such as question-answer pair, as Lüdeling et al. (2016) point out. The focus of the answer in (9), which in the sense of Krifka (2008) indicates the presence of alternatives, can be easily identified; the question clearly indicates that the answer will involve one of the people in the room. The answer singles out the one individual from the set of alternatives.

(9) Q: Which one of you is Ted?
A: That's [ME]$_{\text{FOCUS}}$

(Lüdeling et al. 2016: 600)

Corpus data rarely contain such restricted contexts, however. For example, identifying the focus of a naturally occurring example such as (10) is not so straightforward. There is no indication of whether there are any alternatives to any of the constituents in the clause, and it may in fact be the case that the entire sentence is in focus, not just an individual constituent. However, in the absence of relevant context and prosodic cues such as intonation and stress we cannot be sure.

(10) Later I got to know Heidi.
The weeks began in which I would login to chat forums as Paulus

(Lüdeling et al. 2016: 600)

These challenges are even greater in historical data, where we also need to make inferences about the historical context in which the text was written. Bies (1996) notes, studying the effect of focus (in the sense of Vallduví 1990, i.e. singling out the informative part of a clause) on Early New High German OV/VO variation that in many cases the focus of a clause cannot be unambiguously determined, because the proper context is lacking. Annotation of information structure in historical texts is to a large extent the interpretation of the communicative purpose of the speaker or author, but without access to the context in which the utterance was produced. This creates a potential pitfall for annotators of information structure: it results in too much subjective interpretation on the part of the annotator. For that reason, it is important that source material is annotated according to a well-defined annotation scheme, which is based on guidelines that are as objective and as unambiguous as possible. This makes the results and the conclusions based on these results more reliable, and crucially, replicable (see also Lüdeling et al. 2016 for discussion).

One strategy may be to code information structure based on syntactic correlates, such as definiteness (as in Coussé 2009 on Middle Dutch). Gundel,

Hedberg and Zacharski's (1993) Givenness Hierarchy postulates a correlation between the shape of an English DP and its information status: objects with a demonstrative determiner are activated or familiar, while objects with an indefinite determiner are type identifiable, i.e. they do not identify a specific object, but the listener can think of an example. The correlation between the syntactic form of an object and its information status is not direct, however. For instance, an object with a demonstrative determiner is in most cases given, but it can also be used in discourse-new contexts in Present-day English. The sentence in (11) can be uttered at the start of a conversation, without having mentioned *this woman* before.

(11) I met this woman the other day and she told me the most inspiring story.

Similarly, it has been argued for Modern German that different types of articles are associated with different information structural interpretations. Schwarz (2009) argues that the weak definite, indicated by the contracted form in (12a), merely signals uniqueness, whereas the strong definite, without contraction in (12b) indicates anaphoricity.

(12) a. Hans ging zum Haus
Hans went to-the$_{\text{WEAK}}$ house
'Hans went to the house'
b. Hans ging zu dem Haus
Hans went to the$_{\text{STRONG}}$ house
'Hans went to the house.'

(Schwarz 2009: 7)

While there is a subtle difference in the meaning of the two sentences in (12), it is still possible that (12a) is referential. Similarly, strong definites may also appear without an antecedent, much like the English example in (11). A further complicating factor in using a syntactic reflex as a proxy of information structure is that the determiner system is undergoing significant diachronic change in the early Germanic languages (cf. Allen 2016, 2019, Crisma 2011, Denison 2006, Watanabe 2009 on early English and the contributions in Szczepaniak & Flick 2020 on early German). Using definiteness marking as a proxy for information structue may lead to confounded results: the results would reflect the effect of a changing determiner system on OV/VO variation, which is essentially the correlation between two syntactic changes, but not the effect of information structure on OV/VO variation. In addition, there may be differences in the syntactic, pragmatic, and semantic uses of determiners between the different languages.

Again, this may lead to confounding results: any difference between the languages may be the result of a syntactic or semantic difference in the use of determiners between the languages, but not a difference in information structure marking strategies. Regardless of the determiner system or its position in the clause, objects will always have an information status – which is why information structure is annotated on the basis of the actual referentiality of the objects, rather than on the basis of a syntactic correlate.[9]

The annotation scheme that is adopted throughout this dissertation is based on the information status of objects, which is determined on the basis of textual (co)reference following the Pentaset guidelines (Komen 2013). The Pentaset is based on the notions of referentiality and anaphoricity. Referentiality indicates the "relation between a linguistic expression and a corresponding non-linguistic (conceptual) entity in (a model of) the speaker/hearer's mind, the discourse, or some real or possible world, depending on where the referents or corresponding meanings of these linguistic expressions are assumed to reside" (Gundel 2003: 125). If an object is referential, it becomes part of the discourse and may be referred back to in subsequent discourse. Anaphoricity refers to "a relation between two linguistic elements, wherein the interpretation of one (called an anaphor) is in some way determined by the interpretation of the other (called an antecedent)" (Huang 2000: 1). Objects can be referential and anaphoric at the same time. In fact, any anaphoric object is by definition also referential: the anaphor refers back to some earlier established discourse referent. If an object is referential and anaphoric, the object is discourse-given. If an object is referential, but non-anaphoric, it establishes a new discourse referent and is thus discourse-new. If an object is non-referential and non-anaphoric, it is inert and does not establish a discourse referent and cannot be referred back to. Note that this classification goes beyond the grammatical form a constituent: while definiteness marking is typically associated with referentiality, this does not immediately imply that a definite object is also anaphoric. Whether or not a definite object is anaphoric depends on its use and the context.

[9] This is not to say that the changes in the determiner system may not have affected OV/VO variation and its loss. In fact, it is argued explicitly in Chapter 3 that the two are related.

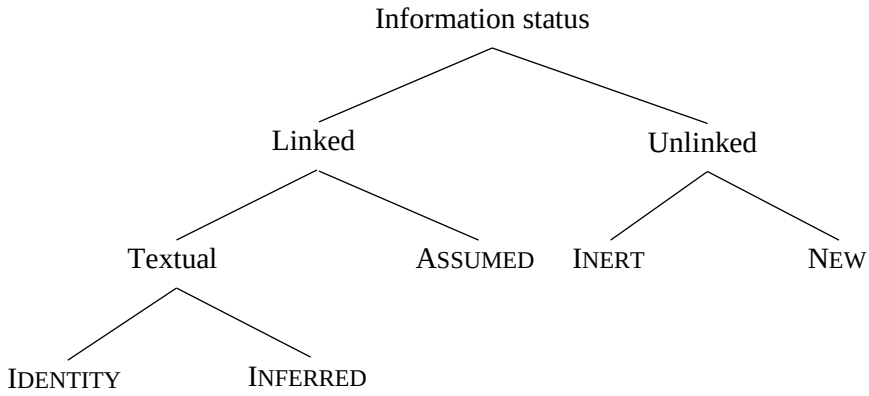


Figure 4. The Pentaset information status labels (Komen 2013: 144)

The Pentaset distinguishes five referential state primitives – IDENTITY, INFERRED, ASSUMED, NEW, and INERT, which are illustrated in Figure 4. The labels are assigned based on whether objects are referential and whether they are (textually) linked to an antecedent, i.e. whether they are anaphoric. Objects can establish a referential and anaphoric discourse referent which is not linked to an antecedent in the text, but is instead linked to an extratextual antecedent (ASSUMED). ASSUMED objects are part of world/encyclopedic knowledge or are situationally evoked. Objects which have a textual link to an antecedent may be further divided into two different categories, based on whether the link is direct (IDENTITY) or indirect (INFERRED). IDENTITY objects have been mentioned explicitly before and have an identical antecedent. The existence of INFERRED objects may be inferred from the existence from another, closely related, referent. These are cases of elaborating inferables in the sense of Birner (2006) and are frequently cases of inalienable possession or denote part-to-whole relationships. If objects are not linked to a discourse referent, they are divided according to whether they establish a new discourse referent (NEW) or not (INERT). NEW objects are referential; they establish a new discourse referent and may be referred back to later in the text, but they are not anaphoric. INERT objects are non-referential; they do not establish a discourse referent, and do not participate in the larger discourse structure. Each of the chapters in this dissertation contains a detailed overview of the application of this coding scheme, including examples. Further details may be found in Appendix 1.

5.4 Statistical analysis

The results for each individual language were analysed using a mixed-effects regression model (Baayen 2008, Gries 2015). A regression model is

essentially a mathematical approximation of the correlation between the dependent variable and one or more predictor variables, and it tells us whether the probability of an object occurring in a particular word order pattern is higher or lower when compared to another word order pattern, given the values of the independent variables INFORMATION STATUS and WEIGHT. I will not go into the mathematical details of the analysis, but I will briefly outline the basic premises of the model and how the results should be interpreted.

Word order is defined as the dependent variable. It is a categorical variable, which means that the model predicts the probability of OV word order occurring compared to VO word order.[10] The independent variables are INFORMATION STATUS and WEIGHT. WEIGHT is added to the model as the log-transformed number of letters of an object and is hence a continuous variable. The model calculates the effect of an increase in the value of WEIGHT on the probability that an object will appear in OV as opposed to VO word order. INFORMATION STATUS is defined as a binary categorical factor, which may take the values of GIVEN or NEW. Because all objects labelled IDENTITY, INFERRED and ASSUMED are explicitly linked to an existing referent, these were collated into one category GIVEN to facilitate statistical processing, as the three information status categories behave similarly with regard to positioning in the clause (Taylor & Pintzuk 2014). INERT objects were excluded from the statistical analysis, because the focus of this thesis is on the behaviour of referential objects. The model predicts the probability of OV occurring (compared VO), when the information status is GIVEN and compare this to the probability of OV occurring when the object is NEW. INFORMATION STATUS is added as a dummy-coded variable. That is to say, the categorical variable is entered to the model using the mathematically interpretable contrasts, such as 0 and 1, which each represent an INFORMATION STATUS level.

The model calculates the effect of each predictor variable on the outcome variable independently, while keeping the effect of other factors constant. To be precise, the effect of INFORMATION STATUS is calculated while controlling for the fact that some of the variation is explained by WEIGHT and vice versa. If both factors turn out to be significant, this means that they both independently influence the outcome word order and that the variation in the sample cannot be reduced to either one of those factors.

The model returns several values that are important for the interpretation of the results: the regression coefficient, the *p*-value, and the Odds Ratio. The regression coefficient (usually indicated by *b* or β) indicates whether the

[10] Chapter 2 analyses the results by means of multinomial logistic regression. This is a regression model with more than two outcome variables, as it predicts the probabilities of the word order patterns in (5). The underlying logic behind the model is the same, but applied to more outcome variables.

predictor variable has a favouring effect on the outcome variable (when it is positive), or a disfavouring effect (when it is negative). The regression coefficient is a poor indicator of effect size, however. The size of the effect is best gleaned from the Odds Ratio, which is the exponent of the regression coefficient. If the Odds Ratio is above 1, it indicates a favouring effect on the outcome, whereas an Odds Ratio below 1 indicates a disfavouring effect on the outcome. The *p*-value indicates whether this effect is indeed significant.

The advantage of mixed-effects modelling is that it allows the user to control for variation that is the result of random variation in the sample, such as individual texts or authors. If random factors are not added to the model, the model will treat each observation as an individual case, whereas in reality several observations may be grouped together because they come from the same text or were written by the same hand. The significance of the fixed factors, i.e. the independent variables such as INFORMATION STATUS and WEIGHT may be predicted wrongly (in a positive or negative way) because individual variation is not taken into account (Gries 2015, Johnson 2009). For that reason, SOURCE TEXT is added as a random effect whenever the dataset contains material from more than one source.

5.5 Theoretical framework

The theoretical part of this dissertation follows the general line of inquiry set out in the Minimalist Program (Chomsky 1995, 2000, 2001b). I take an antisymmetric approach to clause structure, which means that all phrases are formed according to a universal spec-head-complement configuration (Kayne 1994). The derivation of the word order patterns in (5) are the result of leftward movement of constituents to Spec,*v*P triggered by an Edge Feature (EF, the modern incarnation of Chomsky's EPP feature) on *v*. I assume that after each movement a copy of the constituent is left in its original position (following The Copy Theory of Movement, Nunes 2011).

The properties of *v* play a crucial role in the analysis; *v* is the locus of variation, both within and between languages. This idea is based on the observations in González-Vilbazo & López (2012) who argue, in an incarnation of Borer's (1984) original hypothesis, that *v* as a functional category is subject to cross-linguistic parametric variation and that it is involved in both the linearization of the verb and object and information structure encoding. The order of the verb and object is determined by attraction of an EF to Spec,*v*P. This EF feature can be selective, as I argue in Chapter 3 on early English, and only attract objects of a certain structure. It may also be non-selective, as argued in Chapter 5 and 6 for early German, and attract all objects.

Information structure is tied to *v* by virtue of *v* being a phase head. It is assumed that there are no dedicated information structure phrases in the syntax

(as in, for instance, the cartographic framework, cf. Rizzi 1997). Instead, information structure utilizes the syntactic structure that is available. At the completion of each phase, the syntactic chunk is sent to the interfaces. This is where information structure (and weight) starts to take effect; these factors determine the high (OV) or low copy (VO) of an object.

5.6 Outline of this thesis

Each of the chapters in this thesis is a case-study on the relation between information structure and OV/VO variation in one of the West Germanic languages, which are written in article format and can be read independently. The chapters are structured similarly: after laying out the fundamental issues raised in the literature on the languages, the chapters first present the empirical findings from a theory-neutral perspective. The results are then analysed from a formal perspective. The chapters on the individual languages are not comparative in nature; a detailed discussion of the similarities and differences between the West Germanic languages is postponed until the discussion in the final chapter of this dissertation.

English is taken as a starting point, as English has been studied most extensively. The first two chapters focus on OV/VO variation in early English. Chapter 2 is a reassessment of the validity of the Double Base Hypothesis and shows that when the data are analysed without a priori assumptions about the structure of the language, Old English emerges as a VO language, in which OV order is triggered by discourse-givenness. Chapter 3 substantiates these claims by also including data from early Middle English. In addition, it presents an analysis in which preverbal word order is triggered as the result of givenness.

Chapter 4 focusses on Middle Dutch. In addition to a detailed exposition of the interplay between information structure and OV/VO variation, it also studies the emergence of information structurally motivated middle field scrambling in the history of Dutch. The findings show that OV is associated with givenness, while new or heavy objects feature prominently in VO order. In addition, the chapter demonstrates that while scrambling was always a syntactic option in Middle Dutch, it did not become information structurally meaningful until VO was lost as a productive word order pattern. This suggests that the two types of variation in object placement are correlated.

Chapters 5 and 6 deal with OV/VO variation in the history of German. Chapter 5 focusses on Low German. This chapter does not only study object placement in Old Saxon, but also presents novel data from Middle Low German, one of the early West Germanic languages which does not feature prominently in the syntactic literature. Chapter 6 focusses on High German. The findings suggest a pattern that is similar to Low German and Dutch: given objects are OV, while new and heavy objects may freely surface in VO order.

While this may invite an analysis in terms of OV with rightward movement, I argue explicitly against such an approach. Instead, I demonstrate that the variation can be accounted for within a framework that derives word order variation exclusively via leftward movement.

Chapter 7 summarizes the main findings of this dissertation and interprets them from a comparative perspective by providing an overview of the similarities and differences in West Germanic OV/VO variation. In addition, it develops a unified syntactic framework in which all word order patterns are derived in the same way, but which allows enough flexibility to account for the differences between the languages. It concludes with a discussion of the limitations of the research, as well as its implications and avenues for further research.

CHAPTER 2
ON THE GIVENNESS OF OV WORD ORDER: A (RE)EXAMINATION OF OV/VO VARIATION IN OLD ENGLISH[1]

ABSTRACT OV/VO variation in the history of English has been a long-debated issue. Where earlier approaches were concerned with the grammatical status of the variation (cf. van Kemenade 1987, Pintzuk 1999 and many others), the debate has shifted more recently to explaining the variation from a pragmatic perspective (cf. Bech 2001, Taylor & Pintzuk 2012a), focussing on the Given-before-New Hypothesis (Gundel 1988) and its consequences for OV/VO. While the work by (Taylor & Pintzuk 2012a) focusses specifically on the newness of VO orders, the present study is particularly concerned with the givenness of OV word order. It is hypothesized that OV orders are the result of leftward movement from VO orders, triggered by givenness. A corpus study on a database of subclauses with two verbs and a direct object, collected from the YCOE (Taylor et al. 2003) corpus, and subsequent multinomial regression analysis within a generalized linear mixed model shows that OV word order is reserved for given objects, while VO objects are much more mixed in terms of information structure. We argue that these results are more in line with an analysis which derives all occurring word orders from a VO base than an analysis which proposes the opposite.

1 INTRODUCTION

The grammatical status of OV/VO word order variation in the present-day and medieval varieties of the (West) Germanic languages has been vigorously debated for several decades. This is as true for larger issues of word order typology as for the variation that can be witnessed within one language variety and/or a given historical stage of a language, and the analysis thereof, see for instance see Blom (2002) on Middle Dutch, Walkden (2014) on Old Saxon, Petrova (2009, 2012a) on Old High German and van Kemenade (1987), Pintzuk (2005) and Biberauer & Roberts (2005) on Old English, among many others.

This article is specifically concerned with OV/VO word order variation in Old English (OE) from a pragmatic perspective. There have been numerous

[1] This chapter was published as Struik, Tara, & Ans van Kemenade. 2020. On the givenness of OV word order: a (re)examination of OV/VO variation in Old English. *English Language and Linguistics* 24 (1):1 -22

studies on the underlying or basic word order of historical English, with proposals ranging from basic OV (van Kemenade 1987, Pintzuk & Kroch 1989) to basic VO (Biberauer & Roberts 2005, Elenbaas & van Kemenade 2014). An intermediate line of research follows the Double Base Hypothesis, which assumes that OE must have had competing OV and VO grammars (Pintzuk 1999 et seq.). More recently, however, the debate has shifted from discussing the structural implications of this word order variation to the variation itself, focusing on the influence of information structure and weight of the object (Taylor & Pintzuk 2012a, b).

The primary goal of this article is to (re)evaluate these triggers for the attested OE word orders and see how they play out against the various structural analyses. We will present quantitative evidence that much of the variation is governed by information structure triggers and we will show that our data supports an analysis in which OV word order is triggered by information structure and is derived from a VO base.

The paper is structured as follows. Section 2 will establish some basic facts concerning OV/VO variation in OE. Section 3 will lay out the factors that influence word order choices, including information structure. These facts will serve as the basis for the discussion of the data and for the logistic regression analysis presented in sections 4 and 5. Section 6 will review the data in light of our hypothesis that OV is triggered by information structure from a VO base.

2 OV/VO Variation in Old English

Present-day English is a rigid SVO language (as in (1a) below), which allows little variation in the order of the object and the verb. However, the historical stages of the language did allow variation in the position of the object and the verb, so both the orders in (1a – b) occurred.

(1) a. that John has read the book
b. * that John the book has read

The examples in (2) demonstrate this variation in OE. The OV example in (2a) shows the object (in bold) preceding the lexical verb (underlined); in (2b) the object follows the verb.

(2) a. OV order in OE
We nu willaþ **ure** **saula** smerian mid
We now wish our souls anoint with
mildheortnesse ele
mercy oil
'We now wish to anoint our souls with oil of mercy.'
(HomS_21_[BlHom_6]:73.136.927)

b. VO order in OE
… se wolde ofslean **þone** **cyning** **Dauid**
… who wanted kill that king David
'… who wanted to kill that king David.'
(ÆHom_23:39.3722)

This issue is further complicated by additional variation in the order of the auxiliary and the verb. Combining these two types of variation leads to no less than five attested word orders in OE. AuxV orders are illustrated in (3). Objects (in bold) could surface before the non-finite verb (underlined) and the auxiliary (in italics), as in (3a), between the auxiliary and the non-finite verb, as in (3b) or the object could follow both the auxiliary and the non-finite verb (3c).

(3) a. O-Aux-V
and gif hi **þone** **lofsang** *willađ* æt þam
and if they that psalm want at that
wundrum singan
wonder sing
'and if they sing that psalm for the miracles…'
(ÆLS_[Swithun]:237.4375)

b. Aux-O-V
þurh þa heo *sceal* **hyre** **scippend** understandan
through which it must its creator understand
'through which it must understand its creator'
(ÆLS_[Christmas]:157.125)

c. Aux-V-O
swa þæt heo *bið* forloren **þam** **ecan** **life**
so that it is lost the eternal life
'so that it is lost to the eternal life'
(ÆLS_[Christmas]:144.117)

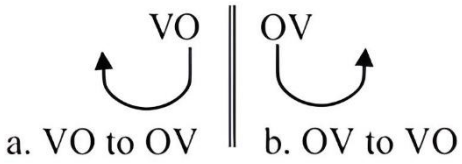
VAux orders are illustrated in (4).[2] Objects can either surface before the non-finite verb, as in (4a) or after the non-finite verb and the auxiliary, as in (4b).

(4) a. O-V-Aux
gif heo **þæt bysmor** forberan *wolde*
if she that disgrace tolerate would
'if she would tolerate that disgrace'
(ÆLS_[Eugenia]:185.305)

b. V-Aux-O
þæt he friðian *wolde* **þa leasan wudewan**
that he make-peace-with would the false widow
'that he would make peace with the false widow'
(ÆLS_[Eugenia]:209.315)

The first aim of this article is therefore to get a clear and detailed picture of the facts concerning the structure and use of OV/VO variation in OE. This will show what the nature and the extent of OV/VO variation was and specifically, to what extent it was influenced by information structure. We will then discuss the various proposals that have been put forward to account for word order variation and will critically evaluate them against our data. The earlier proposals can be summarized as in (5):

(5)



OE is either a basic VO language, with leftward movement to derive OV word order, as in (5a), or it is a basic OV language, with rightward movement to derive VO word order, as in (5b). It has also been proposed that OE had both a basic OV and a basic VO grammar, with both movement options to derive the word order patterns in (3) and (4) above, so both (5a – b) were an option.

If we assume information structure to be the trigger for word order variation, we can make the following predictions; if OE is a VO language, as

[2] Note that although VOAux is a hypothetically possible word order, it is not attested in OE. Biberauer, Newton & Sheehan (2009), Biberauer, Holmberg & Roberts (2014), Sheehan et al. (2017) posit the Final-Over-Final Constraint/Condition (FOFC) as the apparent cross-linguistically ungrammatical appearance of a head-initial category as the complement of a head-final category, but it is unclear why this might be the case.

in (5a), we predict that objects in OV word order are moved as a result of an information structure-trigger. This means we expect to find a homogeneous set of objects in OV order which correspond to this trigger. More specifically, we expect OV objects to be given. Similarly, if OE is an OV language, as in (5b), we predict that objects in VO are moved as the result of an information structure trigger, which in this case would be newness. Since all objects originate in some basic position, we expect to find a heterogeneous set of objects in VO in (5a), while we expect to find a heterogeneous set of objects in OV in (5b), as not all triggered objects will necessarily respond to the movement trigger.

3 OV/VO Variation and Information Structure

Earlier approaches to OV/VO variation in OE focused on the relation between richness of inflection and word order freedom. Fries (1940) claims that word order placement is free in OE, because objects and subjects are inflected for case and that word order became fixed because inflection was lost. Such a scenario cannot be the whole story; the history of English saw substantial losses in the inflectional domain and became rigidly SVO; Dutch likewise lost much of its case inflections and became more strictly SOV; German retained its inflections and became more rigidly SOV, like Dutch. Clearly, many more factors come into play in the processes of word order change; one such factor is information structure.

From very early onwards, traditional grammarians have been aware of the information structure properties that govern variation. Behaghel (1909), for instance, already notes that given information precedes new information in various Germanic languages. Similarly, the Given-before-New principle (Gundel 1988) is at the heart of much of the recent research on word order variation in the West Germanic language family (cf. Bech 2001; van Kemenade & Los 2006; Petrova 2009; Petrova & Speyer 2011; Biberauer & van Kemenade 2011; Petrova 2012a; Taylor & Pintzuk 2012a, 2012b; van Kemenade & Milicev 2011; Walkden 2014 among others). The hypothesis underlying work on OV/VO variation specifically is that OV is given and VO is new, but it is clear that this relation is not a straightforward one.

The influence of information structure on OE OV/VO variation has been studied by Taylor and Pintzuk (2012a, 2012b, 2014) (henceforth T&P). They approach the data from the Double Base Hypothesis (cf. Pintzuk 1999, 2002, 2005), which means that they assume that OE could employ both movement possibilities (5a – b) above. They make an a priori distinction between AuxV and VAux clauses and assume that VAux clauses must be OV, as V-O-Aux word order is ungrammatical. This means that V-Aux-O must be the result of rightward movement. AuxV clauses are ambiguous. They can be underlyingly

OV or VO, while the surface order can also be the result of rightward or leftward movement. Their prediction is therefore that the effect of information structure, weight, and case – the predictors in their model – is stronger in VAux clauses and that VO in these clauses is the result of newness or heaviness. This means that for VAux clauses only the movement possibility outlined in (5b) is available, while word order in AuxV clauses can be derived by both (5a) and (5b).

T&P's analysis includes only Aux-O-V, Aux-V-O, O-V-Aux and V-Aux-O word orders; they do not include O-Aux-V orders in their investigation, claiming that these are the result of factors other than information structure, without specifying any arguments.[3] They also exclude pronouns, because their syntax differs from that of non-pronominal objects (Pintzuk 1996, Wallenberg 2009) and quantified objects and negated objects, because of their special syntactic behavior (Pintzuk & Taylor 2006). Finally, T&P exclude non-referential objects, such as negative objects and semantically incorporated objects.

T&P also take weight and case into account, besides information structure. They find that objects that are generally considered indirect objects, i.e., dative, and genitive objects, are more frequently postverbal. This difference is only significant in VAux clauses. Weight also significantly influences the surface order of constituents; this effect is significant in both VAux and AuxV clauses. This corresponds to the cross-linguistic tendency for longer or heavier objects to occur later in the sentence (cf. Behaghel's (1909) Gesetz der wachsenden Glieder and Hawkins (1994) who in fact argues that all word order variation is the result of syntactic weight).

T&P use a binary given-new distinction to annotate for information structure. Their work is primarily based on insights from Birner (2006) building on Prince (1981) and Gundel, Hedberg and Zacharski (1993). Their new-category includes referentially new objects: new discourse referents in the sense of Karttunen (1976) and bridging inferables, i.e. cases where inference cannot be made without an explicit link to an earlier referent (cf. Birner 2006). The given-category includes previously mentioned entities, shared/cultural knowledge, situationally evoked entities and elaborating inferables, i.e., cases which can be inferred from another closely related constituent (cf. Birner 2006). T&P claim that once the object can be characterized as complex, clausal or heavy, information structure can no longer influence the position of the object. However, when the object is simple, it is more likely to be VO when new, but this is only true in VAux

[3] Petrova and Speyer (2011) in a study on the influence of focus on OV/VO variation do consider OAuxV orders. They find that all objects in OAuxV order are (contrastively) focussed, which we take to mean that OAuxV orders can be – and in fact are – information structure-structurally driven.

clauses. The effect of information structure is diluted in AuxV clauses. T&P take this difference between AuxV and VAux clauses as evidence for their Double Base Hypothesis, because AuxV can contain both basic VO word orders, but also derived VO word orders. The basic VO word orders are not subject to information structure constraints, because they are instances of a 'new' grammar in which information structure does not play a role (i.e., the Present-day English grammar), while derived VO orders are cases of an older grammar, in which information structure does play a role.

Combining T&P's findings with our predictions based on the movement possibilities outlined in (5), we note that T&P can only account for a part of the data. They only explore the possibility that VO is derived by rightward movement from an OV base. We predicted that the derived VO orders would constitute a homogenous set of objects triggered by information structure; T&P's results indicate that approximately 20% of the new objects in VAux order are postverbal. Furthermore, there are around 10% post-verbal given objects. In AuxV clauses, the proportion of given VO orders is even higher: around 45%. This means that objects in VO orders are far from a homogeneous set in terms of information structure.

Taylor and Pintzuk (2012a: 42) conclude that the differences they observe between AuxV and VAux clauses cannot be reconciled with "a syntactic analysis in which all post-verbal objects are triggered by the same discourse/performance constraints". However, they do not consider the possibility that givenness triggers OV word order, because this is not an option in their approach. Since we do not make any a priori assumptions about the structural analysis of OE word order, this allows us to explore the opposite hypothesis, i.e., OV word order is the result of givenness, which we will turn to now.

4 Methodology

Our aim is to study the extent to which OV word order can be predicted by information structure triggers, where various types of OV orders are associated with given information objects. We start from the various word orders identified in (3) and (4) above and then collected and annotated the data as follows:

The data in our corpus were gathered from the York-Toronto-Helsinki Parsed Corpus of Old English Prose (henceforth YCOE) (Taylor et al. 2003). The dataset consists of referential direct objects in subclauses from the O3 and O23 periods (850 – 1050), with both a finite and a non-finite verb. Using subclauses with two verbs minimizes the chance that we find word orders which are the result of movement of the verb to the second position in the clause, rather than movement of the object.

We excluded indirect objects in our study, unlike T&P, because direct and indirect objects do not have the same function (or syntactic position) in the clause, so it is unclear whether they will behave the same in terms of information structure. Dunbar (1979) notes that indirect objects are more likely to be postverbal, because they are less topical, which Dunbar and T&P directly relate to information structure, because less topical means less likely to be given. However, since this correlation is never directly established, we see it as a confounding factor. Furthermore, T&P only differentiate indirect and direct objects by case, assuming that dative and genitive objects are indirect objects and accusative objects are direct objects. However, some direct objects are selected by a verb that require genitive or dative case, such as the verb *gemyltsian* 'to pardon' in (6).

(6) þæt he *wolde* **þam** **wife** gemyltsian for his
that he would that woman pardon for his
þingunge
intercession
'that he would pardon the woman for his intercession'
(ÆLS_[Basil]:177.570)

To make sure that we are not treating two things as equal, while they are in fact different, we have excluded truly indirect objects from the analysis and leave those for future research.

We follow T&P in excluding negated and quantified objects, as these objects are not referential. Furthermore, it has been suggested that they show different syntactic behavior compared to referential objects (cf. Pintzuk & Taylor 2004, Pintzuk & Taylor 2006). We excluded pronouns because of their syntactic behavior; pronouns are generally assumed to move a higher position in the clause, possibly as clitics (Pintzuk 1999, Wallenberg 2009).

To exclude translation effects, we only included original OE texts in the sample. Cichosz, Gaszewski and Pęzik (2017) study the influence of Latin originals on element order in OE and OHG translations, devoting a significant number of pages to Latin influence on OV/VO variation. They show that the use of OV or VO in a Latin original influences the use of OV or VO in the OE translation and that Latin influence is ubiquitous, be it direct or indirect. Furthermore, OV/VO variation in Latin is itself quite an elusive and poorly understood phenomenon (but see Danckaert 2015, 2017 and the sources cited there), so it will be difficult to provide a motivation for why a translator decided to follow the original or deviate from it. This means that we have to tread carefully when using translated material to make claims about native OE syntax. Taylor and Pintzuk (2012b)'s database contains five texts that are (at least partially) translated from a Latin original, including Bede, which is a text

heavily influenced by the original Latin word order according to Cichosz, Gaszewski & Pęzik (2017). As a result, T&P's data are possibly influenced by the Latin originals. In order to prevent this potential problem, we only include non-translated texts.

We used *Cesax* (Komen 2011a) and *CorpusStudio* (Komen 2011b) software to collect and annotate the data. *CorpusStudio* generates a database of syntactically annotated clauses with user-customized features by means of XQuery searches in XML versions of the relevant corpora. *Cesax* facilitates further semi-automatic and manual coding of information structure and weight. The database thus created with *Cesax* forms the input for the statistical analysis. We will discuss the features included in the database in more detail below.

4.1 Information Structure

We used a two-way coding scheme to annotate information structure. The scheme is based on the Pentaset annotation guidelines (Komen 2013). The Pentaset includes five possible reference categories: IDENTITY, INFERRED, ASSUMED, NEW and INERT. Taylor and Pintzuk (2014), in a study of the effect of using different annotation schemes, show that making a distinction between categories that are traditionally analyzed as given (IDENTITY, INFERRED, and ASSUMED in the Pentaset) does not yield significant differences. Considering the amount of data that is needed to do a reliable regression analysis, we feel it is justified to collate these three information status labels into one category GIVEN, since we do not expect to find differences in the distribution of these three object types. Our given category thus contains objects that are labelled IDENTITY, INFERRED or ASSUMED. We will briefly illustrate each information structure label below.

4.1.1 IDENTITY

IDENTITY refers to objects that have been mentioned before in the discourse, as in (7) below.

(7) **Þæt anlipige Godes tempel** wæs wundorlice gecræft
that single God's temple was wondrously made
þurh gastlicum gerynum; Dauid se mæra
through ghostly mysteries. David the great
cyning hæfde gemynt þæt he wolde **þæt tempel**
king had designed that he would that temple
aræran đam ælmihtigan Gode to wurđmynte.
rear that almighty God to honor
'that single temple of God was wondrously contrived through ghostly mysteries. David, the great king, had designed that he would rear that temple to the honor of the almighty God.'
(ÆCHom_II,_45:335.10.7522-23)

The example refers to a temple that was mysteriously built. This same temple is referred back to as *þæt temple*, which makes it identical to its antecedent.

4.1.2 INFERRED

INFERRED refers to elaborating inferables in the sense of Birner (2006), which means that a referent has not been mentioned before, but can be inferred from another, closely related constituent. This includes inferences of the type *party – music*, where *music* can be inferred from the fact that a party usually has music. The example in (8), where *ure heortan* is activated, illustrates an elaborating inferable in OE; the owners of the hearts have been mentioned before and since all humans need a heart in order to live, we can infer the existence of the hearts from the existence of the people. INFERRED objects are often body parts or cases of inalienable possession. Note that while the example in (8) is anchored directly to a referent by means of possessive pronoun, anchoring is not necessary for successful inference, as in the case of party – music.

(8) We magan ongytan þæt he forþon us gesette þæt we
We may perceive that he indeed us formed that we
hine biddan sceoldan, þy **we** sceolan þonne eac, in
him pray should so we should then also in
þa tid þæs gebedes, **ure heortan** geclænsian
that time of-that prayer our hearts cleanse
from oþrum geþohtum.
from other thoughts
'We may perceive that he has formed us that we should pray to him, so we must during our time of prayer cleanse our hearts from wayward desires.
(HomS_8_[BlHom_2]:21106.266)

4.1.3 ASSUMED

ASSUMED objects are objects that are part of world/encyclopedic knowledge or are situationally evoked, as in (9).

(9) þæt se awergda gast ongan **Godes bec** trahtian
that that accursed spirit began God's books expound
'…. that the accursed spirit began to expound God's books'
(HomS_10_[BlHom_3]:29.59.398)

Here we can assume that the reader will have been familiar with the Holy Scriptures, as Christianity was paramount in Anglo-Saxon society.

4.1.4 NEW

NEW objects are objects that have not been mentioned before and introduce a new referent, as in (10). The object introduces a new discourse referent; the Lord's prophet has not been mentioned before. This is emphasized by the introductory phrase *Samuhel gehaten, haliges lifes mann* 'who is called Samuhel, a man of holy life' that follows the object.

(10) Nu segð se wyrdwritere þæt seo wicce sceolde
Now says the historian that the witch should
aræran þa of deaþe **þone Drihtnes witegan**
raise then from death the Lord's prophet
Samuhel gehaten, haliges lifes mann,
Samuel called holy life's man
'… now says the historian that the witch should then raise from the dead the Lord's prophet, named Samuel, a man of holy life.'
(ÆHom_30:45.4103)

Bridging inferables in the sense of Birner (2006) were also annotated as NEW, because the inference cannot be made without the explicit link to an earlier referent (often in the form of a possessive), so the object itself is truly new. These are often cases of alienable possession such as (11) below. While *his hut* is linked to *the leper* because of the use of the possessive pronoun, the introduction of the hut itself cannot be inferred from the leper.

(11) … cwæð đæt he wolde genealæcan **his hulce** gif
… said that he would reach his hut if
he mihte.
he might
'… [the leper] said that he wished to reach his hut if he could'
(ÆCHom_I,_23:369.136.4634)

4.1.5 INERT

INERT objects do not participate in the discourse. They do not introduce a new referent, nor can they be referred back to, as the example in (11) illustrates.

(12) Gesælige hi wurdon geborene: þæt hi moston
blessed they are born that they must
for his intingan **deaþ** þrowian.
for his sake death suffer
'Blessed they were born that they might for his sake suffer death'
(*ÆCHom_II,_45:344.293.7705*)

We have excluded INERT items from the regression analysis, because they are not referential.

4.2 Weight

WEIGHT is measured as the log base 2 of the number of letters and includes the relative clause as a part of the object. Using the binary logarithm incorporates the idea that the effect of a difference between, say, a 3-letter object and 4-letter object is greater than between a 25-letter word and 26-letter word, because the relative increase in weight in the latter is much smaller than in the former. Furthermore, the values were centered around 0, i.e., the mean was subtracted from all values. This is to prevent the regression model from considering 0 as the baseline, as 0 is a meaningless and non-occurring value in our sample, since we only look at overt objects; the values must be at least 1. Nothing hinges on this way of measuring constituent weight, however, as all continuous measures of weight are highly correlated (Szmrecsanyi 2004).

4.3 Analysis

The results were analysed with a multinomial regression analysis within a Generalized Linear Mixed Model (GLMM) (Baayen 2008, Gries 2015) with fixed and random effects in SPSS. This type of analysis compares possible outcomes against a user-defined reference category. The model takes WORD ORDER as the dependent variable and breaks it down into a series of comparisons between two outcome categories. Our model has five possible outcomes: the word orders identified in (3) and (4). Since we assume that all word orders are derived from VO by information structure-driven scrambling, we take Aux-V-O as our reference category, because this is the most frequent VO category. The model compares all other possible outcome categories against this reference category. The outcome of the regression analysis will thus tell us whether the fixed effects in the model (information structure and weight) significantly predict Aux-O-V vs. Aux-V-O, O-V-Aux vs. Aux-V-O,

etc. It will not only return the significance value, but also the odds ratio (Exp(B)). The odds ratio is an indication of the effect size and indicates whether the objects in the sample will be more likely to appear in the reference category (Aux-V-O) or in the category it is compared with (any of the other orders). An odds ratio above 1 indicates that an object will be more likely to appear in the reference category, while a value below 1 indicates that it is more likely to appear in the predicted category. TEXTID was included as a random effect to control for variation that is the result of individual texts.

5 RESULTS

Our dataset consists of 768 subclauses with a referential direct object and two verbs. Figure 1 below shows their distribution across the various word order patterns.

We first of all note the high occurrence of AuxV (in grey) compared to VAux (in black). Furthermore, there is more OV/VO variation in AuxV clauses than in VAux clauses, which are more dominantly OV.

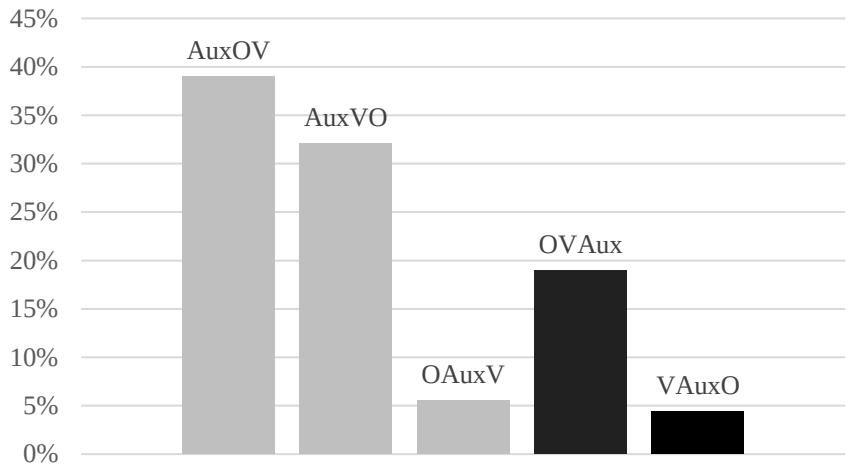


Figure 1. The distribution of objects across word order in OE

The overall correct classification percentage of the regression analysis is 59.6%, which means that based on the predictors entered into the model (INFORMATION STRUCTURE and WEIGHT) the model was able to correctly classify over half of the items. This seems a rather low number, but Table 1 shows that the model is in fact able to correctly predict OV order as opposed to VO (marked in dark grey). The model, however, fails to make a distinction between the different OV patterns and predicts Aux-O-V in most of the cases.

This suggests that the predictors in the model do not influence the choice for AuxV or VAux and that the model simply predicts the most frequent option. The classification of VO word orders is trickier. The model again does not make a distinction between VAux and AuxV clauses, but observed VO word orders are only correctly predicted in VO word order in around two thirds of the times (marked in light grey). This suggests that our predictors can account for preverbal word order, but less so for postverbal word order.

Both INFORMATION STRUCTURE and WEIGHT are significant predictors, $p < .001$ and $p < .001$ respectively,[4] which means that the overall effect of both factors on the model is significant, but these values do not tell us anything about the direction of the effects or on the effect between different word order patterns. We will discuss the effects of both predictors on the various word order patterns in more detail below.

		PREDICTED			
OBSERVED	**AUX-V-O**	**AUX-O-V**	**O-AUX-V**	**O-V-AUX**	**V-AUX-O**
AUX-V-O	65.3%	34.3%	0%	0%	0.4%
AUX-O-V	7.0%	92.7%	0%	0.3%	0%
O-AUX-V	9.3%	79.1%	0%	11.6%	0%
O-V-AUX	11.6%	74.7%	0%	13.7%	0%
V-AUX-O	70.6%	29.4%	0%	0%	0%

Table 1. Percentage of correct predictions and observations by the model

5.1 Weight

WEIGHT significantly predicts word order. The overall tendency is that an increase in the weight of the object results in an increased likelihood of VO word order. The parameter estimates are summarized in Table 2:

[4] We also fitted a model which included the interaction between information status and weight. However, the fit of the resulting model was less than the model we report here. Furthermore, the interaction was not significant, which is most likely due to the fact that new objects are almost exclusively postverbal, which means weight does not play a significant role here and information status is the factor responsible for VO order. There is an effect of weight on given objects; postverbal given objects are on average longer than preverbal objects, but we do find both heavy preverbal objects, as well as postverbal non-heavy objects.

	SIG.	EXP(B)	95% CI	
AUX-O-V	< .001	.454	0.345	0.599
O-AUX-V	< .001	.320	0.206	0.497
O-V-AUX	< .001	.413	0.302	0.564
V-AUX-O	.004	1.488	.994	2.228

Table 2. The effect of object weight on word order

The odds ratios for all preverbal word orders are below 1, which indicates that an increase in the weight of the objects increases the chance of Aux-V-O word order. The difference between V-Aux-O and Aux-V-O is marginally significant. The odds ratio is 1.488; thus, a one-unit increase in the weight of the object increases the chance of it occurring in V-Aux-O order about 1.5 times.

The object weight was measured in the log base 2 number of letters, including relative clauses.[5] This means that it is possible that the effect of object weight is reducible to the presence of the relative clause, but this is not the case. A model without objects with a relative clause yields similar results; longer objects are still more likely to appear in a postverbal position. This observation is also confirmed by the data. While objects with a relative clause are most often postverbal as in (13), preverbal examples do exist, as is illustrated in (14).

(13) þæt he ofslean *wolde* **þa geleaffullan Iudei, þe**
that he kill wanted the believing Jews, who
gelyfdon đa on God
believed then in God
'… that he wanted to kill the faithful Jews, who believed in God'

(ÆLS_[Maccabees]:549.5191)

[5] An anonymous reviewer comments that number of letters is a questionable measure of weight, especially when there is no one-to-one sound-graph correspondence. First of all, this is not an issue for OE, as sound-graph correspondence is assumed close. Secondly, an analysis with weight measured in number of words (the more commonly used measure) yielded similar results. This suggests that number of letters is also a reliable indicator of weight. The choice for the measure used in the analysis presented in this paper is motivated by ensuring comparability with corpora on other West-Germanic languages, such as Middle Dutch, which are not parsed and for which number of letters is thus easiest to operationalize.

(14) and cwæð þæt he ne *mihte* swa **hrædlice þone**
and said that he not could so hastily that
ealdan gewunanđe he mid Angelcynne
old habit he with English
heold forlætan.
observed leave
'And said that he could not so hastily forsake the old usage, which he with the English nation observed'

(ÆCHom_II,_9:78.198.1576)

Similarly, we also find longer objects without a relative clause in postverbal position, as in (15):

(15) Eft đa þa God *wolde* wrecan mid fyre **þa**
again then when God wanted wreak with fire that
fulan forligeras þæs fracodostan mennisces,
foul fornication of-that vilest of-mankind,
Sodomitiscra đeoda, þa sæde he hit Abrahame
of-Sodom people, then said he it Ambraham
'Again when God desired to wreak with fire the foul fornication of the vilest race of men, the people of Sodom, then he told it to Abraham'.

(ÆLS[Pr_Moses]:190.2963)

5.2 Information structure

There is a significant effect of INFORMATION STRUCTURE on all preverbal word orders compared to AuxVO. The parameter estimates are summarized in Table 3:

	SIG.	**EXP(B)**	**95% CI**	
AUX-O-V	< .001	44.214	19.270	101.449
O-AUX-V	.001	27.452	3.629	207.642
O-V-AUX	< .001	51.000	15.124	171.981
V-AUX-O	.105	2.023	0.864	4.739

Table 3. The effect of information structure on word order

The model calculates the odds that a given object appears in the outcome word order compared to when the object is new, so the odds ratios and significance values reflect the effects of a given object compared to a new object on the word order outcome. The odds ratios are all well above 1, which means that if

an object is given, it is more likely to be OV. The very high odds ratios show that the effect of information structure is very strong. The effect of AuxVO compared to VAuxO is not significant, which suggests that there are no information structure differences between objects in these orders.

To get a more detailed picture of how given and new objects compare with regard to word order, let us look at the distribution of the data in more detail.

	AUX-O-V	**AUX-V-O**	**O-AUX-V**	**O-V-AUX**	**V-AUX-O**	**TOTAL**
GIVEN	293 *97.7%*	125 *51.0%*	42 *97.7%*	143 *98.0%*	23 *67.7%*	626
NEW	7 *2.3%*	120 *49.0%*	1 *2.3%*	3 *2.1%*	11 *32.4%*	142
TOTAL	**300**	**245**	**43**	**146**	**34**	**768**

Table 4. Distribution of information structure across word order patterns in OE

Table 4 shows that there are hardly any new objects in preverbal position. In fact, the percentage of preverbal new objects is around 2% for all preverbal word orders, which explains the significant *p*-values and the very high odds ratios for information structure. Given objects are much more evenly distributed across word order patterns and occur both in OV and VO orders. However, the proportion of given objects versus new objects is much higher in OV orders than in VO orders. At the same time, the VO word orders are more mixed in terms of information structure. Around 43% of the objects in Aux-V-O are given, while the percentage of given objects is higher than that of new objects in V-Aux-O orders. Even though we have not made an a priori distinction between AuxV and VAux we see the same pattern for both word orders: preverbal word order is reserved for given information, while postverbal order is a mix of new objects and given objects which are postverbal for reasons of weight, as in the example in (16), where the object is given, but heavy.

(16) Þæt he acwellan moste **þa halgan cristenan**
that he kill must those holy Christian
men mid mislicum witum.
Men with various torments
'that he might kill the holy Christian men with various torments'
(ÆLS_[Vincent]:22.7818)

However, not all postverbal objects are heavy, as the examples in (17a – b) show. This type of object frequently occurs in preverbal position as well,

so it is unlikely that the VO examples are the result of heaviness (see also fn. 4 on the interaction between weight and information structure).

(17) a. and hi *nellaƀ* herian **þone hælend** mid
and they not-want praise that lord with
sange
singing
'… and they will not praise the lord with chanting'
(ÆLS_[Swithun]:237.4374)

b. þæt he feccan *sceolde* **þæt feoh** mid reaflace.
that he fetch should that goods with robbery
'that he should steal the goods'
(ÆLS_[Maccabees]:760.5327)

Taylor & Pintzuk (2012a, 2012b) find a clear difference between AuxV and VAux clauses, so it is also worth looking at the differences between AuxV and VAux in our sample in more detail. Table 5 below shows the distribution of objects divided by AuxV or VAux order.

	AUXV		**VAUX**		
	OV	**VO**	**OV**	**VO**	**TOTAL**
GIVEN	335	125	143	23	626
	74.6%	*25.4%*	*87.0%*	*13.0%*	
NEW	8	120	3	11	142
	7.5%	*92.5%*	*27.2%*	*72.8%*	
TOTAL	**343**	**245**	**146**	**34**	**768**

Table 5. The distribution of objects divided by AuxV and VAux clauses and information structure

While under our approach the differences between AuxV and VAux are not correlated with the choice of OV or VO word order, T&P do correlate the two. Recall that T&P argue that we can only find an unambiguous information structure effect in VAux clauses, because VAux clauses can only be underlyingly OV. AuxV clauses are ambiguous, because they allow both underlying OV and VO. They indeed find that the effect of information structure is stronger in VAux clauses, but this is not the case in our sample. The distribution in Table 5 looks similar for AuxV and VAux clauses. In both orders given information prefers preverbal position, while new information surfaces postverbally. The differences are significant both for AuxV (χ^2 = 182.6087, p <.001) and VAux clauses (χ^2 = 35.294, p < .001). Since we

observe similar patterns in both word orders, we can conclude that the variation works the same in both orders.

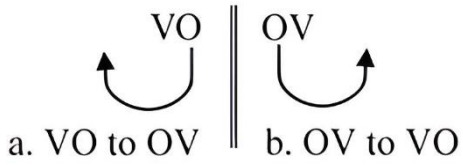
5.3 Overview

We have shown that both weight and information structure significantly predict OE word order. The weight of an object significantly determines its surface position, with longer objects surfacing more often in postverbal order. We have also shown that information structure significantly predicts word order. By looking at the frequencies in the data, we found that this is because OV is dominated by given objects, while VO is much more mixed in terms of the information status of the object.

6 DISCUSSION

The main aim of this article was to answer the question to what extent information structure determines OV/VO variation in OE and what consequences this has for a syntactic analysis. We started with two movement possibilities, outlined in (5), repeated as (18) below.

(18)



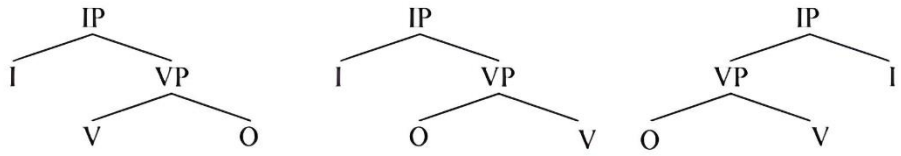
We have shown that preverbal objects are almost always given, while VO orders are a mix of not only new and heavy objects, but also non-heavy given objects. We will now turn to the consequences for the derivation of OE word order and whether the data can be explained in terms of rightward or leftward movement.

6.1 Rightward movement

If VO objects are derived by rightward movement from an OV base, as in (17b), we expected to find a homogeneous set of objects in VO orders, i.e. objects that are triggered. In the case of VO orders this could be new or heavy objects, but we did not expect to find non-heavy given objects.

T&P explored this hypothesis for a part of the data. Their analysis hinges on two crucial assumptions. First, they assume a structural difference between AuxV and VAux clauses. Second, they assume that OE had both an underlying OV and a VO grammar. The fact that VOAux orders are ungrammatical leads them to assume that in VAux clauses, OV order must be the basic word order.

(19)



This means that, under the Double Base Hypothesis, OE had three grammars, illustrated in (19). The AuxV grammars both allow basic OV and basic VO, as well as rightward and leftward movement to arrive at the AuxV word orders. Because of this optionality in basic position of the object and because both options allow movement from this basic position, T&P cannot make predictions about the information structure and position of the objects. VAux orders, on the other hand, only allow basic OV orders. T&P predict that VAuxO orders are the result of rightward movement from OV order as the result of newness or heaviness of the object.

The data in this study cannot corroborate T&P's findings; our data first of all do not support the AuxV and VAux distinction. In both AuxV and VAux clauses OV is reserved for given information, while VO allows both given and new objects. The pattern is similar and significant in both AuxV and VAux clauses. The mixed nature of VO reported here also does not support T&P's analysis. If VAuxO is the result of rightward movement from an OVAux grammar, we do not expect to find objects that are not triggered by a newness or heaviness trigger. While the average length of a given object is longer in VO order than in OV orders, we find that approximately half of the objects are modified by an adjective only, a configuration we also very frequently find in OV order. In fact, these objects are twice as frequent in OV word order (when given; 50 postverbal, 96 preverbal examples). This leaves us with less than half of the given objects which are unambiguously heavy, i.e. very long constituents, which are modified by a relative clause or a genitive + adverbial, for example. If we assume VO order is the result of rightward movement, triggered by heaviness or newness, there is a large number of given objects that are not accounted for by these factors.

The mix of information structure in VO objects is unexpected on an account where VO is the result of rightward movement under the influence of newness or heaviness. This leads us to propose that OV orders are instead the result of leftward movement under the influence of givenness from a VO base, as in (18a).

6.2 Leftward movement

While we will not be concerned with the structural details of an analysis which derives OV word order by leftward movement (see Biberauer & Roberts 2005 et seq. for a formal analysis of OE word order from an AuxVO base), we do argue that such an analysis fits well with the data we found. The OV examples in our sample are overwhelmingly given, which follows from our assumption that this is the result of leftward movement triggered by the information structure status of the object. However, new preverbal objects are not expected at all in our approach, but we do find 11 of such examples. Let us address some in turn.

Considering that heavy and new objects are least likely to move in a leftward movement approach, the first example is particularly interesting, because it features an object that is both new and heavy.

(20) forđæm þe he ne moste **ane Godes fæmnan, þæt**
because that he not must one God's woman that
wæs an nunne, him to wife take
was a nun him to wife onfon
'He could not marry one woman of God, who was a nun, to him'
(Mart_5_[Kotzor]:Se21,A.14.1787)

The passage preceding (20) introduces the apostle Matthew, who, while he was preaching in front of God's altar, was stabbed from behind by king Hirtacus, because he was upset that Matthew could not marry him to a nun. The object is presented as if it refers to the general impossibility of marrying a nun, but it is likely that the author referred to a specific nun. We need to dig deeper into the story of Matthew and Hirtacus to know that Hirtacus was interested in one specific nun: Eufenisse, the wife of the previous king. Eufenisse is mentioned in the preceding context, so the object is, at least contextually, linked to the previous discourse. The Pentaset-Identity label would not be appropriate in this context, because *ane Godes fæmnan* is not truly identical to Eufenisse, nor can it be inferred from Eufenisse. We have to contextually derive it. This might make it eligible for the category Assumed. However, Assumed objects are objects that are either world-knowledge or situationally evoked, neither of which applies to *an nunne* in this example, because we need specific knowledge about Eufenisse. *An nunne* is referential, so the object must be new in terms of the Pentaset. However, the contextual link to Eufenisse, which was of course obvious for the author, might have resulted in preverbal word order.

A similar example comes from a passage about the establishment of Saint Michael's church on mount Gargano:

(21) … mid þy þe he wolde **đone fearr** sceotan se
… with that that he would that bull shoot which
stod on þæs scræfes dura
stood on that cave's opening
'… with which he would shoot the bull which stood in the opening of the cave'

(Mart_5_[Kotzor]:My8,A.1.770)

This small passage in the *Martyrology* refers to the story of a man who lost one of his bulls. When he went to look for it, he found it in a deserted cave. He shot an arrow at it, which turned around and hit the man instead. This mysterious event led to the establishment of Saint Michael's church. This particular bull was not mentioned before in the text, but the author might have assumed his audience to be familiar with the legend, which is why the object is OV.

(22) Begann đa on mode micclum smeagan. hu he
began then on mind much consider how he
đæs folces lof. forfleon mihte. þy læs đe he
of-that people's praise flee might lest that he
wurde to hlisful on worulde. and **þæs**
became too famous on world and of-that
heofenlican lofes fremde wære;
heavenly praise stranger were
'He then began to devise in his mind how he might flee from the people's praise, lest he should be too famous in the world and a stranger to heavenly praise'

(ÆCHom_II,_10:85.159.1721)

The object *đæs folces lof* in (22) seems to be preverbal for stylistic reasons. The excerpt is from the second instalment of the Catholic Homilies by Ælfric, who was very conscious about his writings. He is known for his alliterative prose writings and his use of stylistics, including parallelism (Clemoes 1966, Sato 2012). In this example, he contrasts the people's (i.e., earthly) praise with heavenly praise by using parallel grammatical structures with the object in preverbal position.

There is only one example which cannot be readily explained:

(23) … þa đa he wolde **his fæder lic** bebyrian.
… then when he would his father body bury
'when he would bury his father's corpse'

(ÆCHom_I,_33:460.46.6588)

The sentence is preceded by a passage in which Jesus and his apostles witness the funeral of a young man in the city of Nain. It is followed by a collection of quotes by Jesus about funeral rites. The sentence in (23) seems to recall a situation in which Jesus said something important to one of his apostles at his father's funeral, but his father nor his death is specifically mentioned. While the possessive pronoun establishes a link to an already established referent, the actual referent, the dead body of the father, cannot be inferred from the apostle, so the label Inferred is not appropriate in this context. This object is thus truly new.[6] *His fæder lic* might be preverbal because it fits the general context of talking about the dead, even though the specific referent of the object has not been mentioned.

The number of new preverbal objects is very low, 2%, and most of the occurrences can be accounted for; they are preverbal because the author assumes extensive contextual knowledge, or because the author uses stylistic devices to add emphasis or contrast. This means that the new preverbal objects we find are not a problem for an analysis which derives word order from a VO base. We have to assume that the trigger for movement is not obligatory, because of the non-heavy given objects that are not moved to OV order. This means that the correlation between OV order and information structure works one way: if an object is preverbal it is given, but this does not mean that a given object is necessarily preverbal. This fits the diachrony of the change from OV to VO. Elenbaas and van Kemenade (2014) clearly show that the referential objects that are still preverbal in the M1 period (1150 – 1250) are always given. This suggests that English used to move objects to mark givenness. This trigger gradually disappeared, possibly as the result of external influences, such as language contact.

7 Conclusion

The aim of this article was to (re)evaluate OV/VO variation in OE by testing the hypothesis that OV orders are the result of givenness and are moved

[6] An anonymous reviewer points out that the OV order in this example might be because of the possessive relation to an already established referent, i.e., the apostle. This would suggest an inference relation. However, while there is a link to the apostle, the actual referent in the object, the dead body of the apostle's father, cannot be inferred directly from the apostle, because the father's death cannot be inferred from the existence of the apostle. This means that the label INFERRED is not appropriate in this context. If a possessive relation with an earlier established referent would be sufficient for OV order, we would expect to find more examples of preverbal new, but anchored objects. Our sample contains 44 of such objects, but only two of them are preverbal; the examples in (22) and (23).

leftward from VO word order, as opposed to the hypothesis that VO is the result of rightward movement triggered by newness and/or heaviness from an OV base. Our corpus analysis showed that the information structure properties of the object play a crucial role determining its surface position. In fact, 98% of the preverbal objects are given. Postverbal objects are more mixed in terms of information structure; they include both new and non-heavy objects. Earlier studies (such as Bech 2001 and Taylor & Pintzuk 2012a, 2012b) do show that the given-before-new hypothesis (Gundel 1988) to some extent applies to the observed variation, but none of these studies has been able to directly correlate one word order with one information structure-category. The results presented here clearly indicate such a correlation, which supports an analysis which allows information structure-driven movement from a VO base.

CHAPTER 3
INFORMATION STRUCTURE AND OV WORD ORDER IN OLD AND MIDDLE ENGLISH: A PHASE-BASED APPROACH[1]

ABSTRACT This article re-examines the evidence for OV and VO variation and the loss of OV order in historical English, and presents a novel and unified analysis of Old and Middle English word order based on a uniform VO grammar, with leftward scrambling of specific types of objects. This analysis provides an insightful framework for a precise analysis of how OV word orders differ from VO word orders. We show in detail that OV with referential objects involves discourse-given objects. We then present a phase-based analysis from a VO base in which objects undergo feature-driven movement to Spec,*v*P triggered by the information structure of the object. We propose that this analysis also yields a syntactic framework for analysing the derivation of preverbal quantified and negated objects, as well as a natural explanation for the stepwise loss of OV word order.

1 INTRODUCTION

This article re-examines the evidence for object-verb (OV) and verb-object (VO) variation in Old English (OE) and (early) Middle English ((e)ME) and the subsequent loss of OV order. We will present a novel and unified analysis of OE word order based on a VO grammar with leftward scrambling of specific types of objects. We claim that this analysis provides a natural and insightful framework for a precise analysis of how OV word orders differ from VO word orders.

Our approach to the data differs from previous work in that we do not make prior assumptions about underlying word order(s); that is, we do not a priori distinguish between, for instance, an OV and a VO grammar, or between a grammar with a head-initial TP and one with a head-final TP (contra Taylor & Pintzuk 2012a, 2012b). Stripping the data of such structural assumptions yields new insights into the nature of OV/VO variation. We show, following up on Struik and van Kemenade (2020), that discourse-given, lexical objects are optionally OV, but that new objects are near-categorically VO. We treat texts translated from Latin separately and compare them to native OE,

[1] This chapter was published as Struik, Tara & Ans van Kemenade. 2022. Information structure and OV word order in Old and Middle English: A phase-based approach. *The Journal of Comparative Germanic Linguistics* 25(1).

demonstrating that translations induce a higher proportion of (new) OV in the OE translation. We also demonstrate that the position and distribution of quantified and negated objects parallels that of referential discourse-given objects, pace Pintzuk and Taylor (2006), who claim that their distribution and frequency is fundamentally different from that of other OV word orders.

To account for these facts, we present a VO-based analysis in which referential given objects are raised to preverbal position as the result of feature checking requirements. We analyse referential objects as 'big-DPs' by virtue of articulate morphology on the demonstrative determiner, which makes referentiality visible to the syntax. Movement to Spec,*v*P is triggered by an Edge Feature inserted on *v*P. Evidence for a big DP is lost once the demonstrative determiner is grammaticalized to the invariant definite article (and loses its D-linking function), resulting in strict VO word order. We show that quantified and negated objects move to the same position as referential objects and suggest that their movement is triggered by a [Quant] and [Neg] feature respectively.

The article is organised as follows. Section 2 will discuss in detail the key issues and word order patterns that play a role in the debate on the nature of OV/VO variation. Section 3 lays out our approach, focussing on the position of referential objects as a result of givenness and their distribution in translated as well as untranslated OE texts. We then go on to present and discuss the changes that took place in the transition from OE to ME, and over the ME period. Section 4 presents an analysis in terms of leftward scrambling of constituents, which is cast in terms of a phase-based approach building on Biberauer and Roberts (2005 et seq.). Section 5 concludes the paper by sketching the syntactic changes leading to the loss of OV order.

2 Word order variation in Old English in a West Germanic context

This section will present the key patterns of word order variation in Old English against the backdrop of work on the present-day West Germanic languages.

OE shows variation between OV and VO word order as well as variation in the order of finite (Aux) and non-finite (V) verbs. We first give examples of the five key word order patterns involving finite verbs, main verbs, and objects in subclauses in (1). The labels for the patterns are based on the position of the object with respect to the finite and non-finite verbs. This does not preclude other constituents such as adverbs and PPs from also occurring in the pattern. The object is in bold, and the non-finite verb underscored. The examples (1a–c) are Aux-V word orders, and (1d–e) are V-Aux word orders, which both allow OV-VO variation to varying extents. All examples are from the *York-Toronto-Helsinki Corpus of Old English* (YCOE, Taylor et al. 2003):

(1) a. O-Aux-V
and gif hi **þone lofsang** willað æt þam
and if they that psalm want at those
wundrum singan
wonders sing
'and if they sing that psalm for the miracles…'
(ÆLS_[Swithun]:237.4375)

b. Aux-O-V
þurh þa heo sceal **hyre** **scippend** understandan
through which it must its creator understand
'through which it must understand its creator'
(ÆLS_[Christmas]:157.125)

c. Aux-V-O
þæt ic mihte geseon **þone** **scinendan** **engel**
that I might see that shining angel
'that I might see the shining angel'
(ÆLS_[Cecilia]:46.7137)

d. O-V-Aux
gif heo **þæt** **bysmor** forberan wolde
if she that disgrace tolerate would
'if she would tolerate that disgrace'
(ÆLS_[Eugenia]:185.305)

e. V-Aux-O
þæt he feccan sceolde **þæt** **feoh** mid reaflace
that he fetch should the goods with robbery
'that he should steal the goods'
(ÆLS_[Maccabees]:760.5327)

Word orders such as those in (1a–e) are attested in different varieties of present-day West Germanic languages: (1a) and (1d) are typical word orders in present-day Dutch and German, as illustrated in (2):

(2) a. Dutch: O-Aux-V
… dat Johan zijn vriendin **een** **boek** wilde geven
… that John his girlfriend a book wanted give
b. German: O-V-Aux
… dass der Johan seiner Freundin **ein** **Buch**
that the Johan his girlfriend a book
geben möchte
give wanted
'that John wanted to give his girlfriend a book'

Clause-final verb sequences in Dutch and German as in (2), whether consisting of two verbs or more, are considered verb clusters. The classic analysis by Evers (1975) and much further work assumes that modal verbs are restructuring main verbs, which cluster with the topmost finite verb in the course of the derivation (unless the finite verb is fronted because of V2). The distinct order preferences of Dutch and German are maintained when clusters are longer: long verb clusters in Dutch are right-branching (descending order), while German clusters are left branching (ascending order).[2,3] An analysis along these lines may be appropriate for present-day Dutch and German, but there is little evidence for clustering in OE (see Koopman 1990) or in any of the other Old West Germanic languages, where modals are always finite. Coupé and van Kemenade (2009) show that (long) verb clustering, across the West Germanic languages, is not attested before the late 13th century.

(1b) is a typical word order in West-Flemish and is analysed in Haegeman and van Riemsdijk (1986) as a variant of verb clustering called Verb Projection Raising (VPR): instead of the non-finite verb, its projection including the object is clustered with the topmost verb, resulting in Aux-O-V order.

(3) West-Flemish: Aux-O-V
da Valère nie en-durft [**niets** zeggen]
that Valère not not-dares nothing say
'that Valère does not dare not to say anything'

The example in (3) illustrates that VPR creates a scopal island, since it can have a double negation reading only; a negative concord reading is excluded.

[2] Note that there is a good deal of variation in the order of verb clusters between varieties of the present-day West-Germanic languages. We refer the reader to, e.g., Barbiers (2005), Broekhuis (1997), Schmid (2005), Wurmbrand (2004, 2006), and Zwart (2011) for discussion.
[3] Further variation is presented and discussed in more detail in Bech (1955) and den Besten and Edmondson (1983).

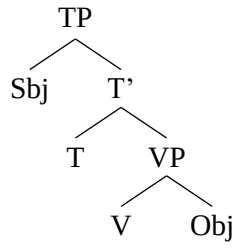
Haeberli and Haegeman (1999) show that OE Aux-O-V order always yields a negative concord reading, which renders a VPR analysis implausible.

The word orders (1a) vs. (1c), and (1d) vs. (1e) show that both Aux-V orders and V-Aux orders allow OV as well as VO orders, raising the issue of basic word order. Van Kemenade (1987) proposes that OE has an underlying OV order that allows an optional and rather liberal rule of extraposition to postverbal position, including (1b), which would be compatible with VPR in West-Flemish as briefly discussed above.

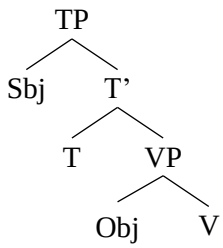
Pintzuk (1996) argues that what we see in OE is a case of phrase structure competition, not only between a basic OV and a basic VO grammar, but also between what she calls a T-medial (Aux-V) and a T-final (V-Aux) grammar, resulting in the following three options, on the assumption that Vf must move to T (a step we omit here for ease of exposition):

(4)

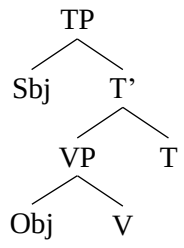
a. Aux-V-O



b. Aux-O-V



c O-V-Aux



In addition to the basic orders in (4), the object in (4a) may undergo movement from a postverbal position to a scrambling position higher in the structure, resulting in O-Aux-V order as in (1a), or the object in (4c) may undergo rightward movement, resulting in the word order V-Aux-O in (1e).

The main diagnostics for the choice of basic OV or VO is the position of what Pintzuk calls "light" elements such as personal pronoun objects and verb particles, which are taken to be preverbal in an OV grammar, and postverbal in a VO grammar. A further issue is the status of V-to-T movement in OE. Pintzuk (1999) gives evidence that there is Vf movement to T in the structure (4a), stranding a verb particle, but this is a relatively minor pattern, which gives little indication of the frequency of this phenomenon. Obligatory V-movement to T in a T-final grammar is therefore by assumption.

Pintzuk's analysis accommodates the attested word order patterns, but it also needs, in each of the competing grammars, the full range of extra operations, including extraposition of objects from an OV base, resulting in VO orders that are also derivable from a VO base structure and vice versa, which leads to massive indeterminacy.

Recent work attempts to explain the word order variation in terms of information structure. The information structural properties of OV/VO are noted by Bech (2001). Taylor and Pintzuk (2011, 2012a, 2012b) (henceforth T&P) take up this account: they categorise the five word order patterns in (1) into two basic ones, V-Aux and Aux-V, which represent T-final and T-initial grammar respectively. Within these two grammars, there is also phrase structure competition between an OV grammar and a VO grammar, as discussed above. T&P go on to identify an effect of information structure in V-Aux-O word orders (1e), as this is the only unambiguously derived order in their account: objects in this pattern are postposed as a result of an interplay between informational newness and weight. OV word orders in V-Aux clauses can only be base-generated as such, as a VO grammar with V-Aux would derive the unattested V-O-Aux order. Hence, they cannot make predictions about the information structure of objects in OV orders. Similarly, since OV and VO can be both base-generated and derived in Aux-V clauses, they cannot make predictions about information structure for these orders either. T&P thus take their analysis of the double base hypothesis as a prior assumption, and then investigate the effect of information structure on a minority pattern, concluding that its only effect is on objects that are extraposed because they are new and/or heavy.

Another line of work motivates antisymmetric analyses of OE word order, assuming a basic VO word order (the universal basic word order in anti-symmetric work, cf. Kayne 1994). Such work must motivate an analysis in terms of leftward movement of the object. Proposals along these lines can be found in Roberts (1997), van der Wurff (1997), Fischer et al. (2000, chapter 5), Biberauer and Roberts (2005), Wallenberg (2009), and De Bastiani (2019). The various positions of the object are derived by movement to higher positions. We will also pursue an analysis along those lines in section 4, based on the results presented in section 3, which show in detail that OV objects are information-structurally given, or are semantically special in the sense that they are quantified or negated. The VPR lookalike pattern discussed above falls out naturally from this approach and has no separate status.

Before we proceed to such an analysis, we thoroughly reconsider the relevant data, based on a syntactic and information structural analysis of the facts.

3 Referential object placement in historical English

This section (re)evaluates direct object placement in historical English from a theory-neutral perspective. We will specifically analyze the trigger for OV placement of referential objects in terms of information structure and will show that new objects are near-categorically VO. Given objects appear

productively in VO order, but are OV in the majority of the cases. Our methodology differs from that in the previous literature in a number of respects, and we will address these differences once we have presented our results.

3.1 Information structure

The results presented here build on the data collection in Struik and van Kemenade (2020). We identified the information status of objects occurring in subclauses with two verbs by compiling a dataset from the YCOE corpus (Taylor et al. 2003), using *CorpusStudio* (Komen 2011b) and annotating it according to a tripartite given-new-inert information structure coding scheme, based on the Pentaset annotation scheme (Komen 2013)[4]. We refer the reader to Struik and van Kemenade (2020) and Appendix 1 for the full details regarding our coding scheme. The overall results are given in Table 1.[5,6]

[4] The Pentaset coding scheme contains five labels: IDENTITY, INFERRED, ASSUMED, NEW, and INERT. Identity, Inferred, and Assumed were collated into one category GIVEN, as there was not a significant difference between these categories (see also Taylor & Pintzuk 2014). Objects labelled INERT are not included in the analysis, since they are non-referential.

[5] Table 1 and Struik and van Kemenade's (2020: 14) Table 4 report closely similar results. There are some minor differences between the numbers reported, which is the result of reconsideration of our data and annotation. Note that these changes do not undermine the conclusions in Struik and van Kemenade and do not lead to significant changes in the model. We repeated Struik and van Kemenade's multinomial regression analysis within a Generalized Linear Mixed Model (GLMM) (Baayen 2008; Gries 2015). The dependent variable is WORD ORDER, and INFORMATION STATUS (given vs. new) and WEIGHT (object including relative clauses, measured as the log base 2 of the number of letters and centered around the mean) as predictor variables. TEXTID was included as a random effect to control for variation within texts. The model indicates independent significant effects of information status, $p < .001$, where given objects are more likely to be OV than VO compared to new objects, and of weight, $p < .001$, where longer objects are more likely to be VO compared to shorter objects.

[6] The full dataset is deposited in the DANS repository and is available for review. The dataset can be accessed via: https://doi.org/10.17026/dans-2z6-67z4

	AUX-O-V	AUX-V-O	O-AUX-V	O-V-AUX	V-AUX-O	TOTAL
GIVEN	284	125	34	122	23	588
	98.3%	*51.9%*	*100%*	*98.4%*	*67.7%*	*81.4%*
NEW	5	116		2	11	134
	1.7%	*48.1%*		*1.6%*	*32.4%*	*18.6%*
TOTAL	289	241	34	124	34	722

Table 1. Distribution of given and new objects across word orders in native OE

The results indicate a strong correlation between the information status of the object and the word order pattern. In fact, new objects hardly ever appear in preverbal position. Over 98% of the objects in any of the OV patterns present discourse-given information, and the majority of new objects (127 out of 134) appear in VO word order.[7] Given objects are OV in the majority of the cases (440 out of 588), but appear in VO order at a productive rate. This is in part due to weight: there is an independent effect of the length of the constituent on the surface position. Ever since Behaghel (1909), it has been acknowledged that languages tend to place heavy constituents later in the sentence. The longer (or heavier) the object, the more likely it is to surface in postverbal position. This also makes it more likely for a heavy object to be spelled out in VO position, regardless of its information structure. This interaction between givenness and weight lends strong support to an analysis in which VO order is basic and OV order is derived as the result of discourse-givenness. We will come back to this in section 4.

3.2 Differences between our approach and T&P

Both the results and the methodology of our approach differ substantially from those in Taylor and Pintzuk (2011, 2012a, 2012b). We will now try to account for these differences as precisely as we can. Our approach differs in five main respects: 1) we included subclauses with two verbs only, to abstract from finite verb movement; 2) we included the full range of Aux-V clauses, including O-Aux-V, and did not analyze the variation in Aux-V clauses and V-Aux clauses separately; 3) we excluded indirect objects from the analysis; 4) we treated original OE texts separately from texts translated from Latin since translations from Latin contain an inflated number of (new) OV sentences as a translation effect (see also Cichosz et al. 2017); 5) we are more restrictive in our annotation of new objects. We will address each of these differences in turn.

[7] Space restrictions prevent us from discussing the few preverbal new objects that we find in the main part of this paper. The interested reader is referred to the Appendix 1, Sect. 4 (see also Struik and van Kemenade 2020, Sect. 6.2).

3.2.1 Exclusion of main clauses

First, we give Table 2 from T&P (2012a, 839, their Table 4).

	SIMPLE OBJECTS		COMPLEX OBJECTS		CLAUSAL OBJECTS	
INFORMATION STATUS	%VO	N	%VO	N	%VO	N
GIVEN	23%	967	60%	125	91%	115
NEW	35%	454	53%	94	87%	15
TOTAL	27%	1,421	57%	219	91%	130

Table 2. Frequency of VO order by information status and complexity (from Taylor & Pintzuk 2012a: 839, their Table 4)

It may be noted first of all that Table 2 contains much more data than Table 1. This is in part because T&P's results include texts translated from Latin (which are considered separately here). Another major difference is that T&P include main clauses in their analysis, based on Pintzuk's (1999) approach in terms of the Double Base Hypothesis, and the assumption that finite verb movement in OE is to T in main clauses and subclause alike. There is, however, consensus in recent work that the position of the finite verb in OE main clauses is in the left periphery, implying an asymmetry between main clauses and subclauses with respect to the position of the finite verb (Haeberli 2000, 2002; Fischer et. al. 2000; van Kemenade 2011, 2012; van Kemenade & Westergaard 2012; Walkden 2015, 2017; Haeberli, Pintzuk & Taylor 2020, to name a few). This is based on two observations: first, subject-verb inversion is frequent in main clauses and absent in subclauses except in the complement clauses of bridge verbs and in clauses with an unaccusative verb, where the subject often surfaces in a low position (van Kemenade 1997; Fischer et. al. 2000). Second, verb-final order is rare in main clauses and much more frequent in subclauses (Pintzuk 1999). Haeberli and Ihsane (2016: 504) give some independent evidence that the finite verb may move (leftward) to T in subclauses. This, in combination with the consensus that there are at least two subject positions, yields the structure (5), which takes V to T to be available in OE (Haeberli & Ihsane 2016: 505).

(5)	XP	Vf1 C	Su1	Vf2 Fin	[$_{TP}$ Su2	(…)	Vf3] T

The conclusion thus is that the finite verb in main clauses targets either C (in questions, negative-initial clauses, and clauses where XP is the temporal adverb *þa* or *þonne*), or Fin (in main clauses with a different type of non-subject XP). In subclauses, on the other hand, the finite verb may target T (Haeberli & Ihsane 2016). The Double Base Hypothesis, as set out above in (4), thus applies to the T domain only, that is, below the left periphery. This asymmetry is the crucial reason why our focus here is restricted to subclauses with two verbs, allowing us to consider only clauses where the position of the finite verb is below the left periphery and the subject position(s), in relation to that of the object and the nonfinite verb.

3.2.2 Inclusion of full range of Aux-V clauses

A further difference between T&P's data and ours is that our sample contains the full range of Aux-V clauses, including O-Aux-V order, as in (1a). T&P exclude these, because in their view the object must have moved out of the VP, which they assume is for reasons other than the ones affecting OV/VO variation. These reasons are not discussed. This pattern is usually regarded as part and parcel of object placement in restructuring contexts in the West Germanic languages (for references see the previous section). Against this backdrop, this pattern is of special interest to our approach, as we predict that objects appearing in it behave on a par with other OV objects. We see in Table 1 that this prediction is borne out.

The number of Aux-V clauses is further reduced in T&P's datasets, because they take one-third of the Aux-V orders to balance them numerically with V-Aux orders. This is unproblematic in their approach, because they consider Aux-V and V-Aux orders to be the result of different grammars (T-initial or T-final) and they expect OV/VO variation to work differently in these clauses. Recall that under the Double Base Hypothesis, V-Aux order is compatible only with an OV grammar, as the combination with a VO grammar would result in the unattested V-O-Aux order, so that V-Aux-O must be derived by rightward movement. From the theory-neutral perspective which we take here, it is not a priori necessary to distinguish between Aux-V and V-Aux clauses, and hence also not necessary to balance these patterns.[8]

[8] Note that if we divide the data in Table 1 according to the order of the verbs, new objects are more frequently OV in V-Aux orders (2 out of 13) than in Aux-V orders

3.2.3 Exclusion of indirect objects

We only included direct objects in the analysis. Indirect objects were excluded because they differ from direct objects in at least two respects: 1) their base-generated position is assumed to be different. Direct objects are base-generated as the complement of V, whereas indirect objects are base-generated in Spec,V; 2) they tend to be associated with different thematic roles and different functions within the clause, and also within discourse. It is exceedingly difficult to find any regularity in the placement of indirect objects in OE, as shown at length by Koopman (1990). A further pilot data study of indirect objects in OE showed that the placement of indirect objects is not in any way regulated by information structural considerations, in the way direct objects are. We will thus leave the abundant variation in the position of the indirect object for future research.

3.2.4 Latin influence

The dataset in Table 1 explicitly excludes translated texts to avoid potential influence from Latin. Here, we include a comparison between translated and non-translated texts to further help us gain insight into the mechanisms driving OV/VO variation. We collected a sample of translated texts (which are also included in T&P 2012b's database) and manually matched the first half of the clauses from each text with the corresponding clause in the Latin source, if available. The OE objects were then annotated for information structure.[9]

We hypothesize that Latin influence first of all leads to an increased number of OV clauses: Latin is a synthetic verb-final language, which means that it will in most cases have one verb form in final position, where OE might have two, including a periphrastic form. As the verb in Latin is in final position, the object is, in most cases, preverbal. OE allows both preverbal and postverbal placement of objects, so we expect to find an inflated number of OV word orders in translations, as these do not violate any native OE grammatical options. Second, we expect to find deviations from the native pattern. Even though OV is a grammatical option in OE, we have shown here that it is constrained by information structure. A clear indication of Latin influence would be when a new object is preverbal as the result of preverbal placement in the original. This can be considered a strong direct effect (in the sense of Taylor 2008), because it leads to a deviation from the native IS pattern

(7 out of 116). Excluding two-thirds of the Aux-V clauses would inflate the overall percentage of new OV objects.

[9] We refer the reader to the Appendix 1, Sect. 3, for details regarding the texts, selection procedure and annotation.

and to infelicitous use of new objects in preverbal position. The results of the analysis are summarized in Table 3.

Comparing the amount of OV/VO variation in Latin to that in native OE as reported in Table 1, we note that OV in Latin translations is significantly higher.[10] In native OE, there are 447 (61.9%) cases of OV vs. 275 (38.1%) cases of VO (see Table 1). In our sample of translated OE, OV occurs 113 (73.4%) times, whereas VO occurs 41 (26.6%) times. The difference between native and translated OE is significant, $\chi^2 = 7.235$, $p = .007$. We can thus conclude that the number of OV word orders is inflated in translations as the result of Latin influence.

LATIN ORDER	**OV**		**TOTAL**	**VO**		**TOTAL**
OE ORDER	**OV**	**VO**		**OV**	**VO**	
GIVEN	77	17	94	26	4	30
	81.9%	*18.1%*		*86.7%*	*13.3%*	
NEW	7	14	21	3	6	9
	33.3%	*66.7%*		*33.3%*	*66.7%*	
	84	**31**	**115**	**29**	**10**	**39**

Table 3. OV/VO variation in Latin translations

This influence does not lead to ungrammatical patterns. However, the information status pattern is slightly disrupted in the translated sample. Table 3 also summarises the relation between the order in the Latin texts and in the OE translation for both given and new objects. Clearly, translations do not strictly adhere to the Latin order: 31 (out of 115) of the Latin OV orders are rendered as VO orders in OE, while 29 (out of 39) Latin VO orders are rendered as OV in OE. A translator is thus more likely to shift to OV than vice versa. The question is whether, and if so how, this relates to the information status of the object.[11] Since our analysis of a native sample of OE materials suggests that the placement of given information can be either pre- or postverbal, we cannot use the given objects as unambiguous evidence for Latin influence other than to identify a statistical increase in OV orders. However, when we consider the pattern in which given objects are shifted from OV to VO and vice versa, we note that given objects are shifted from

[10] The numbers in Table 3 only include clauses which have an identifiable object in the Latin source.

[11] We are referring here to the information status of the OE object within the OE translation. We did not consider the information status of the Latin objects and any possible differences between the original and the text in terms of information status.

OV to VO in 18.1% of the cases, whereas the reverse happens in 86.7% of the cases. This seems to suggest a degree of awareness on the translators' part of the discourse configurationality of the variation, which further strengthens our hypothesis that OV is strongly associated with discourse-givenness.

When we consider the behaviour of new objects, we do find unambiguous evidence for Latin influence. In the native sample, new objects hardly ever occur in preverbal position, so we do not expect to find preverbal new objects in the translated sample either. This means that Latin OV clauses should be rendered as VO clauses when the object is new. This indeed happens in 66.7% of the cases. However, 7 new OV objects in Latin surface in OV order in the OE translations as well. The objects are genuinely new in the discourse, as is illustrated by (6). The object *þæt gyldne mynet* 'the gold coin' is preceded by a definite determiner, but it is not until the relative clause *þætte þider of Cent cwom* that the specific coin is identified. This particular coin has not been mentioned before, so it is truly new.

(6) þæt heo sceolden **þæt gyldne mynet** mid him
that they should that gold coin with them
geneoman, þætte þider of Cent cwom
take that there of Kent came
'that they should take the gold coin with them that had come there from Kent'

ut **aureum illud numisma** quod eo de cantia
that gold that coin which there from kent
venerate secum adsumerent
came with.them take
'that they might take with them that golden coin which had come from Kent to that place'

(Bede_3:6.174.9.1704)

Secondly, we do not expect new objects to be translated from a Latin VO structure to an OV OE structure, as this would violate the information status pattern that we observed in the native sample. However, we do find 3 such cases. These cases are exceptional, however. They can be considered bare or indefinite expressions, which are made specific:

(7) þæt he sceolde Osweo þæm cyninge **wiif** fetigan
that he should Oswin the king wife fetch
Eanflæde Eadwines dohtor þæs cyninges,seo
Eanflæde Edwin's daughter of.the king who
wæs ær þider gelæded
was earlier there led
'… that he should fetch Eanflæde, daughter of king Eadwine, to be wife of king Oswio, who had been brought there'
(Bede_3:13.198.24.2015)

The object *wiif* 'wife' in (7) is preverbal, but the apposition identifies a specific woman who is new. The preverbal position of the syntactic object is probably not the result of Latin influence. This is a pattern that we observe in the native sample as well; bare nouns are dominantly preverbal, as we illustrate in the following subsection.

The results from native OE indicate that in general, given objects occur in preverbal position, but not new objects. We can corroborate this finding by comparing it to Latin translations. We find a similar pattern here; translators make an effort to place given information preverbally, as is evidenced by the fact that VO Latin clauses are very often translated as OV OE clauses, but they fail to do this for new objects in some cases. We do find examples of new preverbal objects, and these seem to be the result of direct transfer from the Latin pattern. These observations are in line with the hypotheses that result from an analysis in which OV is positively triggered by the given information status of the object.

3.2.5 Annotation of new objects

An anonymous referee points out that even when main clauses, indirect objects, and translations are deducted from the figures in Table 2, the difference in the number of new OV found by T&P as compared to ours is still not entirely accounted for. Comparing T&P's coding to ours suggests that there is a substantial set of broadly speaking non-definite objects, including bare singulars, bare plurals and plurals modified only by an adjective, which we have regarded as non-referential (excluding them from our set of referential objects), whereas T&P are not altogether consistent and explicit about their coding in their 2011, 2012a,b, and 2014 papers: given (2011); unclear (2012a,b); new (2014). We here set out in more detail our coding choices and the theory underlying them.

This set of objects can be classified into three categories: non-referential bare singulars, non-referential bare plurals, and non-referential bare indefinites, illustrated in (8).

(8) a. Non-referential bare singulars
þæt hi moston for his intingan **deað** þrowian.
that they must for his sake death suffer
'that they might for his sake suffer death'
(ÆCHom_II,_45:344.293.7705)

b. Non-referential bare plurals
þæt he wolde sendan syðđan **renscuras**
that he would send afterwards rainshowers
'that he would send rainshowers afterwards'
(ÆLS_[Book_of_Kings]:72.3702)

c. Referential indefinites
forþon þe heo nolde on Rome onfon
because that she not.wanted in Rome receive
hæþnum were ond Cristes geleafan forlætan
heaten man, and Christ's faith leave
'Because she did not want to receive a heathen man in Rome and abandon Christ's faith'
(Mart_5_[Kotzor]:Jy10,B.2.1129)

Objects of the first two types, bare singulars and bare plurals, are non-referential and are coded as INERT in our dataset. Bare singulars tend strongly to be fixed collocations in which the noun forms a tight semantic unit with the verb, as in (8a). In this example, the noun *deað* 'death' in combination with the verb *þrowian* 'suffer' expresses the (intransitive) meaning 'to die'. Farkas and de Swart (2003) argue that bare singulars only license an uninstantiated thematic role, but, crucially, do not introduce a discourse referent, which they claim is the result of (semantic) incorporation with the verb. The fact that the majority of the objects in our dataset are preverbal and very dominantly adjacent to the verb also supports an analysis in terms of syntactic incorporation, which can be considered a case of First Merge, where the (bare) N head merges directly with the verb.

Bare plurals are discussed at length in both the semantic and syntactic literature (starting with the seminal work of Carlson 1977; see also Delfitto & Fiorin 2017 for an overview and discussion), but there is no consensus on their status and the interpretation of bare plurals is largely dependent on context. The (few) bare plurals in our database are frequently abstract concepts and do not introduce discourse referents, which is why they are labelled INERT and are excluded from the present analysis.

T&P (2012a, 2012b, 2014) consider the object *gode dagas* 'good days' in (9) a short-term referent in the sense of Karttunen (1976) and code it as new.

(9) Ðeah þe hwa wille her on life habban **gode**
Yet that whoever will here in life have good
dagas, he ne mæg hi her findan
days he NEG can them here find
'Yet whoever will have good days here in life, he cannot find them here.'

Short-term referents only exist within a limited domain, i.e., in hypothetical or conditional contexts, but do not establish a referent beyond this limited domain. Let us note that Karttunen is specifically concerned with (co)referential noun phrases introduced by an indefinite article, and not with bare plurals as in (9). Furthermore, Karttunen's approach does not treat a short-term referent as new by definition; it can be referred back to, albeit only within that same limited domain (Karttunen 1976, example (25a)):

(10) You must write a letter to your parents mail the letter right away.

Our coding scheme does not distinguish between limited or permanent domains, and hence not between permanent or short-term referents. In example (10), *a letter* would be annotated as NEW, whereas *the letter* is considered GIVEN. The crucial difference between the objects in (10) and (9) is that the former is an identifiable/specific referent, whereas the latter is a bare plural that does not refer to specific good days. The pronoun *hi* 'them' in (9) is what King and Lewis (2018) call a "problematic anaphor." The pronoun refers back to *gode dagas*, but the reference of the pronoun cannot be fixed, because the antecedent is not specific. This is a semantic issue (and see King & Lewis (2018) for an overview of proposals), but this is not an issue that directly bears on the syntactic status of these referents. It does indicate, however, that when an object is referred back to by a pronoun, it is not necessarily anaphoric.

Not all bare objects are non-referential. In some cases, objects receive a specific interpretation, as the indefinite article is not obligatory in OE because it has not yet been grammaticalized fully. Crisma (2015) shows that *an* is more frequently used with specific and wide scope nominals than with narrow scope nominals or generics (which never occur with an indefinite article), but there is considerable freedom. Crisma and Pintzuk (2016) show that the M1 period is a continuation of OE, but that the indefinite establishes itself as an obligatory expletive element around the M3 period; bare singular objects are unattested from that period on. We coded existential bare objects according to

their information status. For example, the object in (8c) *hæþnum were* 'heathen man' receives an existential reading; there was a man who she did not want to receive, but we do not know who it is, so in this case the object is new.

3.3 Changing patterns from Old English to early Modern English

To see how OV/VO variation works in early Middle English and to make a consistent comparison with OE, we applied the same methodology to a set of texts from the Penn-Helsinki Parsed Corpus of Middle English, second edition (PPCME2, Kroch et al. 2000). We used a sample of texts from 1150–1250 and extracted all examples of a subclause with a finite verb, a non-finite verb, and a direct object. This resulted in 271 analyzable sentences.[12]

	AUX-O-V	AUX-V-O	O-AUX-V	O-V-AUX	V-AUX-O	TOTAL
GIVEN	96	100	9	4	5	214
	100%	*64.9%*	*100%*	*100%*	*62.5%*	*79.0%*
NEW		54			3	57
		35.1%			*36.5%*	*21.0%*
TOTAL	96	154	9	4	8	271

Table 4. Distribution of given and new objects across word orders in eME

Table 4 shows that V-Aux orders have decreased; the vast majority of the sentences have Aux-V order. However, the information status pattern remains consistent. New objects only occur in postverbal position (confirming the data in Elenbaas and van Kemenade 2014), while given objects can also be OV.[13] However, the overall number of OV objects has decreased considerably compared to OE. In OE, 76.4% of the given objects are preverbal, while in ME only 51.2% of the given objects are OV.

[12] The data here only include texts from the M1 period, as this is a very robust sample of original ME texts. While we would expect to find OV/VO variation in M2 as well, the corpus is not representative enough for our purposes; it is not only small, but also consists of translated texts. However, an informal exploration suggests that whatever OV is left in M2 is discourse-given.

[13] This pattern is significant in M1. To test the statistical validity of the data, we fitted a binary logistic regression in a generalized mixed model. Since V-Aux has virtually disappeared at this stage, we collated the patterns into a binary OV-VO dependent variable. INFORMATION STATUS (given vs. new) and WEIGHT (measured as the log base 2 of the number of letters, centered around the mean) were entered as predictor variables. The results show a significant effect of information status on the surface word order, $p < .001$, Exp(B) = 27.57, indicating that a given object is more likely to be OV than VO in comparison to a new object.

Next to data from OE and early ME, we also collected all subclauses with two verbs and a direct object from late ME and early Modern English,[14] using the PPCME2 (Kroch et al. 2000), PPCEME (Kroch et al. 2004) and PCEEC (Taylor et al. 2006) corpora. The frequencies in Table 5 demonstrate a stepwise loss of OV word order. First, V-Aux order is lost. In OE, V-Aux-O is already a minority pattern, whereas O-V-Aux is still robust. By M1, this order has decreased significantly to a point of virtually complete loss. OV order remains possible in Aux-V clauses. However, the percentage of VO order has increased and increases further towards the M3 period. In M4 and E1, the vast majority of the clauses is VO, even though there are OV relics.

	AUX-V-O	**O-AUX-V**	**AUX-O-V**	**O-V-AUX**	**V-AUX-O**	**TOTAL**
OE	263	38	346	136	37	820
	32.1%	*4.6%*	*42.2%*	*16.6%*	*4.5%*	
M1	205	14	114	5	8	346
	59.2%	*4.0%*	*32.9%*	*1.4%*	*2.3%*	
M3	391	8	18			417
	93.8%	*1.9%*	*4.3%*			
M4	756	12	5			773
	97.8%	*1.4%*	*0.7%*			
E1	2019	9				2028
	99.6%	*0.4%*				

Table 5. Diachronic development of OV/VO variation, ca. 850–1570[15]

4 A PHASE-BASED ANALYSIS

The previous section highlighted two key points that our analysis should account for. The first is a clear asymmetry between the position of given and new objects: OV word order near-categorically applies to discourse-given objects. An analysis will thus have to be able to optionally derive preverbal

[14] We did not annotate information structure for M3-M4-E1, as the number of OV is too low to reach significance. To allow for a fair comparison with the data from OE and eME, we included inert objects in the numbers presented here, which is why the numbers for OE and M1 are higher than in Tables 1 and 4. Pronouns and quantified and negated objects are excluded from all datasets. We excluded translated texts from the PPCME2 corpus. The PPCEME and PCEEC corpora do not contain information on possible foreign sources for texts, so no distinction was made between translated and non-translated texts.

[15] The periodization follows the periodization in the respective corpora and is as follows: OE (containing O2 and O23): 850–1050, M1: 1150–1250, M3: 1350–1420, M4: 1420–1500, E1: 1500–1569.

word order for given objects, while restricting this for new objects. Second, our analysis needs to allow a plausible account for the directionality of the change from OE to ME and thus the change from a language which allows word order variation to one with strict SVO word order. The model should thus offer a natural explanation for the loss of V-Aux orders and the subsequent loss of OV word order. We will argue that all these facts can be accounted for within a phase-based model in which the various OV word orders are the result of feature checking.

Our analysis builds on that of Biberauer and Roberts (2005, 2006, 2008) (henceforth B&R). B&R follow a Kaynian antisymmetric approach, i.e. all phrases are head-initial. While Kayne's approach is conceptually grounded, it is important to note that this is not the main motivation driving our approach: the previous section has shown that a VO-based analysis is the more appropriate for the data presented here. In other words, the data show that OE is a VO language, quite apart from the approach in terms of antisymmetry. The various word orders in B&R's approach are derived by leftward movement of the object and the subject, as a result of feature checking requirements on vP and TP. B&R's analysis is further characterized by movement of 'large XPs'; for example, it allows pied-piping, which means that the Probe's features can be satisfied by either moving the Goal with the relevant features or the larger constituent containing it. This means that object and subject DPs can move by themselves or as part of a larger phrase. Before we go into the derivation of OV objects, we will first discuss our assumptions concerning the status of finite and non-finite verbs in OE.

4.1 The syntax of OE verbs

The issue of word order variation in the VP domain is related to the (syntactic) status of the verbal complex in OE. Three issues are relevant for the present discussion: 1) the status of auxiliaries, 2) the presence or absence of finite V-to-T movement and 3) the status of restructuring in OE.

The status of auxiliaries and V-to-T movement are related issues, as they determine the (surface) position of Vf: *v* (after V-to-*v* movement) or T. It is generally assumed that OE auxiliaries have not yet grammaticalized and should be considered lexical verbs (e.g., Roberts 1985; Warner 1993). These 'pre-' auxiliaries can thus be assumed to project a full clausal spine (VP, *v*P, and TP) and are base-generated in V. This raises the question if there is (across the board) V-to-T movement of main verbs in OE subclauses, especially since Biberauer and Roberts (2010) propose that this is a ME innovation. We demonstrated earlier that V-to-T movement is at least an option in OE. However, the examples provided by Pintzuk (1999) and Haeberli and Ihsane (2016) are limited, which raises questions as to its frequency. We thus deviate from Biberauer and Roberts (2005, 2006) in that modals do not necessarily

surface in T (as a result of base-generation or movement); we take them to be a full V with optional movement to T. We will show below that a head-initial analysis with optional (perhaps diachronically incipient) V-to-T can derive all word order patterns in a uniform way.

The third issue is the status of restructuring in OE, i.e., the extent to which clauses are transparent for syntactic operations which are generally clause-bounded, and especially the syntactic analysis of restructuring complements (cf. Wurmbrand 2001, 2006 for an overview of the various proposals in the literature). Biberauer and Roberts (2005) assume in relation to OE that (pre-) auxiliaries trigger restructuring, but argue that the size of the non-finite complement can vary, i.e., in some cases Vf selects a full, but deficient, TP, whereas in other cases Vf selects a *v*P complement without the TP layer. This assumption is crucial for B&R to derive all word orders: V-Aux orders can only be derived in their account when a *v*P complement is selected, Aux-V order optionally by the TP complement.

B&R assume that it is a selectional property of the restructuring Vf that attracts V+*v* to the head of the deficient TP. However, it is unclear what triggers this movement, especially in a feature-driven approach. Another problem in their approach is that V+*v* must move to T in the lower phase, before the restructuring Vf is merged, which violates the strict cycle and creates a look-ahead problem.[16] B&R also argue that movement of the infinitive to T explains the (frequent) absence of *to*, but it is not so clear that there is a correlation between infinitive movement to T and the appearance of *to* (see Wurmbrand 2001 for arguments). We opt here for a more uniform analysis in which all Vfs are considered main verbs and are merged as V (followed by V-to-*v*, and optionally, V+*v* to T). We assume that restructuring verbs always select a defective TP complement (TP_{DEF}). We further depart from B&R in postulating that V+*v* does not undergo movement to T_{DEF}.

To derive preverbal word order, B&R posit an optional EPP feature on Spec,*v*P, which can be satisfied by movement of the object alone, or by pied-piping the larger structure containing the object, VP. They argue, however, that such an optional feature is only warranted if it leads to an interpretive effect. The previous section has shown that there is indeed such an effect: preverbal word order is associated with givenness.

In the following section, we refine B&R's proposal and argue that given objects are structurally more complex, and have a 'big-DP' structure; i.e., they have an additional φ-related feature layer (which we dub [Ref]), which makes reference marking grammatically visible. We assume that *v* is associated with an Edge Feature (EF) (the current instantiation of Chomsky's (2000) EPP features), which attracts objects carrying this extra feature (or the VP in which

[16] We thank an anonymous reviewer for pointing this out to us.

it is located) to its edge. This EF only enters the derivation when an object with a 'big-DP' structure and the [Ref] features enters the derivation and, crucially, can attract only these goals (Radford and Vincent (2012) refer to such a feature as a selective EF). The object always leaves behind a copy in its original position, because, as Miyagawa (2007) argues, we must be able to trace movement in order to appreciate the effect on the outcome that is associated with the insertion of an EF. The lower copy can be spelled out in VO order if (possibly syntax-external) processes require it, such as the heaviness effect.

4.2 Deriving OV with given DPs

We have shown in Sect. 3 that OV is directly correlated with the information status of an object: an object can only be OV when it is given. We argue that information status is indirectly encoded in the syntax, assuming a relation between information status and the morphosyntactic expression of an argument, based on Gundel et al.'s (1993) givenness hierarchy to signal cognitive statuses, given in (11).

(11)

In focus	>	it
∨		
Activated	>	this, that, this N
∨		
Familiar	>	that N
∨		
Uniquely identifiable	>	the N
∨		
Referential	>	indefinite this N
∨		
Type identifiable	>	a N

The terminology used by Gundel et al. differs from ours in that "In focus" means that it is the topic of the current discourse, signifying the most given type of element, i.e., pronouns.[17] "Activated" and "Familiar" correspond to given objects, where definiteness is marked by a demonstrative pronoun/determiner. "Uniquely identifiable" can be either given or new.

[17] We do not consider pronouns in this article. We may add, however, that pronouns are near-categorically OV in OE. However, their syntactic status seems to be different from that of nominal objects (see van Kemenade 1987; van Bergen 2003; Pintzuk 2005 and the sources cited there for discussion).

"Referential" refers to identifiable but new objects, and "Type Identifiable" are objects completely new to the discourse. This hierarchy indicates that determiner choice correlates with cognitive status.

The morphology associated with referentiality and definiteness is relatively rich in OE. As the Present-day English definite article *the* does not yet exist in OE, OE exploits the full paradigm of demonstrative pronouns, which can be used as determiners or as independent pronouns, and are inflected for number, case, and gender. The paradigm is given in Table 6.

CASE	MASCULINE	NEUTER	FEMININE	PLURAL
NOMINATIVE	se	þæt	sēo	
ACCUSATIVE	þone	þæt	þā	þā (þe)
GENITIVE	þæs	þāra	þǣre	
DATIVE	þǣm þām	þǣm, þām	þǣre	

Table 6. Old English demonstratives

Present-day English *the* developed from this rich paradigm of demonstratives. This change from demonstrative-to-article, which took place somewhere in eME (Denison 2006) is often characterized syntactically as a positional change within the DP. The demonstrative pronoun is considered to be in Spec,DP as in (12a), whereas the article is located in the head of D, as in (12b).

(12) a. $[_{DP}$ þæt D^0 $[_{NP}$ wif]]
b. $[_{DP}$ Spec D^0 the $[_{NP}$ woman]]

It is not altogether clear whether the absence of invariant *þe* means that there was no definite determiner per se in OE, i.e., an element grammatically analyzed as the head of D, as Watanabe (2009) and Sommerer (2015) argue. It is also possible that there was already a definite article, but that it was homophonous with the demonstrative *se*-forms. This would mean that there is a period of structural ambiguity, before the language developed a single dedicated definite article.

Crisma (2011) suggests that the function of definite article emerged in OE, as all definite nouns appear with an overt determiner in 9th century prose, usually a *se*-form. Allen (2019) explores the ambiguity that arises here: the *se*-form as either a true demonstrative in Spec,DP or a *se*-form as an article in the D head. She studies the insertion of determiners in Ælfric's *Grammar* (dated to the beginning of the eleventh century). This is a grammar of Latin in the vernacular, but the insertion of determiners in the translations of Latin passages proves to be insightful. Latin does not have obligatory determiners, so if the category of article was already obligatory in OE, determiners are expected to be inserted consistently in the translation. Allen (2019) shows that

Ælfric indeed inserts articles in almost all of his translations. (13) is an illustration.

(13) gif ðu befrinst: *quis equitat in ciuitatem*? hwa rit into ðam port?, ðonne cweð he*: rex et episcopus* se cyningc and se bisceop.

'If you ask, *quis equitat in ciuitatem*? Who rides into the town?
Then he says: *Rex et episcopus* the king and the bishop'
(Zupitza 10.10-12)

In this example, three *se* forms are inserted where the Latin *Vorlage* lacks a determiner. In this case, 'king' and 'bishop' represent new, but identifiable, information, but the *se*-forms are not deictic. This leads Allen to conclude that these must be cases of grammaticalized use of a definiteness marker. Furthermore, her data corroborate Crisma's findings that Ælfric always uses definiteness marking in his homilies. These findings also support Denison's (2006) claim that the development of Present-day English *the* was gradual. We conclude that *se*-forms were already used as definite determiners (hence analyzed as a D head) before invariant *þe* became available. OE *se*-forms are thus ambiguous between a demonstrative pronoun and a determiner.

Jurczyk (2017) argues that it is this visible pronominal inflection (i.e., case and gender marking) that gives the demonstrative its anaphoric and discourse-linking properties in the syntax. In Jurczyk's (2017) proposal, referentiality 'piggy-backs' on the existence and interpretability of these φ-features; that is, if they are complete and interpretable on the demonstrative, we can establish the referentiality of the object. This is illustrated in (14), in which the demonstrative *se* 'that' is d-linked to the antecedent *anne scop* 'a poet' by virtue of its gender marking.

(14) Clause1 … anne scop [+acc; **+masc**] …
d-linking
Clause2 … se [+nom; **+masc**] …

Jurczyk's analysis focuses on demonstrative pronouns, which are not dependent on a noun for their interpretation, but it can easily be extended to full DPs. The loss of the demonstrative paradigm in the transition from OE to ME makes reference marking grammatically invisible.

We argue that the richness of the demonstrative paradigm is expressed morpho-syntactically as an additional feature layer on the relevant DP, which makes the given object available for movement. One approach to this may be

the big-DP analysis originally designed for clitic doubling phenomena (e.g., Kallulli 2000; Zeller 2008; Bax and Diercks 2012), which typically occur with discourse-given elements, suggesting that the extra feature layer is what formally distinguishes given objects from new objects. We remain neutral as to the precise nature of this extra feature, assuming that it facilitates anaphoric reference (i.e., φ-features; see Biberauer and van Kemenade 2011 for a similar proposal and discussion). For ease of exposition, we will here label the feature [Ref] and follow Jurczyk (2017) in locating it between DP and NP, as it is impossible to probe the NP and the demonstrative separately (in contrast to clitic doubling languages, where the clitic can incorporate into the verbal complex).

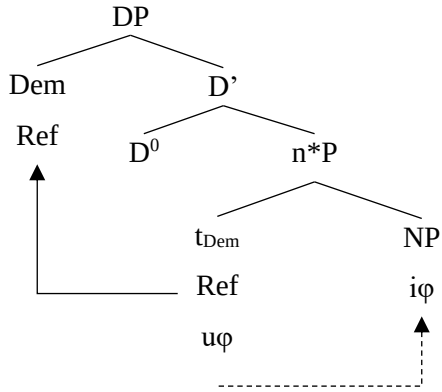
The structure of a big-DP is illustrated in (15). The NP enters the derivation with fully specified φ-features. The feature layer, which we label n*P, is merged above NP, with the demonstrative in its specifier. The demonstrative does not have a full set of interpretable φ-features: these are to a large extent dependent on the noun. Agreement with the noun ensures that these features are checked. Biskup's (2007) Phase Featuring[18] allows the demonstrative to move to Spec, DP by insertion of an Edge Feature (EF) on DP (on the assumption that DP is a phase), because [Ref] has not participated in any Agree relation. Raising the demonstrative to Spec,DP makes it visible for higher Probes.

[18] Biskup (2007) defines Phase Featuring as in (1):

(1) Phase Featuring
Iff a matching feature F does not have its probe feature F_{EPP} in its current phase subarray (workspace), add an F_{EPP}-feature onto the phase head.

He builds on Müller's (2004) notion of Feature Balance (which goes back to Heck and Müller's (2000) notion of Phase Balance), which postulates that for every probe feature F, there must be exactly one matching feature F in the lexical array, where the lexical array refers to the subarray within a phase. If the Goal and Probe are in different phases—and hence in different subarrays—Phase Featuring adds an EPP feature (EF in our analysis) to make the Goal visible, allowing the Goal to escape spell-out as the result of the Phase Impenetrability Condition (cf. Chomsky 2008).

(15)



This analysis immediately captures the observation that there is structural ambiguity between a demonstrative merged in Spec,DP and a demonstrative which functions as an article and is merged in D^0. The definite determiner enters the derivation without the additional φ-related [Ref] feature and is directly merged as the head of D, which precludes anaphoric reference on the basis of pronominal inflection. The seeming optionality for given objects to appear in OV order (cf. Sect. 3, Table 1) can be explained by underlying structural ambiguity of the DP: only objects with the additional [Ref] feature layer can move to Spec,*v*P.

The examples in (16) illustrate this difference. In (16a), *þone* is a *se*-form, but does not seem to have deictic force. In this case, we can hypothesize that while the demonstrative is specified for case and gender, it is merged directly in the head of D. The feature layer is lacking and hence the DP is not associated with [Ref], making it unavailable for movement.

(16) a.

Arrius	hatte	iu	sum	healic	gedwola, se
Arrius	called	then	some	profound	heretic, who
wolde	lytlian	**þone**	**leofan**	**Hælend**	
wanted	lessen	that	dear	Lord	

'There was a heretic called Arrius, who wanted to lessen the dear Lord.'

(ÆHom_10:159.1489)

b. forðan þe he ne mihte **þæt** **mæden** ahreddan
because that he NEG might that maiden rescue
wið þa hæðengyldan
with those idolators
'because he could not rescue that maiden from the idolators'

(ÆLS_[Basil]:364.698)

In (16b), on the other hand, the *se*-demonstrative *þæt* does have deictic force; it clearly refers back to one specific maiden who is (unjustly) accused of witchcraft by the idolators. In this case, the demonstrative is merged within an extra feature layer, which makes the referentiality of this DP visible to the syntax, by virtue of the [Ref] feature.

We note that it is difficult to provide conclusive evidence for this analysis because it cannot always be unambiguously determined whether an object has deictic force or is a true definiteness marker, without reference to the word order, rendering the analysis empirically unfalsifiable. One anonymous reviewer, for instance, wonders why the object in (17) is preverbal, even though it is similar to the object in (16a):

(17) gif he **ðone** **hælend** him belæwan mihte
if he that lord them betray could
'if he could betray the Lord to them'

(ÆCHom_II,_14.1:137.17.3037)

We would have to assume that, in this case, the determiner is raised to Spec,DP, allowing the object to move to a preverbal position. This does not invalidate our argument, however; the object is discourse-given, so an analysis in which the determiner is raised to Spec,DP is never ruled out. The relationship between the status of the definite determiner and the position of objects that we propose here does provide a clear rationale for the variation that we observe. (see Hinterhölzl 2017 for a proposal relating the grammaticalization of the definite determiner to a change in prosodic weight and hence spell-out position). It also provides a plausible trajectory for the loss of OV, as this coincides with the loss of richly inflected demonstrative determiners, concurrent with the grammaticalization of invariant *þe*. Given objects are no longer 'big-DPs,' and lose the feature layer required for movement to Spec,*v*P.[19]

[19] An anonymous reviewer wonders if such an analysis is tenable for (historical) German. German became a strict OV language, but also grammaticalized the definite determiner. If it is the grammaticalization process that is responsible for the loss of OV, one might wonder why German did not become VO as well. The crucial

4.3 Excursus: Quantified and negated object placement

So far, our analysis has focused on the derivation of preverbal objects as the result of givenness. However, there are two other types of preverbal objects that need to be accounted for in an analysis of historical English word order: quantified and negated objects. We will here briefly consider their distribution and will sketch how our analysis might be able to incorporate these objects.

Quantified and negated objects in our sample of non-translated OE direct objects show an almost equal distribution across OV and VO orders compared to referential objects. Quantified and negated objects appear in respectively 79 out of 113 cases (70.5%) and 23 out of 31 cases (74.2%) in OV order, whereas referential objects do so in 61.9% of the cases.[20] These numbers differ substantially from those presented in Pintzuk and Taylor (2006).[21] They find a much larger number of preverbal negated objects. This is presumably due to the fact that their dataset includes direct as well as indirect objects and Latin translations mixed in with native OE texts, as negated objects strongly prefer OV in late Latin (Gianollo 2016a, 2016b), which might have its effect on the position of negated objects in the translations. In our sample of translated texts, quantified and negated objects appear preverbally in no less than 143 out of 183 (78.1%) and 27 out of 29 (93.1%) of the cases.[22]

The discrepancies between OV with referential objects and OV with quantified and negated objects, as reported by Pintzuk and Taylor, lead them to conclude that these must represent different syntactic phenomena and that quantified and negated objects are syntactically different from non-negated

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difference between English and German articles is that the latter still show case and gender distinctions. In terms of our analysis, this means that they still have an additional feature layer (as this is φ-related). The feature that triggers movement is then reanalyzed as a more general feature, which might have resulted in a fixed OV word order.

[20] The difference is not significant for both quantified, $\chi^2 = 3.096$, $p = .078$, and negated, $\chi^2 = 1.9114$, $p = .167$ objects.

[21] Note that Pintzuk and Taylor do not include V-Aux clauses, as these are lost in eME. They argue that a comparison between the two language stages is therefore impossible for V-Aux clauses. For them, this is not problematic, because they assume grammatical competition, i.e., Aux-V and V-Aux are the result of two different grammars. This does mean, however, that a substantial part of the data is disregarded. We do not assume such grammatical competition, so we included both V-Aux and Aux-V clauses in the sample.

[22] Even though the number of OV is higher in the translated texts, the difference in the number of preverbal quantified objects is not significant, $\chi^2 = 2.159$, $p = .142$. The difference between negated objects in translated and non-translated texts is significant, $\chi^2 = 6.6815$, $p = .001$.

objects. Our data, however, do not suggest that these object types differ significantly. This warrants the conclusion that they operate in the same syntactic framework. We here follow van der Wurff's (1997) analysis in assuming that referential and quantified and negated objects move to the same syntactic position, which we identified as Spec,*v*P.

A detailed analysis of the derivation of quantified and negated objects is beyond the scope of this paper, but our framework of feature-driven movement, which assumes that movement of all object types is similar at an abstract level, allows for a coherent and unified theory of OV word order. We suggest that movement of quantified and negated objects is triggered by an unvalued feature located above *v*P. The object thus moves to avoid spell-out before it can agree with this feature, which is when Phase Featuring inserts an EF at the edge of *v*P. For quantified objects this might be a [uQuant] feature located on T—as a minimalist interpretation of Quantifier Raising.

The derivation of negated objects receives a natural interpretation if we consider the status of negation in the history of English. Much of the discussion on negation revolves around the status and position of NegP (Klima 1964; Pollock 1989; Haegeman & Zanuttini 1991; Haegeman 1995; Zeijlstra 2004; for historical English, van Kemenade 2000, 2011; Haeberli & Ingham 2007; Ingham 2005, 2007; Wallage 2017). Zeijlstra (2004) argues that a language only projects NegP when it is a negative concord (NC) language, i.e. when its interpretation is dependent on multiple elements within the clause.

Ingham (2007) explores the validity of Zeijlstra's proposal for the periods in English that allowed NC, noting that negated objects have the same syntactic distribution as referential objects and that a syntactic analysis in terms of Neg movement (movement of the negated object to Spec,NegP) is not the most economical. However, he is not specific on how displacement of negated objects proceeds in OE and ME, except that "no special analysis of negated objects is in fact required" (Ingham 2007, 383), suggesting that negated objects at least move to the same position as referential objects: spec,*v*P in our proposal. Object movement is triggered by a [uNeg] feature located on a NegP in a position higher than *v*P. The NegP forces the n-word to Spec,*v*P by insertion of an EF by Phase Featuring to make itself visible[23]

[23] We do not adopt Zeijlstra's (2004) notion of 'inverse Agree,' which means that we consider the n-word as semantically responsible for interpretation of negation, whereas the negation particle is semantically uninterpretable. We suggest that in cases where negation is expressed only by means of a negative particle (with or without reinforcer) the NegP carries the feature [iNeg]. A discussion is beyond the scope of this paper but see Breitbarth (2013) for an analysis of OE's closest relative Low German as a language with [iNeg] n-words and a [uNeg] negative particle and Biberauer and Roberts (2011) for an analysis of negation involving an Agree relation where the Probe is [uF] and c-commands the [iF] Goal. Nothing crucial hinges on this

(which is consistent with the proposals by van Kemenade 2000, 2011; Haeberli & Ingham 2007).

4.4 Deriving all word orders

In the previous sections, we have brought together the technical steps necessary to derive all OE word orders and our empirical results. We will here summarize the derivations for the word orders in (1).

If no information structure-driven movement takes place of the type discussed in this article, the word order of a sentence is Aux-V-O, as in (1c), repeated as (18). The derivation is included in the tree in (19).

(18) Aux-V-O

þæt	ic	mihte	geseon	**þone**	**scinendan**	**engel**
that	I	might	see	that	shining	angel

'that I might see the shining angel'

(ÆLS_[Cecilia]:46.7137)

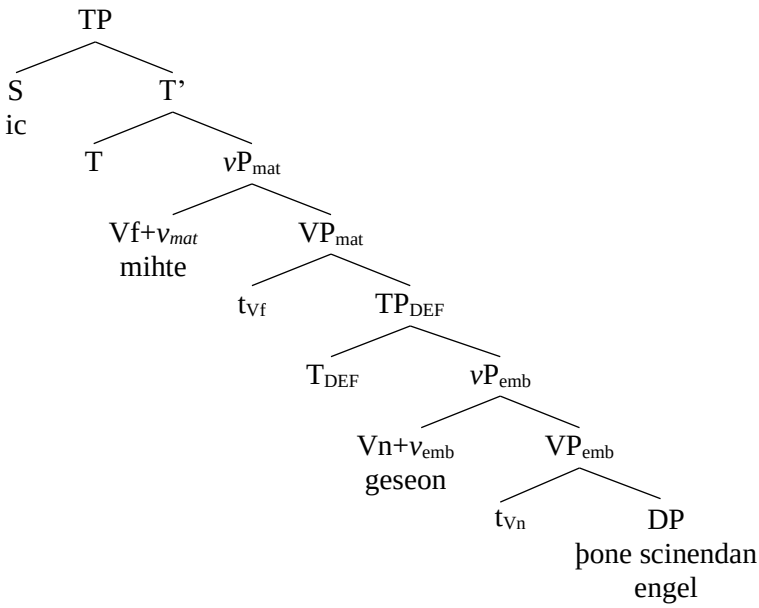
There is no object or vP$_{emb}$[24] movement in these clauses. The derivation involves only obligatory movement (i.e., V-to-*v* and movement of the subject (S) to a higher position, Spec,TP, but see Biberauer and van Kemenade 2011 and van Kemenade and Milicev 2012 for subject placement in OE).[25] Vf does not move higher than v_{mat}, even though it is theoretically possible for Vf to move to T; this would result in the same surface order.

theoretical consideration, however. In a phase-based approach, the Probe and Goal are in different phases regardless of the Agree relation, which means that they cannot Agree without moving the constituent in the VP to the phase edge (as a result of the PIC).

[24] For ease of exposition we refer to the embedded *v*P associated with the non-finite verb as vP$_{emb}$ and the *v*P associated with the restructuring matrix verb as vP$_{mat}$.

[25] For ease of exposition we omit intermediate landing sites of the subject,

(19)



The derivation of Aux-O-V orders in (1b), repeated as (20), is illustrated in (21)

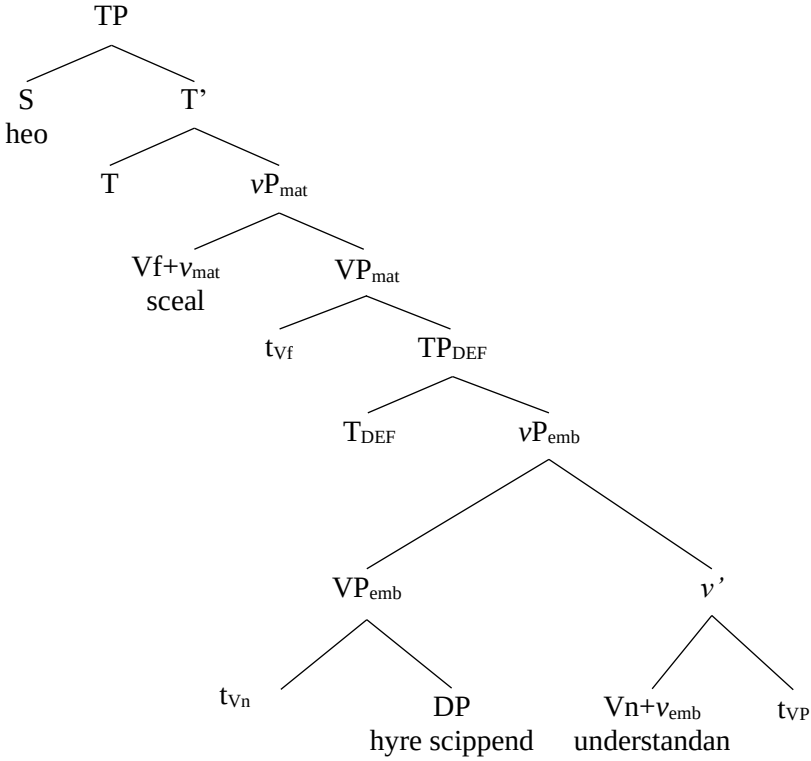
(20) Aux-O-V

þurh	þa	heo	sceal	**hyre**	**scippend**	<u>understandan</u>
through	which	it	must	its	creator	understand

'through which it must understand its creator'

(ÆLS_[Christmas]:157.125)

(21)



These orders are the result of 1) movement of Vn to v_{emb}, 2) either pied-piping the full VP_{emb} or by moving only the object DP to spec,vP_{emb}, 3) movement of Vf to v_{mat}. In the case of DP-movement, VP_{emb} remains in its base position and only the DP is moved to spec,vP_{emb}. Again, (possibly incipient) V-to-T does not affect surface word order.

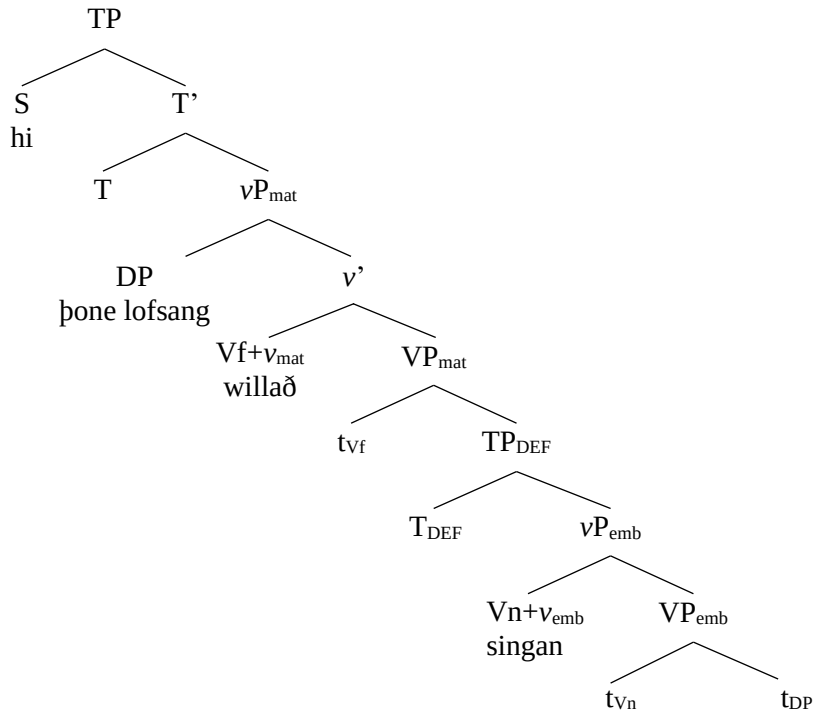
The derivation of O-Aux-V orders, (1a), repeated in (22), proceeds according to the same steps as Aux-O-V orders, but in this case the object moves to Spec,vP_{mat}. This is illustrated in (23).

(22) O-Aux-V

and	gif	hi	**þone**	**lofsang**	willað	æt	þam	wundrum
and	if	they	that	psalm	want	at	those	wonders

singan
sing
'and if they sing that psalm for the miracles…'
(ÆLS_[Swithun]:237.4375)

(23)



We argue that in these cases the EF is inserted on vP$_{mat}$, rather than vP$_{emb}$. We consider this an instance of long-distance scrambling, which is a common occurrence in restructuring contexts (Wurmbrand 2001). However, this is not the most economical option; scrambling to vP$_{mat}$ means skipping another viable target, vP$_{emb}$,[26] which may account for the relative sparsity of O-Aux-V orders. Furthermore, as an anonymous reviewer pointed out, it might lead to

[26] The object has to move through the edge of vP$_{emb}$ to escape spell-out on the lower cycle. Since [Ref] has not entered a Agree relationship once vP$_{emb}$ is completed, Phase Featuring allows it to move to spec,vP$_{emb}$ so that it remains visible for the higher probe on vP$_{mat}$.

a violation of the Minimal Link Condition (Chomsky 1995), since the subject could be attracted to satisfy *v*'s EF. As we have argued above, however, the EF on *v* is selective; it is specifically concerned with elements with a [Ref] feature layer and cannot be satisfied by a different feature. In theory, a subject with the [Ref] feature layer could also satisfy v_{mat}'s EF. This leads to the prediction that there are no given subjects, i.e. subjects which could potentially be analyzed as a 'big DP', in O-Aux-V order in our dataset. This is indeed the case. The subject is either a pronoun (which cannot be treated on a par with DP objects), an indefinite subject, or absent altogether. This makes the object the only available constituent for movement to Spec,vP$_{mat}$. Crucially, there is no V-to-T movement in these orders. V-to-T movement with scrambling of objects with the [Ref] feature layer to vP$_{mat}$ would result in Aux-O-V orders.

The derivation of O-V-Aux (1d), repeated as (24), is illustrated in (25), and involves 1) Vn-to-*v* movement, 2) pied-piping of the VP$_{emb}$ or object movement to Spec,vP$_{emb}$, 3) movement of Vf to v_{mat}, and 4) movement of TP$_{DEF}$ to Spec,vP$_{mat}$.

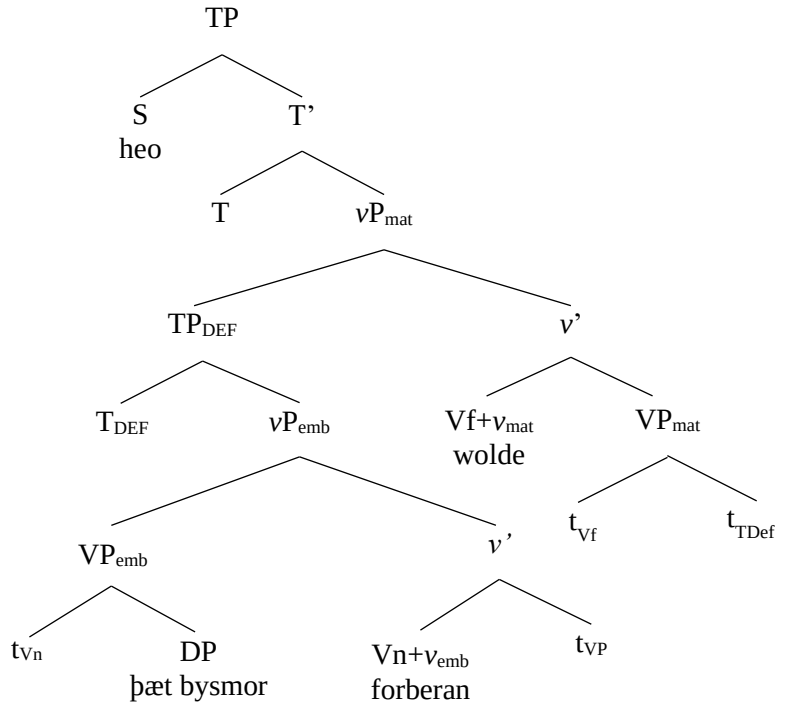
(24) O-V-Aux

gif	heo	**þæt**	**bysmor**	<u>forberan</u>	wolde
if	she	that	disgrace	tolerate	would

'if she would tolerate that disgrace'

(ÆLS_[Eugenia]:185.305)

(25)



Contra B&R, we argue that it is not optional pied-piping of the subject that yields V-Aux orders, reducing V-Aux orders to a side-effect of T's EF satisfaction. There are some indications that V-Aux orders are independently motivated. A detailed analysis is beyond the scope of this paper, but initial observations suggest that this is because the information in the entire clause is backgrounded (Struik & de Bastiani 2018; see also Milicev 2016). We therefore argue that the entire TP_{DEF} is moved to Spec,vP_{mat}. Movement to Spec,vP_{mat} creates a desirable parallel with movement to spec,vP_{emb}: both are instances of movement with an information-structural motivation, which fits into the line of research postulating that *v* is the domain where information structure is encoded (López 2009 and sources cited there). It also provides a natural explanation for the rarity of V-Aux-O orders, as it implies a clash in information structure: a backgrounded vP_{emb} is not likely to occur with a new object. The assumption that it is TP_{DEF} that raises to Spec,vP_{mat} also allows us to rule out V-O-Aux orders. Objects that are not raised to spec,vP_{emb} are sent to spell-out before TP_{DEF} is raised to spec,vP_{emb}. Finally, Vf must be located in v_{mat} in these clauses; the assumption of across-the-board V-to-T movement in OE, would not allow us to derive V-Aux orders. V-Aux orders are lost after

the early Middle English period, which is also when V-to-T becomes an option.

The derivation of V-Aux-O orders, (1d), repeated as (26), proceeds similarly to that of O-V-Aux orders, except for step 2: the object is not raised to spec,vP$_{emb}$, because it lacks the [Ref] layer, and remains in the complement of VP$_{emb}$. VP$_{emb}$ is sent to Spell-out once vP$_{emb}$ is complete, owing to the Phase Impenetrability Condition (cf. Chomsky 2000). This condition states that the complement of a phase (vP$_{emb}$) is inaccessible for further syntactic operations once it has been completed. As a consequence, the complement of the phase is sent to Spell-out and transferred to the interfaces. As the object has not left VP$_{emb}$ in the derivation in (27), it is effectively frozen in place once vP$_{emb}$ is completed and sent to PF before Vn is; obligatory movement to v_{emb} evacuated it from the Spell-out domain of the vP$_{emb}$ phase. As a result, the object surfaces in postverbal position. This is indicated by the transparency of the VP in the derivation in (27).

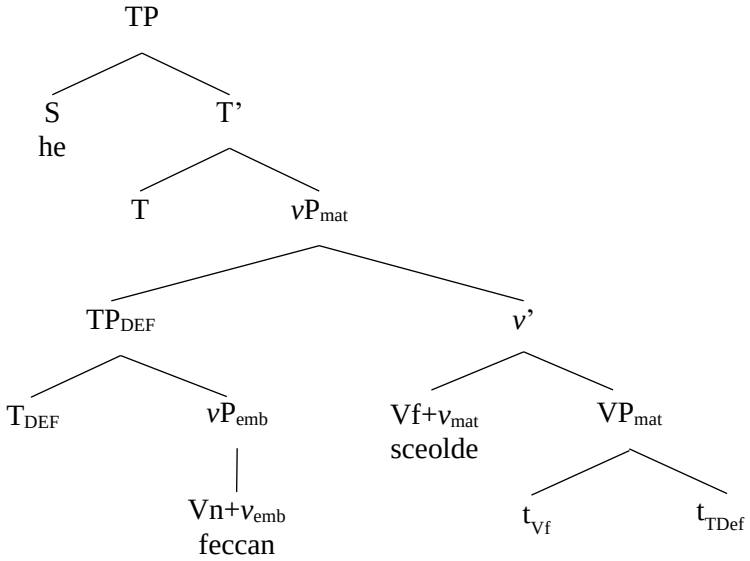
(26) V-Aux-O

þæt	he	feccan	sceolde	**þæt**	**feoh**	mid	reaflace
that	he	fetch	should	the	goods	with	robbery

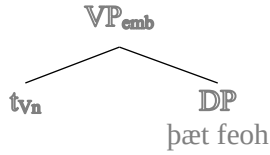
'that he should steal the goods'

(ÆLS_[Maccabees]:760.5327)

(27)



Already sent to Spell-out:



The analysis that we developed in this section can derive all word orders in (1) in a uniform way. The various patterns are the result of a combination of three different movement options: 1) movement of given/quantified/negated objects to Spec,*v*P, 2) optional pied-piping (DP or VP movement), 3) movement of TP_{DEF}. In the following section, we will evaluate the diachronic feasibility of this analysis.

5 TOWARDS A STRICT VO LANGUAGE

This article has presented a novel analysis of word order in OE. After reconsidering the relevant empirical data, we arrived at two key observations that an analysis of OE word order variation has to account for: 1) objects in OV order are given, but VO is pragmatically mixed, 2) quantified and negated objects are not syntactically distinct; their distribution and frequencies do not support a special syntactic status. We argued that these objects move from VO order to Spec,*v*P under the influence of a feature related to either their information structure or object type. We might add a third requirement for this analysis: it has to give a plausible account for the stepwise disappearance of word order patterns in the diachronic development from OE to eME. This is what we will show by way of conclusion.

The first change that we observed is the loss of V-Aux orders. In our account, the option to move the entire infinitival complement to the specifier of vP_{mat} is lost first. If our account in terms of foregrounding and backgrounding is correct, we might find an explanation in the multilingual landscape that characterized transition from OE to ME. The acquisition of information structure in L2 contexts in often considered "the final hurdle" (Verheijen et al. 2013); while L2 learners can acquire the lexicon, syntax, morphology, and phonology of a foreign language readily, the information structure of that language proves more difficult. The pragmatic distinction between V-Aux and Aux-V orders is subtle, and this trigger for movement of the infinitival complement might not have been recognized by L2 learners, resulting in a reduced number of V-Aux clauses. Secondly, V-Aux is only possible when Vf remains in VP_{emb}, i.e. when there is no V-to-T movement. Once V-to-T movement becomes a more robust option, V-Aux becomes impossible as well.

The next step is the loss of the pied-piping option to check *v*'s EF requirements. Biberauer and Roberts (2008) suggest that particles play a role here, as one unambiguous case of pied-piping is O-Particle-Vn orders. These must involve pied-piping, as in these cases the particle must be fronted with the VP to surface preverbally. Biberauer and Roberts (2008, 89–90) note that verb-particle combinations become "vanishingly rare in the 12th and 13th century", possibly due to French influence. Particles are, however, by no means lost (see Los et al. 2012 for quantitative data). The verb-particle constructions that are observed in eME do show a strongly increased preference for Vn-Part order, and strict Vn-Part order by the end of ME (Los et al. 2012). The loss of O-Particle-Vn orders suggests a reanalysis of OV order as object movement. Consequently, if pied-piping is no longer an option, we do not expect VP internal material left of the verb.

The option of moving only the DP to satisfy *v*'s EF requirement is lost as well, resulting in the loss of OV orders with referential objects. This is the result of grammaticalization of demonstratives from Spec,DP elements to D-heads. This grammaticalization step leads to the loss of the additional feature layer, which marks the object as [Ref], and hence of the syntactic possibility to scramble referential objects. It is generally accepted that OV with quantified and negated objects remains a possibility until the 16th Century when OV with referential objects had already been lost. This also falls out in our account, since movement is triggered by a different feature. The loss of NC entails the loss of a NegP and hence the need for Agree.

The framework presented here thus not only incorporates synchronic variation in OE, but also allows for a natural explanation for the changes throughout the history of English, which is characterized by a stepwise reduction in movement possibilities.

CHAPTER 4
THE RELATION BETWEEN THE LOSS OF VO AND SCRAMBLING IN DUTCH[1]

ABSTRACT This paper addresses the relation between two types of word order variation in two stages of Dutch: OV/VO variation in historical Dutch and scrambling in Present-day Dutch. Information structural considerations influence both types of word order variation, and we demonstrate by means of a comprehensive corpus study that they have a comparable pattern: given objects tend to appear earlier in the sentence than new objects. We infer from this that the two types of word order variation are diachronically related. Our findings support an analysis of scrambling as object movement from a uniformly head-initial base via specifier of VP to the specifier of *v*P. We argue that historical Dutch allows Spell Out of the object in its postverbal base position, but that this possibility was lost due to internal pressure to reduce the optionality in Spell Out positions. Consequently, the boundary between the given and new domains shifts from the verb to the adverbial.

1 INTRODUCTION

The position of direct objects in Dutch clauses has always known a certain freedom. In Middle Dutch (1150-1500) and early New Dutch (1500-1700) (henceforth referred to collectively as historical Dutch), direct object DPs appear in postverbal (VO) or preverbal position (OV), illustrated in (1), both from the end of the 13th century. In (1a), the object *dat hues terhurst* 'that Huis ter Horst (a castle)' is placed to the right of the main verb *genomen 'taken'*, and the object *dat riet* 'that reed' in (1b) is placed to the left of the main verb *ghemaect* 'made'.[2]

[1] This chapter is based on Struik, Tara & Gert-Jan Schoenmakers. Under revision. When information structure exploits syntax: The relation between the loss of VO and scrambling in Dutch. *Journal of Linguistics*.

[2] The text references have the following format: Corpus_DocumentID_Year of publication. We refer the reader to Section 3 for details regarding the text selection and Appendix 2 for an overview of the texts included in this study.

(1) a. VO in historical Dutch
dat ic hebbe genomen **dat hues terhurst** bi wille mijns heren
that I have taken that Huis ter.Horst by will mine lord
'that I have taken that Huis ter Horst by the will of my lord'
Gysseling_1502A_1296

b. OV in historical Dutch
die **dat riet** ghemaect hadde
who that reed made had
'who made that reed'
Gysseling_1340_1294

The postverbal object position was lost from the Dutch language around the 16th century. However, Dutch still allows variation with respect to the position of the object vis-à-vis the position of adverbials. This phenomenon, known as *scrambling*, is illustrated in (2). The object *het boek* 'the book' may appear to the left or to the right of the clausal adverb *waarschijnlijk* 'probably'.

(2) dat Jan (**het boek**) waarschijnlijk (**het boek**) las.
that Jan the book probably the book read
'…that Jan probably read the book.'

OV/VO variation and scrambling have both been argued to regulate the information structural partitioning of the clause. From very early on, grammarians have been aware that given information tends to precede new information (Weil 1844, Behaghel 1909). Dutch is no exception in this regard. Preverbal objects in historical Dutch, and objects that appear in a position to the left of the adverbial ("scrambled" objects) in Present-day Dutch are often claimed to convey given information, while postverbal objects and "unscrambled" objects, which appear to the right of the adverbial, are claimed to convey new information (cf. Burridge 1993, Coussé 2009 on OV/VO; Schoenmakers et al. 2021 and sources cited there on scrambling).

This raises the question if, and if so, how, historical Dutch OV/VO variation and Present-day scrambling are related. Based on a comprehensive corpus study of Dutch written between the 13th and 19th century, we demonstrate that OV/VO variation and scrambling serve a similar purpose, because in both cases the position of the object is (in part) dependent on information structure. However, while scrambling was already a syntactic

option in historical Dutch, its information structural effect only emerges as the postverbal object position loses its productivity.

We demonstrate that new objects typically occur in postverbal position in earlier stages of Dutch, although they are attested in preverbal position as well. Given objects surface in preverbal position in the majority of the cases. There are no clear indications of information structural restrictions on scrambling as long as VO is a productive option in historical Dutch (until the 16th century). Once new objects start to appear in preverbal positions more frequently, scrambling becomes sensitive to information structure. The boundary between the information structural domains in which given and new information is expressed thus shifts from the verb to the adverbial in the so-called middle field of the clause. The loss of VO entails the loss of an important pragmatic marker, and we show that the syntax of Dutch allows enough flexibility to generate a new information structural division within the topological region to the left of the verb, with the adverbial as the novel boundary between information structural domains.

We present an analysis of Dutch object placement which allows a natural transition from a language that marks information structure by means of OV/VO variation, to a strict OV language which does so by means of scrambling. We build on the antisymmetric analysis of Dutch scrambling proposed in Broekhuis (2008), and argue that OV/VO variation and scrambling both result from the same process. Specifically, we argue that objects are generated in postverbal position and consequently move to structurally higher positions in the extended projections of VP and *v*P to check structural features, leaving behind copies in each intermediate position. Which of these copies is spelled out depends on (discourse-pragmatic) interface conditions. The lowest, postverbal, Spell Out option is lost after the 16th century, restricting the variation in surface position of the object to the middle field.

The paper is organized as follows. Section 2 sets out the key issues and patterns that play a role in Dutch object placement, from a diachronic and a syntactic perspective. Section 3 presents our approach to the corpus data. The results are presented and discussed in Section 4. Section 5 presents our analysis of Dutch clause structure. Section 6 concludes.

2 VARIATION IN DUTCH OBJECT PLACEMENT

Present-day Dutch is generally considered an asymmetric SOV language, with obligatory V2 in the main clause. Koster (1975) was the first to argue, on the basis of a number of distributional tests, that the position of the finite verb in main clauses is derived from a clause-final position. Although the object follows the verb in main clauses with only a finite verb, Koster shows that this

is a surface phenomenon. He demonstrates that verb particles are stranded in clause-final position (*hij belde het meisje op* 'he calls the girl up'). In main clauses with more than one verb, the non-finite verb remains in clause-final position and the object is preverbal (*hij heeft het meisje opgebeld* 'he has the girl up.called'). Since there is no V2 movement in subclauses, DP objects always precede the verb in these cases (*dat hij het meisje opbelt* 'that he the girl up.calls'). From this perspective, Dutch is an SOV language. These observations do not preclude an antisymmetric (cf. Kayne 1994) approach to Dutch clause structure, however. In fact, in later work Koster argues that SOV-clauses in Dutch are derived from underlying SVO structure, (Koster 1999; see also in particular Zwart 1993, 1994, 1997).[3] We will pursue such an analysis in Section 5.

The syntax of both Present-day and historical Dutch is frequently approached from the perspective of topological fields, or a so-called *tang* 'brace' construction, illustrated in Table 1 (first applied to Dutch by Paardekooper 1955). In main clauses, the finite verb in V2 position marks the left bracket of the brace, and the non-finite verb in clause-final position marks the right bracket. In subclauses, the complementizer serves as the left bracket, and the verb(s) in clause-final position as the right bracket.

Prefield	**Left bracket**	**Middle Field**	**Right bracket**	**Postfield**
Hij	*moest*	*inderdaad het paper*	*inleveren*	*op woensdagmiddag*
he	should	indeed the paper	submit	on Wednesday afternoon
…	*dat*	*hij inderdaad het paper*	*moest inleveren*	*op woensdagmiddag*
	that	he indeed the paper	should submit	on Wednesday afternoon

Table 1. Illustration of topological regions and the "brace" construction in Dutch clauses

[3] However, Koster (2008) argues later for the return to the classical, pre-minimalist analysis of Dutch.

The assumption of a brace construction as a descriptive template allows differentiation between a prefield (material preceding the left bracket), a middle field (material between the left and the right bracket), and a postfield (material following the right bracket). The locus of variation in object placement in historical Dutch is between the middle field and postfield: direct objects appear in the middle field (preverbally) or in the postfield (postverbally). The locus of variation in Present-day Dutch is in the middle field (scrambling). We will discuss both types of variation in turn.

2.1 OV/VO variation in historical Dutch

OV/VO variation is one of the main syntactic characteristics of older (West) Germanic language varieties, and sparked a vigorous debate on word order typology as well as on the analysis of individual languages (see e.g. van Kemenade 1987, Pintzuk 1999, Taylor & Pintzuk 2012a, 2012b, de Bastiani 2019, Struik & van Kemenade 2020, 2022, on Old English and Middle English; Petrova 2009, Sapp 2016 on Old High German; Sapp 2014 on Middle High German; Walkden 2014, Struik in press on Old Saxon and Middle Low German). This is also the case for historical Dutch, although traditional analyses often (implicitly) assume historical Dutch to be an OV language. VO order is usually accounted for by an extraposition rule, which is taken to be more liberal than in Present-day Dutch, which only allows full clauses (CPs) and non-predicative PPs in postverbal position (see Zwart 2011).

Burridge (1993: Ch.3) approaches OV/VO variation in Middle Dutch from a topological perspective, and employs the term "exbraciation", that is, displacement of material to a position outside of the brace. Similarly, Neeleman & Weerman (1992: 189) assume VO structures to be "leakages in the older West Germanic OV structures." Most studies only give a descriptive overview of observed VO constructions and do not directly address the issue of underlying clause structure (e.g., Gerritsen 1978, Van den Berg 1980, de Meersman 1980). Gerritsen (1987), Blom (2002), and De Schutter (2003) are notable exceptions, and all conclude on the basis of frequency that Middle Dutch is an OV language. Gerritsen (1987) adds as evidence that pronouns are always OV and argues that, since Proto-Indo-European was considered an OV language, positing a change from OV to VO and then back to OV is conceptually undesirable. An argument for Blom (2002) to assume that OV is the base order in Middle Dutch is that VO is only available under specific conditions: it can only be used when the object contains a relative clause or when the object belongs to the focus of the clause.

Weerman (1987, 1989) is one of the few who provides a syntactic analysis of OV/VO variation in historical Dutch. He argues that languages allow both orders at D-structure (in Government-Binding terms), since theta roles are assigned hierarchically and not directionally. However, constituent orders

must be licensed at S-structure, following Case Theory, which assigns case directionally. Weerman argues that Present-day Dutch assigns case exclusively to the left, which results in basic OV order. His analysis of VO orders rests on the assumption that constituents can escape Case assignment if they have their own licensor, which Weerman claims is, at earlier stages, morphological case. This means that in Middle Dutch, which distinguished four morphological cases, the choice between OV and VO is essentially free (from a syntactic perspective). However, Dutch (largely) lost morphological case marking, which according to Weerman means that a postverbal object can no longer be licensed. As a result, VO order is lost. A potential problem for such an analysis is the observation that German retained its inflections but, like Dutch, became more rigidly SOV. This suggests that more factors come into play in the process of word order change. We will come back to this point in Section 5.2.

Much of the discussion in (recent) literature on OV/VO variation in historical West Germanic revolves around the influence of information structure. The hypothesis that preverbal objects convey given information and postverbal objects new information has been explored for many (West) Germanic language varieties (see e.g., Burridge 1993; Bech 2001; Blom 2002; Petrova 2009, 2012; Coussé 2009; Petrova & Speyer 2011; Taylor & Pintzuk 2012; Walkden 2014; de Bastiani 2019; Struik & van Kemenade 2020, 2022). Understanding the nature of the variation helps to inform the syntactic analysis of a language. Struik and van Kemenade (2020, 2022), for instance, show for historical English that objects in preverbal position predominantly express given information, while objects in postverbal position can be given or new. They take this as evidence for an analysis of historical English as a VO language, with leftward object movement that is driven by information structure.

The effect of information structure has also been explored in earlier studies of Middle Dutch. Burridge (1993: 107), for example, claims that "exbraciated material is likely to be non-topical material, i.e., usually unknown information, which cannot be understood from the context and which is not shared by speaker and hearer." Burridge, however, is concerned with all types of sentence material that can be exbraciated, and bases her conclusions on general characteristics of grammatical categories, rather than on annotation of individual objects (e.g., objects are more likely to exbraciate than subjects, because they more frequently convey new information).

Blom (2002) notes that one of the factors responsible for VO order in Middle Dutch is that the object belongs to the focus of the clause as well.[4]

[4] Focus (or "non-topicality") and discourse-newness are related terms that are sometimes used interchangeably in the literature. However, the two terms do not refer to the same concepts. Foci are elements that express informative or contrary-to-

Blom studies the characteristics of postverbal objects in three different text genres: official texts, religious texts, and narratives. She observes that objects of naming verbs, such as *noemen* 'call' and *heten* 'call', are always postverbal, and maintains that this is due to the fact that this information is never part of the common ground. She also observes that there is a large amount of VO structures in official texts, which she claims is because direct objects in these clauses "encode the item that is at the heart of the legal agreement" (Blom 2002: 18). Similarly, Coussé (2009) uses the determiner as a proxy for information structure (following Givón 1988) and finds a relation between the definiteness of objects and their surface position: indefinite objects, which typically convey focused information, are more likely to appear postverbally than definite objects, which typically convey non-focused information.

2.2 Scrambling in Present-day Dutch

VO word order is lost from the Dutch language around the 16th century (see Coussé 2009), which restricted variation to the middle field (as in (2) above). While experimental and corpus studies investigating this type of variation are scarce, various syntactic analyses have been proposed to account for scrambling in the theoretical literature (Verhagen 1986, Vanden Wyngaerd 1989, Zwart 1993, Neeleman 1994, de Hoop 1996, 2003, Neeleman & Reinhart 1998, Koster 1999, 2008, Schaeffer 2000, Broekhuis 2008, Neeleman & van de Koot 2008, Schoenmakers 2020). There is a consensus that information structure also plays a crucial role in scrambling. The literature discusses topicality (or "aboutness", cf. Reinhart 1981), discourse-anaphoricity (i.e., explicit mention in previous discourse), and presuppositionality (the level of activation of a referent in the common ground; cf. *accessibility* in Ariel 1990), although Schoenmakers et al. (2021) find in a language production study that the topicality status and the discourse-anaphoricity of definite objects induce distinct effects on their position in the middle field. In general, however, scrambling follows the given-before-new pattern: given objects (topical or anaphoric) are most frequently produced to the left of the adverb (i.e., in scrambled position), while new objects (focused

expectation material (sometimes also called "rheme" or "comment"; see de Swart & de Hoop 2000). Although foci typically convey information that is new to the discourse, this is not necessarily the case, as evidenced by the discourse-given focus in (i).

(i) Speaker A: Who does John's wife love?
Speaker B: John's wife loves [JOHN]$_{\text{Focus}}$.

or non-anaphoric) are typically located to their right (i.e., in unscrambled position) (see also Verhagen 1986).

Such an information structural partitioning is supported by the fact that pronouns, which typically convey given information, appear in scrambled position almost obligatorily (but not if they receive contrastive stress, for example, see Bouma & de Hoop 2008), as illustrated in (3).

(3) a. # We moesten eerst **hem** voeren.
we had.to first him feed
b. We moesten **hem** eerst voeren.
We had.to him first feed
'We had to feed him first.'

This contrast is reflected in the corpus data reported in van Bergen and de Swart (2009, 2010), who investigate the scrambling behavior of different kinds of objects in spoken Dutch: 99% of pronouns in their dataset appear in scrambled position. Only 2% of indefinite objects, which typically convey new information, are scrambled. They find most variation with proper names (53% scrambled). Van Bergen and de Swart find only 12% of definite objects in scrambled position. This is surprising, given that, on the assumption that the determiner can be used as a proxy for information structure (Coussé 2009), definite objects are expected to convey given information and hence to appear in scrambled position. Even more striking is that the authors also annotate for anaphoricity and find that only 22% of anaphoric definite objects are located in scrambled position. This finding contradicts most theoretical literature, where a strict discourse template is postulated in which given objects obligatorily occur in scrambled position (see Broekhuis 2021 and Schoenmakers 2022 for discussion).

Van Bergen and de Swart (2009) note that speakers are more likely to use a pronoun instead of a full DP when the object is anaphoric. However, Schoenmakers and de Swart (2019) find in an experimental study, in which participants are forced to use definite DP objects, that they are produced in scrambled position in 45% of the trials with a clause adverb. Schoenmakers et al. (2021) find in a follow up study that definite objects which are anaphoric are produced in scrambled position from 42% to 57% (depending on the condition), whereas non-anaphoric (focused) definite objects are produced in scrambled position in only 34.5% of the trials. Even though the proportion of scrambled anaphoric definites is much higher than that in the corpus data reported in van Bergen and de Swart (2009, 2010), the information structural partitioning in scrambling clauses in both studies is nowhere near categorical.

These data cannot readily be accounted for by most theoretical approaches to Dutch scrambling, which link the information structural effect to a post-

syntactic mapping rule that maps a discourse-anaphoric interpretation onto the scrambled position (e.g. Neeleman & van de Koot 2008), or to Cinque's (1993) *Nuclear Stress Rule*: objects in unscrambled position typically carry the main stress of the clause, and given that stress corresponds with new information focus assignment (e.g. Chomsky 1971, Jackendoff 1972, Cinque 1993), objects in this position are interpreted as information that is new to the discourse (e.g. Neeleman & Reinhart 1998, Broekhuis 2008). Objects in scrambled position, by contrast, undergo a process of "anaphoric destressing" (Reinhart 2006) and convey information that is already available in the context set. Such analyses predict that given objects obligatorily occur in scrambled position, and new objects in unscrambled position (but see van der Does & de Hoop 1998 and de Hoop 2003 for notable exceptions).

Little is known about the diachrony of scrambling in Dutch. To our knowledge, this phenomenon has never been addressed in the literature on historical Dutch syntax. It is easy to show, however, that it is at least a syntactic option: we find objects in a position immediately left-adjacent to the verb, as in (4a), but also in a position on the left of an adverbial, as in (4b).

(4) a. naedat sij op ten xviii. julij **haer** **legher** **te**
after they on the 18 july her army at
Heyloe opghebroken hadden
Heiloo dissolve had
'after they had broken up their army stationed at Heiloo on 18 July'

CLVN_Nanning van Foreest_1573-83

b. dat diegene die dat bijer buten vueren sellen
that the.one who that beer outside carry will
dat **teyken** **daeraf** in den poerten toenen sellen
that proof thereof in the gates show will
'that the one who transports the beer out will show proof thereof at the gates'

CLVN_ Utrecht_1530-1539

It is not clear, however, whether scrambling was already information structurally motivated in historical Dutch in the same way as in Present-day Dutch. This raises the question if, and how, scrambling is related to OV/VO variation.

2.3 The relation between OV/VO variation and scrambling

The discussion above shows that Dutch allows (at least) three object positions throughout its history: VO, OV, and O-Adv-V. The literature suggests that

OV/VO variation in historical Dutch and scrambling in Present-day Dutch serve a similar purpose; they differentiate the information structural domains of given and new information. This leads to the hypothesis that the two types of variation are diachronically related: the loss of VO entails the loss of an important pragmatic marker and hence entails a shift in the locus of information structure encoding.

The next sections report on a corpus study of historical Dutch in which we investigate how the relation between syntax and information structure develops over time. We hypothesize that there is an information structural effect on OV/VO in the earliest part of our dataset. More specifically, we expect to find given objects in preverbal position, while new objects surface in postverbal position. As long as VO is a productive option in Dutch, we do not expect an information structural effect of scrambling since we expect OV objects to be given. As the frequency of VO reduces, the verb loses its status as the boundary between information structural domains. Information structure then "exploits" syntax to find a new way to distinguish between given and new information. Specifically, we expect that scrambling does not have a clear discourse-related function in the earlier stages of Dutch and only becomes information structurally distinctive around the 16th century when VO is no longer a productive syntactic option.

3 Materials and methodology

We studied a comprehensive selection of historical Dutch texts to test the hypotheses introduced in the previous section. Relevant clauses were manually collected from various sources over the time period between 1250 and 1900. The online version of Corpus Gysseling (2021) was used for 13th century material and the Corpus van Reenen-Mulder (CRM) (van Reenen & Mulder 1993) for 14th century material. The majority of the texts in CRM are short charters, so we supplemented this material with several longer texts from the Corpus Laatmiddel- en Vroegnieuwnederlands (CLVN) (van der Sijs, van Kemenade & Rem 2018). The CLVN was also the source for 15th, 16th, and 17th century material. We used the Compilatiecorpus Historisch Nederlands (CHN) (Coussé 2010) for narrative texts from the late 16th century onwards. From each corpus, a representative sample of texts was selected based on the localization of each text. We excluded texts from the (north-)eastern part of the Netherlands to avoid potential influence from German, Low Saxon, and Frisian. The main body of texts originate from Holland, Utrecht, and Flanders. We supplemented the dataset with several religious texts to balance the overwhelmingly official nature of the earlier texts. This procedure resulted in a corpus of approximately 700,000 words. A complete overview of the material is given in Appendix 2.

For each text in our selection, we manually selected all subclauses with a direct object, a finite verb (excluding forms of *zijn* 'be' to exclude passives), and a non-finite verb (excluding *te* 'to' infinitives). Selecting clauses with two verbs ensures that there is no effect of (finite) verb movement on the order of the main verb and the object. Indirect objects were excluded, because their behavior is not comparable to that of direct objects. Although indirect objects do appear in postverbal position in historical Dutch, it is unclear whether they are subject to the same constraints as direct objects. Burridge (1993) notes that indirect objects are not as likely to appear postverbally as direct objects, but this might be because they are mostly pronouns in her sample. Research on Old English indicates that there is no conclusive regularity in the placement of indirect objects (Koopman 1990), and that information structure does not seem to play a role (Struik & van Kemenade 2020). We leave the behavior of indirect objects for future research. Further, we excluded pronominal objects, as these are categorically OV. While it might be argued that pronouns are always preverbal because they are prototypically given, their syntactic status is different from that of full DPs. Pronouns are prosodically light elements and might be analyzed as clitics (see van Kemenade 1987; van Bergen 2003; Pintzuk 2005 and the sources cited there for discussion of the status of pronouns in Old English, and Zwart 1996 for a discussion of Dutch weak pronouns as clitics). We also excluded clausal objects, as these are categorically VO (cf. Gerritsen 1987, Burridge 1993).

After collecting relevant clauses, each object was manually annotated for INFORMATION STATUS. Our annotation is based on a simplified version of the Pentaset (Komen 2013) and follows the methodology in Struik and van Kemenade (2020, 2022). The annotation is based on the referentiality and anaphoricity of each individual object in the discourse, and, crucially, not on the morphosyntactic properties of the object (e.g., as in Coussé 2009). The main reason for this is that the mapping between the morphosyntactic properties of an object and its information status is not one-to-one. For instance, we find definite objects in all categories of our annotation scheme, as definiteness may indicate anaphoricity, but also uniqueness and/or existence without an explicit antecedent. Second, the determiner system (and hence the way definiteness and information structure are marked) is not diachronically stable, yet it has received little attention in the literature on Middle Dutch (but see van de Velde 2010). Studying the diachronic effect of information structure on word order variation using the definiteness system with synchronic assumptions as a proxy would confound our conclusions: the results would then reflect the effect on a changing determiner system on OV/VO variation and scrambling, but not the effect of information structure itself.

We annotate object as GIVEN if they are mentioned in the preceding discourse (*Identity* in the Pentaset), as in (5a). The object *die vorseide kerke* 'the aforementioned church' is mentioned in the preceding discourse, which is also indicated by the adjective *vorseide* 'aforementioned'. Objects are also annotated as GIVEN if their referent can be inferred from previous discourse (*elaborating inferables* in Birner 2006; *Inferred* in the Pentaset). This is illustrated in (5b), where *zyn ambocht* 'his trade' can be inferred from *gildebrueder* 'guild brother' mentioned earlier in the text, since members of a guild all practice the same trade. Finally, objects are annotated as GIVEN if they can be assumed to be familiar to the audience (*Assumed* in the Pentaset), i.e., if they represent encyclopedic or world knowledge, such as *de brandende hel* 'the burning hell' in (5c).[5]

(5) a. IDENTITY

dat	sie	**die**	**vorseide**		**kerke**	dear
that	they	that	aforementioned		church	there
scadeloes		ende	vri	souden	houden	
without.damage		and	free	would	keep	

'that they would indemnify the aforementioned church'

Gysseling_0681_1286

b. INFERRED (ELABORATING)

ende	zyn	ambocht	binner	der	stat	van	Vtrecht
and	his	trade	within	the	city	of	Utrecht
niet	geleert	en	had				
not	learned	NEG	had				

'and had not learned his trade within the city of Utrecht'

CLVN_Utrecht_1470-79

[5] An anonymous reviewer notes that collapsing the categories of Identity, Inferred, and Assumed into one category GIVEN may gloss over semantico-pragmatic phenomena that interact with syntax differently, noting that Inferred and Assumed objects are different from Identity objects in that the former do not have an explicit textual referent. Schwarz (2009) demonstrates that these types of objects have different morphological reflexes in Present-day German in the form of a weak and strong article to distinguish anaphoric definites from definites denoting uniqueness + existence. Our findings do not suggest that there is a syntactic difference between Identity objects on the one hand, and Inferred and Assumed on the other, nor that they are marked differently. Identity, Inferred, and Assumed objects occur in preverbal and scrambled position at comparable frequencies, especially compared to new objects - we thus feel it is justified to collate the three categories into one category Given (see also Taylor & Pintzuk 2014; Struik & van Kemenade 2020, 2022 who arrive at the same conclusion for Old English).

c. ASSUMED
als of ik **de** **brandende** **hel** met een stukje
as if I the burning hell with a piece
houtskool op graauw papier wilde schetsen
charcoal on gray paper wanted sketch
'As if I wanted to sketch the burning hell with a piece of charcoal on gray paper'

CHN_ Paape_1789

Objects that are newly introduced in the discourse are annotated as NEW. For example, the object *Anthuenis Inffroot* in (6a) is not mentioned before and is new to the discourse. When the object is linked to an antecedent, but the relationship does not inherently follow, the object is also annotated as NEW (*bridging inferables* in Birner 2006). *Basilica* 'basilica' in (6b), for example, is linked to the preceding discourse by the adjective *naastgelegen* 'adjacent,' which refers to a temple that has been mentioned before. However, the existence of a temple does not imply the existence of a basilica, and therefore, the object's referent is new to the discourse.

(6) a. NEW
dat Ferry Betram, bailliu van der Proosschen,
that Ferry Bertram governor of the Proosschen
of zijn dienaers als ghisteren ghevanghen
or his servants as yesterday captured
hadden **Anthuenis** **Inffroot**, poortere der
had Anthuenis Inffroot, citizen the.GEN
voorseyde stede
aforementioned city
'that Ferry Bertram, governor of the Proossche, or his servants captured Anthuenis Inffroot, citizen of the aforementioned city yesterday.'

CLVN_Brugge_1510-1520

b. INFERRED (BRIDGING)

Nadat	men	**de naastgelegen**		**basilica**	gezien
After	they	the	adjacent	basilica	seen
had	die	echter	den	indruk	van
had	which	however	the	impression	of
Poseidoons	tempel	niet	kan	evenaren	
Poseidon.GEN	temple	not	could	match	

'After they had seen the adjacent bascilica, which, however, could not match the impression of Poseidon's temple…'

CHN_Vosmaer_1880

In some cases, objects are non-referential, because they are abstract, quantified or negated, part of a fixed expression or for some other reason do not refer to a real-world referent. These objects are annotated as INERT and were discarded prior to statistical analysis. The category of INERT objects is diverse and contains objects which may have different syntactic statuses. The object in (7) is INERT, because it is part of the fixed expression *twist maken* 'argue' (lit: 'battle make') and which may be a case of pseudo-incorporation (Booij 2008). The INERT object in (8) is non-referential because it denotes a quantity and does not establish a specific discourse referent. Its syntactic status is different from the object from (7) in that it cannot (pseudo-)incorporate with the verb, but it is unclear whether the syntactic status of quantified objects is the same as that of referential objects. In Old English, quantified and negated objects behave differently from referential objects (Taylor & Pintzuk 2006), although they do operate within the same syntactic model independently of information status (van der Wurff 1997; Ingham 2007; Struik and van Kemenade 2022).

(7) INERT

jof	die	**tuist** hadde	gemaect.
if	they	battle had	made

'if they argued'

Gysseling_0009AA_1253

(8) INERT

dat	elc	ambocht	mach	sniden	buter	halle
that	each	craftsman	may	cut	outside.the	hall
al	**dat**	**hie**	**wille**	**sniden**	tusschen	
all	that	te	wants	cut	between	
.i.	d	ende	xxxv1/2 d!			
1	denarius	and	35.5	denarius		

'that each craftsman may cut outside the hall everything that wants to cut between 1 and 35.5 denarius'

Gysseling_0438_1282

Because of the heterogeneity of the INERT category, and its independence of information structure, we leave a more detailed investigation of these objects for future research.

SCRAMBLING is annotated by documenting the position of the object relative to an adverbial in the middle field. We take adverbials as a diagnostic for scrambling in the broad sense of the word: we not only include adverbs, but any adjunct (such DP adverbs and PPs). Adverbs and other (structurally more complex) adjuncts occupy the same position in the clause; they are both adjuncts to VP or some higher maximal projection. Including any adjunct as a diagnostic scrambling should therefore not make a difference on syntactic grounds. Objects which are not adjacent to the non-finite verb, but have an intervening adverbial are annotated as SCRAMBLED; objects that are preceded by an adverbial, but followed by another are also annotated as SCRAMBLED. Objects adjacent to the verb and preceded by an adverbial are annotated as UNSCRAMBLED. In case no adverbial is present in the middle field, the sentence is recorded as AMBIGUOUS, since in those cases the surface order does not provide evidence for or against scrambling.

4 RESULTS

This section discusses the results of our corpus study. Section 4.1 discusses the relation between information structure and OV/VO variation in historical Dutch; Section 4.2 discusses the relation between information structure and scrambling in historical Dutch. We discuss our findings and their implications in Section 4.3.

4.1 Information structure and OV/VO variation

We collected 2245 analyzable subclauses with a finite verb, non-finite verb, and an object. 1419 of these sentences contain a referential object. The

distribution of GIVEN and NEW objects across OV and VO word orders per century is given in Table 2.

The data in Table 2 show a gradual reduction in the overall frequency of VO objects; in the 13th century 30.3% of the objects occur in VO order, which gradually reduces to 0.7% in the 18th century and is lost altogether in the 19th century. However, the diachronic pattern is different for given and new objects. There is a consistent strong preference for given objects to occur in OV word order throughout the centuries. While given objects occur in VO order with some frequency in the 13th and 14th century, VO with given objects has become a minority pattern by the 15th century already. New objects occur in postverbal position at higher frequencies and for a longer period of time: although gradually declining, VO with new objects is productive until the 16th century, but its occurrence is reduced dramatically after that. Let us also note that in any given century, the postverbal position is more commonly occupied by new objects than by given objects, even though the overall number of new objects is much lower. These findings demonstrate that given objects are strongly associated with OV word order throughout the history of Dutch. New objects also surface in OV word order, but could also surface freely in VO order pre-16th century.

To test the statistical validity of these observations we fitted a binary logistic regression within a generalized mixed model using the *glmer* function from the *lme4* package (Bates et al. 2015) in R (v4.0.3). We take WORD ORDER (OV or VO) as the dependent variable, with VO as the reference category. The fixed factors included in the model are INFORMATION STATUS (given or new), WEIGHT (of the object, measured as the logarithm of the number of letters), and the interaction between INFORMATION STATUS and CENTURY. The addition of the interaction term controls for the diachronic reduction of the VO order and for the reduction of the influence of the object's information status. Before entering the variables into the model, we applied a non-linear transformation to the variable CENTURY by subtracting 13 from each data point, thereby anchoring the value 0 to the first century in our dataset. Furthermore, we centered the variable WEIGHT around the mean. INFORMATION STATUS was treatment coded (contrasts of 0, 1). We added varying intercepts for TEXTID (the specific text an item was extracted from) to the random structure of the model. This lets the model evaluate the effect of the fixed factors while taking into consideration the variation between individual texts.

		13th C.		14th C.		15th C.		16th C.		17th C.		18th C.		19th C.	
		OV	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**
NEW		38	71	16	27	25	24	32	23	41	6	51	1	49	0
	Total	109		43		49		55		47		52		49	
	%VO	65.1%		62.8%		49.0%		41.8%		12.8%		1.9%		0%	
		OV	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**
GIVEN		250	54	111	13	147	11	166	12	114	1	83	0	53	0
	Total	304		124		158		178		115		83		53	
	%VO	17.8%		10.5%		7.0%		6.7%		0.9%		0%		0%	
		OV	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**	**OV**	**VO**
TOTAL		288	125	127	40	172	35	198	35	155	7	134	1	10	0
	Total	413		167		207		233		162		135		102	
	%VO	30.3%		24.0%		16.9%		15.0%		4.3%		0.7%		0%	

Table 2. Distribution of given and new objects across OV and VO word orders

We find significant main effects of WEIGHT (β = -1.016; SE = .110; z = -9.251; $p < .001$) and INFORMATION STATUS (β = -2.224; SE = .287; z = -7.764; $p < .001$) on the surface word order. Shorter objects are more likely to be placed in preverbal position than longer objects, and given objects are placed in preverbal position more frequently than new objects. The coefficients of the two levels of INFORMATION STRUCTURE in interaction with the effect of CENTURY represent a significant rise in the use of preverbal objects as time progresses for both new objects (β = .822; SE = .102; z = 8.045; $p < .001$) and given objects (β = .664; SE = .104; z = 6.410; $p < .001$). Table 3 presents the odds ratios and 95% confidence intervals for each of the fixed effects. These values represent the size of an effect and indicate whether the influence of a particular factor increases the odds of objects appearing in preverbal position (values below 1) or in postverbal position (values above 1).

		95% CI FOR ODDS RATIO	
MODEL TERM	ODDS RATIO	LOWER	UPPER
Intercept	0.595	0.417	0.773
Weight	2.761	2.246	3.462
Information Status	9.244	5.374	16.637
Information Status (New) * Century	0.440	0.354	0.530
Information Status (Given) * Century	0.515	0.414	0.624

Table 3. Fixed effects odds ratios and confidence intervals of the fixed effects which explain the distribution of objects relative to the verb in our corpus data

The odds ratio for WEIGHT indicates that with each one unit increase in object length, the chances that this object appears in postverbal position are 2.76 times larger. The odds ratio for the variable INFORMATION STATUS indicates that new objects are 9.24 times more likely to appear in postverbal position than given objects. Notice that the odds ratios for the interactions between INFORMATION STRUCTURE and CENTURY are below 1, which confirms that the chances for given and new objects to appear in preverbal position increase over time. Figure 1 visualizes the effects of INFORMATION STRUCTURE and CENTURY on WORD ORDER.

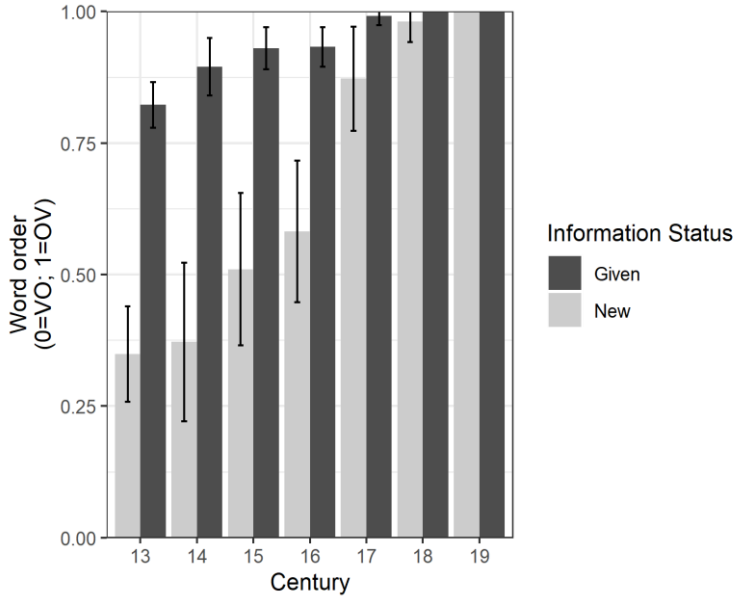


Figure 1. Objects in pre- and postverbal position per INFORMATION STATUS and CENTURY (error bars represent the 95% confidence intervals for the means)

4.2 Information structure and scrambling

610 out of 1176 referential preverbal objects in our dataset contain an adverbial which provides unambiguous evidence for scrambling. The data are presented in Table 4.

		13th C.		14th C.		15th C.		16th C.		17th C.		18th C.		19th C.	
		OA	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**
New		9	4	5	3	8	7	5	11	8	18	7	29	5	22
	Total	13		8		15		16		26		36		27	
	%OA	69.2%		62.5%		53.3.0%		31.3%		30.8%		19.4%		18.5%	
		OA	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**
Given		66	16	39	9	60	7	79	24	53	16	47	18	24	11
	Total	82		48		67		103		69		65		35	
	%OA	80.5%		81.3%		89.6%		76.7%		76.8%		72.3%		68.6%	
		OA	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**	**OA**	**AO**
Total		75	20	44	12	68	14	84	35	61	34	54	47	29	33
	Total	95		56		82		119		95		101		62	
	%OA	78.9%		83.0%		82.9%		70.6%		64.2%		53.5%		46.5%	

Table 4. Distribution of given and new objects across scrambled (OA)

The data in Table 4 show an overall reduction in the frequency of scrambling. In the 13th through 15th century around 80% of the objects scramble, but this number gradually decreases. However, the effect is stronger for new objects than for given objects. Given objects scramble at a consistent high rate throughout the history of Dutch. Scrambling with new objects is also frequent in the earlier centuries, but the overall number of new items in preverbal position is low, as new objects frequently appear in VO order (cf. the previous section). New objects show a distinct preference for the unscrambled position from the 16th century onwards (i.e., after the postverbal position was lost). That is, as the overall number of new objects in preverbal position increases over time, the proportion of new objects in scrambled position reduces.

To test the statistical validity of these observations we fitted a binary logistic regression within a generalized mixed model using the *glmer* function from the *lme4* package (Bates et al. 2015) in R (v4.0.3), similar to the model presented in the previous subsection. Here, we take WORD ORDER (scrambled or unscrambled) as the dependent variable, with the unscrambled order as the reference category. The fixed factors included are INFORMATION STATUS (given or new) and the interaction between INFORMATION STATUS and CENTURY. Adding the (log-transformed) variable WEIGHT to the model did not result in a significant main effect on the outcome variable, or in a significant improvement of the overall model ($\chi^2(1) = .720$, $p = .396$). We consequently excluded this variable for reasons of parsimony. INFORMATION STATUS was treatment-coded, and the same non-linear transformation was applied to CENTURY as in Section 4.1. We added varying intercepts for TEXTID to the random structure of the model.

We did not find a significant main effect of INFORMATION STATUS ($\beta = -.896$; SE = .478; z = -1.875; $p = .061$), which indicates that there is no evidence for a difference between given and new objects in terms of their overall placement relative to the adverbial. The interaction effect between INFORMATION STATUS(GIVEN) and CENTURY did not reach significance ($\beta = -.115$; SE = .067; z = -1.708; $p = .088$). Thus, the surface position of given objects in the Dutch middle field did not change significantly over time. We did find a significant interaction effect between INFORMATION STATUS(NEW) and CENTURY ($\beta = -.419$; SE = .109; z = -3.841; $p < .001$), indicating that the scrambling behavior of new objects changes over time. The odds ratios can be found in Table 5. The odds ratio of the interaction between INFORMATION STATUS(NEW) and CENTURY is below 1 (0.658), which indicates that new objects become more likely to surface in unscrambled position as the centuries pass. The effect of INFORMATION STATUS and CENTURY on WORD ORDER is visualized in Figure 2.

Model Term	Odds Ratio	95% CI for Odds Ratio	
		Lower	Upper
Intercept	3.472	2.167	5.77
Information Status	0.408	0.159	1.06
Information Status (New) * Century	0.658	0.526	0.81
Information Status (Given) * Century	0.891	0.782	1.02

Table 5. Odds ratios and confidence intervals of the fixed effects which explain the distribution of objects relative to the adverbial in our corpus data

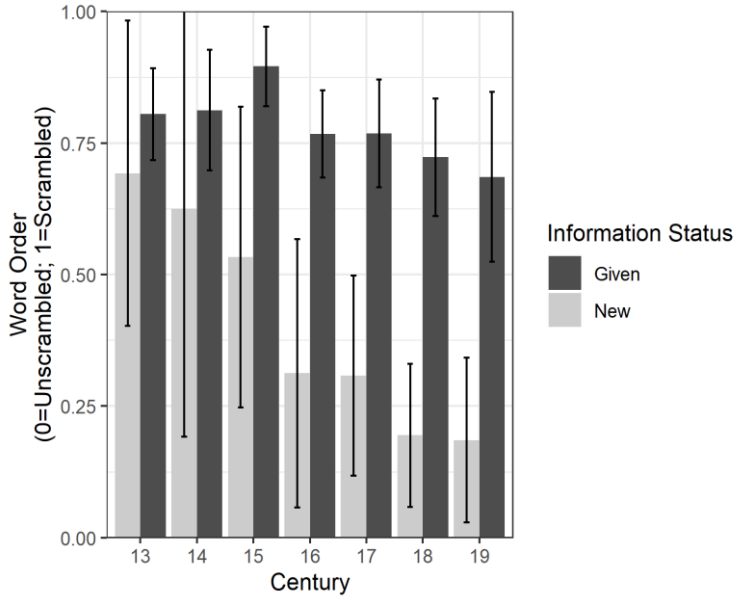


Figure 2. Objects in unscrambled and scrambled position per Information Status and Century (error bars represent the 95% confidence intervals for the means)

4.3 Discussion

The results presented in Sections 4.1 and 4.2 demonstrate that object placement in Dutch has relied heavily on information structure throughout the history of the language. However, the locus of variation seems to change over time. The position of new objects plays a key role in this observation.

When VO was a productive word order in the language, the alternation with OV was (at least partially) governed by information structure. Given objects show a strong preference for the preverbal position throughout the entire period. New objects, in contrast, show a preference for the postverbal position – until this position is lost after the 16th century, after a period of gradual reduction. At this point, the verb can no longer function as the boundary between information structural domains, since new objects must now appear preverbally as well. The option to place preverbal objects before or after the adverbial (scrambling) already existed in the early stages of Dutch. Our corpus data indicate that the scrambled position was the preferred object position in pre-15th century Dutch, regardless of information status (although the overall number of preverbal new objects was relatively small in this period). As the frequency of VO reduces, new objects increasingly surface in unscrambled position. This shift is visualized in Figure 3, which demonstrates the development of objects in terms of OV/VO variation and scrambling, based on the frequencies and percentages from Table 2 and Table 4 for new and given objects respectively. Given objects show a consistent preference for the preverbal, scrambled position. However, as new objects start to occur in preverbal position *more* frequently (OV), they start to occur in scrambled position *less* frequently (scrambling). This suggests that there is a relation between the loss of VO and the emergence of scrambling as an information structurally meaningful operation.

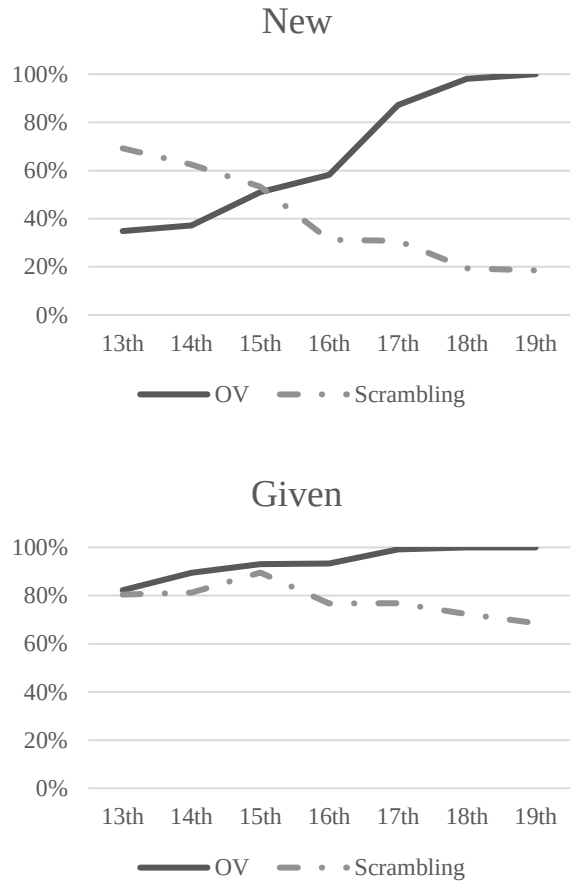


Figure 3. Development of new and given objects in terms of scrambling and OV/VO variation

In the next section, we propose a syntactic analysis of the variation in object placement in the history of Dutch, which allows for a natural transition from one locus of variation (the verb) to another (the adverb). We show that this can be achieved in an antisymmetric model in which information structure is not directly encoded but follows from interface conditions.

5 An analysis of (historical) Dutch object placement

The previous section has shown that OV/VO variation in historical Dutch and scrambling in Present-day Dutch have a similar function and seem to be diachronically related; both variations mark the information status of direct objects. Given objects are consistently preverbal throughout the history of Dutch and scramble at a high rate. The surface position of new objects, on the other hand, gradually shifts from a (largely) postverbal position to a preverbal position to the right of an adverbial (i.e., unscrambled position). A syntactic analysis of object placement should therefore not only comprise a synchronic analysis of OV/VO variation and scrambling; it should also bring out the diachronic relatedness between the two phenomena. We propose that an antisymmetric account with object movement from a postverbal base position, building on Broekhuis (2008), and with multiple Spell Out options, accounts for the facts presented in the previous section.

5.1 An antisymmetric account of object placement

We present an account of scrambling in Present-day Dutch that involves movement of the object (following Vanden Wyngaerd 1989, Schaeffer 2000, Broekhuis 2008) and we generally follow the analysis presented in Broekhuis (2008). Broekhuis adopts Kayne's (1994) theory of antisymmetry, which claims that linguistic structure universally follows the same specifier-head-complement order. Under this view, the underlying structure of Dutch is VO. OV surface order in complex main clauses and subclauses results from leftward object movement motivated by structural factors.

An antisymmetric analysis of Dutch clause structure straightforwardly derives both the synchronic and diachronic variation discussed in the previous section. While earlier approaches are able to account for synchronic OV/VO variation and scrambling independently, they do not provide a conceptually coherent account of the diachronic functional overlap between the loss of VO and scrambling. In the traditional analysis of historical Dutch as an OV language with rightward extraposition to derive VO (Burridge 1993; Weerman 1987, 1989), scrambling must be the result of leftward movement, and hence an operation independent of OV/VO variation. Similarly, in approaches in which there is competition between base-generated OV and base-generated VO, as in Pintzuk (1999) or Haider (2013), scrambling is only possible in base-generated OV clauses. These approaches cannot account for the distribution presented in Section 4. Finally, the base-generation approach to Present-day Dutch scrambling in Neeleman & van de Koot (2008), in which the information status of the object is determined by a post-syntactic mapping rule, cannot account for the gradual shift from OV/VO to middle field scrambling as a means to express information structure, without additional

stipulations about the way in which information encoding can change over time.

Crucial to Broekhuis's (2008) antisymmetric analysis is that scrambling is not a single movement, but a process that involves two movement steps (see Schaeffer 2000 for a similar analysis). Consider the clause structure in (9), adapted from Broekhuis (2008: 61).

(9) $[_{vP}\ OBJ_3\ v\ [_{VP}\ OBJ_2\ [_{VP}\ V\ OBJ_1\ ]]]$

The base position of objects is postverbal (OBJ_1), but they must move into a specifier position in the extended projection of the verb to check the phi-features on V (cf. Grimshaw 1997; AgrP in Pollock 1989); that is, objects must move from OBJ_1 to OBJ_2. Objects can move further into the extended projection of *v* (i.e., from OBJ_2 to OBJ_3).

Broekhuis (2008) argues that this last movement step is related to case. He supports this assumption with the observation that complement PP objects, unlike DP objects, cannot scramble over PP adverbials (cf. Vikner 1994, 2006). This is illustrated in (10). Since DPs, but not PPs, are subject to the Case Filter (Chomsky 1981), case is a likely trigger for scrambling.

(10) a. Jan heeft tijdens de vergadering **naar** **zijn** **baas** geluisterd.
Jan has during the meeting to his boss listened
'Jan listened to his boss during the meeting.'

b. * Jan heeft **naar** **zijn** **baas** tijdens de vergadering geluisterd.
Jan has to his boss during the meeting listened
'Jan has to his boss during the meeting listened'

However, the assumption that case is a formal syntactic feature is questioned in recent (Minimalist) literature and it has been suggested that the (morphological) expression of case is merely a "by-product" of agreement of phi-features (see Bobaljik & Wurmbrand 2008, Sigurðsson 2012, Polinksy & Preminger 2014, Preminger in press, and sources cited there for arguments and discussion). This questions the assumption that case is the trigger for object movement to *v*, and we leave open the possibility that it is a more general agreement feature that attracts the object. The crucial point here is that

the object is licensed by formal syntactic operations in two steps, which, as we will argue below, yield several potential Spell Out positions.

As the object moves to a higher position in the clause, it may cross predicate adverbs adjoined to VP and clause adverbs adjoined to *v*P (*VP*- and *S-adverbs* in Jackendoff 1972).[6] We follow Broekhuis (2008)'s assumption that merger of the adverb and movement of the object is essentially free (as far as the syntax is concerned),[7] because the required modification does not depend on a particular position of the adverb within the extended projection of the modified phrase. The object moves before an adverb is adjoined to VP or *v*P (depending on its type), leading to ADV–OBJ order, or the adverb is adjoined before the object moves, leading to OBJ–ADV order. This optionality is illustrated in (11) for adverbs adjoined to VP and (12) for adverbs adjoined to *v*P, which are both simplified versions of the structures in Broekhuis (2011: 21).

(11) a. $[_{VP}$ O $[_{VP}$ adverb $[_{VP}$ V $t_O]]]$
Merge VP adverb > Move object
b. $[_{VP}$ adverb $[_{VP}$ O $[_{VP}$ V $t_O]]]$
Move object > Merge VP adverb

(12) a. $[_{IP}$ S … $[_{vP}$ O $[_{vP}$ adverb $[_{vP}$ t_S *v* $[_{VP}$ t_O $[_{VP}$ V $t_O]]]]]]$
Merge *v*P adverb > Move object
b. $[_{IP}$ S … $[_{vP}$ adverb $[_{vP}$ O $[_{vP}$ t_S *v* $[_{VP}$ t_O $[_{VP}$ V $t_O]]]]]]$
Move object > Merge *v*P adverb

A crucial difference between the movement steps from OBJ_1 to OBJ_2 and from OBJ_2 to OBJ_3 in Broekhuis (2008) is that the latter syntactically optional, regulated by information structure.[8] The rationale behind this assumption is

[6] Experimental support for a distinction between the two movement steps in scrambling, using adverb type as a proxy, can be found in Schoenmakers and de Swart (2019). In the absence of linguistic context, there was a distinct preference to produce definite objects to the left of predicate adverbs (71%) which was absent in sentences with a clause adverb (45%).

[7] This idea is reminiscent of Neeleman and van de Koot (2008), who argue that the order in which adverbs and objects are merged is syntactically free. Their analysis differs from Broekhuis's (2008) in that the optionality in the order of merger in the latter does not concern lexical material, but functional material in the extended projection of the verb. That is, the difference is whether scrambling results from internal or external merge (Chomsky 2001a).

[8] Broekhuis (2008) advances the so-called *Derivations & Evaluations* framework, which seeks to combine certain aspects from the Minimalist program and from

the claim that (prosodically unmarked) new information foci must appear in the rightmost position of the clause (cf. Cinque 1993, see also Neeleman & Reinhart 1998). Broekhuis proposes that, in Dutch, this interface constraint is ranked higher than the economy constraint EPP(case), i.e., the requirement to check case on *v locally*. New objects consequently do not have to move to check case features on *v*; these features are instead checked at a distance under an *Agree* relation (Chomsky 2000). Thus, object movement from OBJ_2 to OBJ_3 is blocked for new objects, and only given objects are predicted to appear in OBJ_3.

Our analysis is in many ways compatible with the general proposal in Broekhuis (2008), but we do not rely on OT constraints and hence two different ways of checking case to derive the surface variation. We take movement as an operation that copies and pastes elements in the syntactic structure, following the copy theory of movement (see Chomsky 1995, Nunes 2004). The copy theory of movement claims that copies of displaced elements are not removed from the derivation, but remain available, thereby allowing for flexibility in their Spell Out positions. For Dutch clauses, this means the object is generated in OBJ_1 and obligatorily moves via OBJ_2 to OBJ_3, leaving behind copies in each intermediate position.

The position in which the object is spelled out is governed by an interplay of interface conditions (similar to Broekhuis' LF and PF constraints). Assuming that these conditions are independent of obligatory syntactic operations allows us to also integrate the various (discourse-)semantic and prosodic factors that have been argued to play a role in scrambling and OV/VO variation. These factors together determine which of the object positions made available by the syntax are felicitous in a particular context, which may in fact be more than one. Information structure exploits the available positions to express discourse relations, and is hence not a cue for differential movement, but for differential pronunciation (see also Haider 2020).

Our analysis is also in line with Struckmeier's (2017: 21) "subtractive grammatical architecture". Struckmeier argues that the semantic interface determines which structures are semantically interpretable and subtracts any

optimality theory (see also Broekhuis & Dekkers 2000, Broekhuis & Woolford 2010). In this framework, the 'generator' creates a candidate set of syntactic derivations, the size of which is restricted by operations of the computational system. Each candidate from this set is evaluated against a number of universal violable economy and interface constraints, which are ranked in a language-specific order (hence allowing for language-specific properties). An input form is then mapped onto the most appropriate, or "optimal" output form. It is important to note that the syntax does not have to have access to the post-syntactic interfaces in this analysis, i.e., movement is not *triggered* by information structure (cf. Haider 2020).

structure that does not adhere to the semantic requirements of a language. He shows for German that scrambling has clear semantic effects in some cases, but not in others. The same facts hold for Dutch: scrambling feeds binding (Vanden Wyngaerd 1989, Neeleman 1994), see (13), and "triggers all possible strong readings" (de Hoop 1996: 51) in terms of referentiality, partitivity, and genericity. For instance, scrambling of indefinites yields interpretive effects related to specificity of the object (see Unsworth 2005: 63–66), see (14). These effects are absent if the object is a definite DP (see van der Does & de Hoop 1998).[9]

(13) a. * Piet heeft met elkaars hamer die
Piet has with each.other's hammer those
mensen vermoord.
people murdered

b. Piet heeft die mensen met elkaars
Piet has those people with each.other's
hamer vermoord.
hammer murdered
'Piet murdered those people with each other's hammer.'

(14) a. Cécile heeft waarschijnlijk een roos geplant.
Cécile has probably a rose planted
'Cécile probably planted a(ny) rose.'

b. Cécile heeft een roos waarschijnlijk geplant.
Cécile has a rose probably planted
'Cécile probably planted a (certain) rose.'

Struckmeier (2017) argues that such semantic effects are expected to occur after movement, on the assumption that movement must have an effect on the output (Chomsky 2001a). The word order changes yield new binding options or interpretations, thereby directly fulfilling the effect-on-the-output condition. Given that German and Dutch are scope-rigid (or "scope-transparent") languages, in which scope relations are computed according to

[9] An anonymous reviewer wonders whether these effects are already present in historical Dutch. The number of examples in our dataset which adhere to the conditions in (13) and (14) is too low to draw definitive conclusions. Note, however, that there is nothing in our analysis which prevents the semantics interface from restricting Spell Out in the middle field in historical Dutch. We leave a more detailed investigation of the semantic restrictions on scrambling in historical Dutch for future work.

surface order, objects are interpreted in the position in which they are spelled out. The semantic interface rules out any order which results in a position-meaning mismatch.

Similarly, the phonetics interface determines which structures are phonologically well-formed. This rules out low Spell Out of pronouns when they are prosodically unmarked (cf. (3), repeated here as (15), cf. Bouma & de Hoop 2008).

(15) a. # We moesten eerst **hem** voeren.
we had.to first him feed
b. We moesten **hem** eerst voeren.
We had.to him first feed
'We had to feed him first'

The syntax thus makes various Spell Out positions for the object available, which are subjected to conditions at the semantics and phonetics interfaces. Speakers may have preferences for particular Spell Out options (out of the remaining felicitous candidates), based on, we argue, pragmatic principles such as given-before-new or short-before-long (Wasow 1997). Our conception of the pragmatic interface is that the principles at play are violable; pragmatic constraints are "soft" (cf. Keller 2000). That is, they are not as strict as those imposed by syntax, semantics, or phonology. Thus, scrambling is influenced, but not determined, by information structural preferences (cf. Schoenmakers et al. 2021).

Adopting the copy theory of movement permits a uniform analysis of OV/VO variation in historical Dutch and scrambling in Present-day Dutch, and allows for a natural transition from a clause structure with the verb as the boundary between information structural domains, to a clause structure in which the adverb serves this function in the middle field. When we relate the object positions outlined in this section to the results presented in Section 4, we arrive at the schematic representation of Spell Out positions and information structural domains in (16).[10]

[10] Note that the relation between the position of the object and its information status is not one-to-one, and that there is additional variation in surface order as the result of variation in the order of internal merge of the object and the external merge of the adverb (cf. the discussion on (11) and (12)).

(16) $[_{vP}$ OBJ_3 v $[_{VP}$ OBJ_2 $[_{VP}$ V OBJ_1]]]

Historical Dutch	|--Given--|	|--New--|
Present-day Dutch	|--Given--| |--New--|	

We showed that objects in postverbal position were typically new to the discourse (or heavy) in historical Dutch, but that there are no clear indications of an information structural constraint on scrambling. Rather, the scrambled position (OBJ_3) is preferred for all objects in the middle field, regardless of their information status (although the number of preverbal new objects is low). The most important Spell Out positions in historical Dutch are therefore OBJ_3 and OBJ_1. While OBJ_2 is also available as a syntactic and hence Spell Out position, it does not seem to serve an independent information structural function. The verb thus marks the boundary between the domains in which given and new information is expressed in historical Dutch. The postverbal object position (OBJ_1) became more and more restricted as a Spell Out position, until it was lost as a regular position for objects in the 16th century. As a result, the verb no longer separates the domains in which given and new information is expressed. This is when the middle field starts to show a division between information structural domains, with OBJ_3 for given objects and OBJ_2 for new objects, and the boundary between these domains shifts to the adverbial.

5.2 Shifting the border between information structural domains

One question that we have not addressed thus far is why VO was lost, and how the middle field became the locus of information structure encoding. The data presented in Section 4 indicate that the loss of VO and the establishment of an information structurally functional middle field proceed in tandem. While the number of VO structures with new objects declines, scrambling becomes sensitive to information structure. This leads to the question whether VO order was reduced, and the middle field became the locus of variation as a consequence, or whether word order in the middle field became information structurally motivated first and VO was lost as a result. If our analysis is on the right track, the loss of VO likely prompted the establishment of the middle field as the locus of information structure encoding. It is not clear from the literature what triggered the loss of VO, but it seems unlikely that this is the result of a single factor. It is more likely that VO was lost as the result of a series of internal and external changes. As a full-fledged multifactorial

analysis is beyond the scope of this paper, we here present a broad-brush sketch of the factors that may have played a role in the loss of VO and how this may have resulted in an information structurally motivated middle field.

One way of formalizing this idea is by using the "parametric hierarchies approach" outlined in Roberts (2019), which divides linguistic variation into various levels. The highest level of linguistic variable is the Macroparameter. Macroparameters are 1) typologically pervasive; for example, all languages have to determine in which order the verb and object may appear, 2) salient in the Primary Linguistic Data (PLD), i.e., linearization of the order and verb takes place in many of the utterances an acquirer is exposed to, and 3) diachronically stable. The lower-level Meso- or Microparameters, on the other hand, are 1) typologically parochial, i.e. they may be language specific, 2) not pervasive in the PLD, and 3) diachronically unstable.[11] Changes at the macroparametric level are possible, but this usually the effect of (profound) changes in (a combination of) lower-level Microparameters to the point that a language acquirer no longer receives enough input to acquire the old variant (see Westergaard 2010 for a similar idea).

Historical Dutch underwent several lower-level syntactic changes which may have played a role in the loss of VO. First of all, loss of inflection in general, and more specifically the loss of overt morphological case marking on nouns (with the exception of pronouns and genitive -s), reduces the possibility to infer the relation between constituents from morphology, which may have prompted a more rigid word order (cf. Weerman 1987, 1989). That this cannot be the single reason for the loss of VO becomes evident when Dutch is compared to German. German also lost VO word order, but retains its case system. A second factor that may have played a role in the loss of OV/VO variation in Dutch is the grammaticalization of the definite determiner. Proto-Germanic did not have a determiner (Lehmann 1994). As in Old English and Old High German, the emergence of the determiner as a grammatical category was an Old Dutch innovation, but this was not yet fully consolidated by Middle Dutch (Van de Velde 2010). Changes in the determiner system of a language also imply changes in the reference system (cf. Piotrowska & Skrzypek 2021 for the diachronic relation between definiteness marking and referentiality in North Germanic). This, in turn, may

[11] Roberts (2019) argues that word order in Dutch and German is in fact a Mesoparameter, i.e. a parameter between Macro- and Microparameters, because these languages are not fully head-initial or head-final, but allow variation between phrases of different types. In the analysis that we put forward here, Dutch is uniformly head-initial, making VO order a Macroparameter. Regardless of one's classification of the word order parameter, however, the crucial point for this discussion is that the linearization of the object and the verb is a higher order parameter than a Microparameter.

have consequences for other means of expressing information structure, such as word order.

The analysis that we propose, in which the object is licensed in two movement steps resulting in three Spell Out positions, may also be a factor in the loss of VO. We argue that object movement to the highest object position in Spec,*v*P is obligatory and that this is also the default position where given objects are spelled out. New objects, on the other hand, are by default (but not necessarily) spelled out in the lowest object position, i.e., VO position. Because object movement proceeds in two steps, the intermediate object position in Spec,VP does not have a clear pragmatic or semantic function (see (16)). The loss of VO may be motivated, in combination with other microparametric changes such as those outlined above, by internal pressure to reduce redundancy and a need for a more parsimonious syntactic system. The reason why Dutch (and also German) converged on OV word order and not VO may lie in the functionally motivated status of VO: VO is reserved for new or heavy objects, whereas OV is pragmatically neutral. A scenario in which a language converges on VO after a period of mixed OV/VO is equally likely: this is the case in English. However, a crucial difference between Dutch and English is that OV is information structurally marked in Old and early Middle English, while Dutch and English are similar in that both developed a definite article and both lost (most of) their case marking (Struik & van Kemenade 2022).

Another factor that should be taken into consideration is the frequency of VO in everyday language use, especially directed to language acquirers. One may wonder how frequent VO orders are in the input of an acquirer of pre-1700 historical Dutch. Our dataset suggests a very strong genre effect: while VO structures occur in all text genres and contexts, they are most frequent in official documents detailing transactions (see also Blom 2002), as illustrated in (17).

(17) bouden dien dat die voerseide pieter sal
provided that the aforementioned Pieter will
effen **derente** **vanden** **huusen**.
charge the.interest of.the house
'on the condition that the aforementioned Pieter will charge interest on the house'

Gysseling_1552_1296

The grammatical object in such constructions is frequently the object of a transaction, either physically or monetarily. Approximately half of the referential VO objects in our sample are transactions. This is a very specific use, which presumably did not occur frequently in child-directed speech, nor

would it have been part of everyday conversation. Note, however, that while these transactions might inflate the number of VO in historical Dutch, we find new objects in non-transaction readings as well, as in (18).

(18) Dat wi hebben ghemakt **ene vorworde vor die wet**
that we have made a introduction for that law
'That we made an introduction to that law'
Gysseling_0124_1272

The occurrence of VO structures cannot be attributed to a genre effect alone, but the relatively low input frequency of non-formulaic VO structures, the microparametric changes that were taking place around the same time, the obligatory feature-checking in preverbal position, combined with the internal pressure of the language to reduce the redundant optionality in Spell Out positions, may have caused acquirers to disprefer the postverbal object position (cf. Westergaard 2010). As a result, the grammar of the language changed: the postverbal Spell Out position is lost over time. The loss of this position entails that the verb can no longer mark the boundary between the given and new domains; however, the middle field is already equipped with elements which might take up the task: adverbials.

An adverbial, however, is not the ideal boundary between the given and new domain, because it is an optional element. Adverbials will not always be present to demarcate the given and new domain. Moreover, there is a distinction between (at least) predicate and clause adverbials (Jackendoff 1972, see also Cinque 1999), which may lead to variation in (or confusion about) the position of the information structure boundary. The verb, by contrast, is a clear boundary: it is obligatory and occupies a fixed position in the clause (in non-V2 contexts). The boundary shift does not appear to be an efficient one from an information structural point of view. This suggests that the syntactic triggers responsible for movement are stronger than the need for clearly demarcated information structural domains. This is in line with the idea that information structure piggy-backs on the structure that is made available by the syntax (see also Haider 2020). Syntax forces objects to move from the postverbal domain, and pragmatics will have to make do with the positions that remain available for Spell Out.

6 Conclusion

This aim of this paper was to bring together two types of word order variation in two stages of Dutch for which no relation had been previously assumed: OV/VO variation in historical Dutch and scrambling in Present-Day Dutch. We tested the hypothesis that both types of word order variation are functionally similar, i.e., they differentiate the information structural domains of given and new information. This was confirmed by our corpus data, which showed that the distribution is similar for OV/VO variation and scrambling: given objects tend to appear in earlier positions than new objects. In fact, the placement of given objects is rather consistent throughout the history of Dutch. They occur in preverbal and scrambled position at high frequencies between the 13th and 19th century. The position of new objects shifts from the postverbal to preverbal, unscrambled position, which suggests that the two types of variation are diachronically related.

We analyzed the diachrony of object placement as movement from a uniformly head-initial base via the specifier of VP to the specifier of *v*P. Historical Dutch allows Spell Out of the object in its postverbal base position, but this position was lost after the 16th century, which we argued is due to a composite of factors which together resulted in the loss of VO. Scrambling in the middle field was always a part of Dutch syntax, but in the earlier stages of the language it did not have an independent function in terms of information structure. The loss of VO entails the loss of the expression of discourse relations and, as a consequence, information structure "exploits" syntax to find a new way to distinguish between given and new information. Thus, the boundary between the given and new domains shifts from the verb to the adverbial in the middle field.

CHAPTER 5
OV/VO VARIATION AND INFORMATION STRUCTURE IN OLD SAXON AND MIDDLE LOW GERMAN[1]

ABSTRACT This paper discusses the syntactic status of OV/VO variation in Old Saxon and Middle Low German, a relatively understudied member of the West Germanic language family. A comprehensive corpus study on Old Saxon and novel Middle Low German material shows that OV/VO variation is to a large extent governed by information structure and grammatical weight. The results indicate that given objects are predominantly preverbal, while new objects freely surface in postverbal position. While these observations might at first glance invite an analysis in terms of extraposition from an OV base, this paper argues specifically against this. Instead, it is argued that an antisymmetric analysis in which OV word order is derived from a VO base provides a better framework to account for the effect of information structure and weight on OV/VO variation.

1 INTRODUCTION

Old Saxon and Middle Low German are no exception to the observation that the West Germanic languages allowed more flexibility in the positioning of the object (O) with regard to the verb in their historical stages, in addition to the variability in the order of the finite (Aux) and non-finite (V) verbs in complex verb clauses. This results in five attested word order patterns, illustrated in (1). Objects are printed in bold, finite verbs are underlined and non-finite verbs are printed in italics.

(1) a. Aux-V-O

Dar	na	also	he	<u>hadde</u>	*gedodet*	**den**	**heyden**
There	after	also	he	had	killed	**the**	**heathen**
de	**sinen**	**broder**	**sloch**				
who	his	brother	hit				

'Thereafter he also killed the heathen who hit his brother'
(Engelhus_Weltchronik_OF_1435)[2]

[1] This chapter is based on Struik, Tara. (in press). OV/VO variation and information structure in Old Saxon and Middle Low German. *Journal of Historical Syntax*.

[2] The Middle Low German texts are taken from the Corpus of Historical Low German (CHLG, Booth et al. 2020). The corpus is still in development and does not have sentence-specific text references at the time this article was written. Therefore, I only include a reference to the text as it is included in the corpus.

b. Aux-O-V
dat se hebben **myne vroude** *eruollet* in sick suluen
that they have my happiness filled in them selves
'that they have filled themselves with my happiness'
(Buxtehuder_Evangeliar_NLS_1451-1500)

c. O-Aux-V
dar du **dyn erste wyff** mede hest *castiget*
where you your first wife with has chastised
'with which you also chastised your first wife'
(Griseldis_NLS_1502)

d. O-V-Aux
do de greyken **dusse stad** vorstort hadden
when the Greeks this city overthrown had
'when the Greeks had overthrown this city'
(Engelhus_Weltchronik_OF_1435)

e. V-Aux-O
dat wy den Raadmannen van Oldenborch:
that we the Councilors of Oldenburg
af *ghewnnen* hebbet **Ene wort: de gheleghen is**
obtained have a property that located is
by deme stouwe vppe der nyen stad to Oldenborch
by the quayside up the new city to Oldenburg
'that we, the councillors of Oldenburg, have obtained a property located by the quayside in the new city of Oldenburg'
(Oldenburg_Urkunden_NLS_1350-1500)

The position of Low German within the West Germanic language family is particularly interesting for the purpose of studying West Germanic OV/VO variation. Low German occupies a unique position within the dialect continuum as an intermediate language between English and the other major continental varieties, Dutch, and German. Old Saxon is considered a close relative of Old English and the language is frequently classified as part of the Ingvaeonic, or North-Sea-Germanic, subgroup, which also includes Frisian and English. On the other hand, Present-Day Low German has many features in common with the continental West Germanic languages, such as asymmetric OV/V2 word order (Harbert 2006). The language is therefore crucial to our understanding of the diachronic development of the West Germanic language family, and in particular the relation between continental West Germanic Dutch and German, on the one hand and English on the other hand.

This paper focuses specifically on the influence of information structure on the position of the object, which has been the focus of many studies on object placement in the West Germanic languages (see e.g., De Bastiani 2019, Petrova 2009, 2012a, Petrova & Speyer 2011, Sapp 2014, 2016, Struik & Schoenmakers 2021, Struik & van Kemenade 2020, 2022, Taylor & Pintzuk 2012, Walkden 2014). Traditional grammarians recognized from very early on that discourse-given information tends to precede discourse-new information (at least since Behaghel 1932). This has led to the hypothesis that given objects are OV, while new objects are VO. While this hypothesis has proved to be too simple, an information structure effect has been observed for all languages. I will here replicate the methodology developed in Struik & van Kemenade (2020, 2022), who study the same variation in Old and Middle English, on the HeliPaD, a syntactically parsed version of the Old Saxon *Hêliand* (Walkden 2016) and the recently published Corpus of Historical Low German (Booth et al. 2020) to determine the syntactic status of OV/VO variation in historical Low German, and its relation to information structure.

The paper is structured as follows. Section 2 lays out the key properties of Low German diachronically, against the backdrop of variation within and between the West Germanic languages. The methodology is laid out in Section 3. In section 4 I present and discuss the results from Old Saxon and Low German, which form the basis for the analysis in section 5, which will argue against a rightward movement analysis of Low German OV/VO variation. Instead, I argue that OV is derived by leftward movement. Section 6 concludes the paper.

2 Object placement in historical Low German

Despite the lack of in-depth work on historical Low German syntax, the structure of the language overall displays the features typical of the early West Germanic languages, and of present-day Dutch and German. In main clauses, the finite verb generally occupies the V2 position, while it is located lower in subclauses. In subclauses with a non-finite verb the order of the finite and non-finite verb may vary. The object is usually assumed to be base-generated in preverbal position (cf. Erickson 1997, Linde 2009, Somers & Dubenion-Smith 2014 on Old Saxon and Petrova 2012b on Middle Low German). Both Old Saxon and Middle Low German allow deviations from these patterns, however, as do the other historical West Germanic languages. In addition to varying positions of the objects, as in (1), the finite verb also surfaces in positions other than V2 in main clauses. Catasso et al. (2021) show, for instance, that the finite verb can occur in V3 position, and Somers & Dubenion-Smith (2014) show for Old Saxon that the finite verb can also surface in V1, as does Petrova (2012b) for Middle Low German. These

deviations from the canonical asymmetric V2/OV structure are typically attributed to information structure.

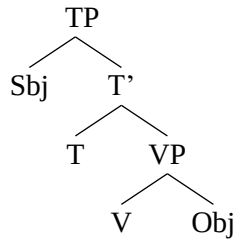
2.1 Object placement in Old Saxon

Early work on Old Saxon word order variation submits that variation is not random, and attributes it to principles of pragmatics and discourse organization (cf. Rauch 1992, Ries 1880), but these accounts do not go beyond a general, broad-brush description. More detailed examinations of the syntax of Old Saxon and information structure have only recently been addressed in Linde (2009) and Walkden (2014). Linde (2009) focusses on the position of the verb and the properties of V2. She shows that backgrounded items occur preverbally, i.e. in clause initial position, while focused expressions follow the verb. Walkden (2014) is the only study that is specifically on the issue at hand here: OV/VO variation.

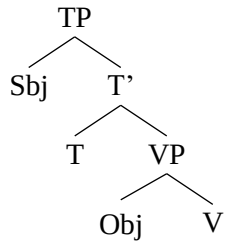
Walkden (2014) approaches the data from the hypothesis that the variation observed in Old Saxon resembles that observed in Old English, as Old Saxon is one of the closest relatives of Old English. He therefore closely follows the methodology used by Taylor & Pintzuk (2012) to study the influence of information structure on OV/VO in Old English. Taylor and Pintzuk (2012) assume the Double Base Hypothesis for Old English (Pintzuk 1999), which postulates that there is variation with regard to the headedness of both the IP (TP in more recent terminology) and the VP. As V-O-Aux order is unattested in West Germanic, they assume that a right-headed TP cannot combine with a left-headed VP (cf. Biberauer, Holmberg & Roberts 2014 on the Final-over-Final constraint). On the assumption that finite verbs surface in T, this essentially results in three different grammars:

(1)

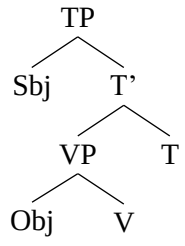
a. Aux-V-O



b. Aux-O-V



c O-V-Aux



In addition to the basic structures in (2), objects can move rightward from OV structures (2b) and (2c), resulting in VO surface order, as well as from VO structure (2a), resulting in V-X-O surface order. Objects may also move

leftward from VO structure (2a), resulting in OV surface order, as well as from OV structure (2b), resulting in O-X-V surface order. This means that in Aux-V grammars (as in 2a-b), the surface order of the object is ambiguous between base-generation and movement. Because V-O-Aux orders are absent in West Germanic, V-Aux-O orders must be derived from an OV base and are hence the only unambiguous structures in the Double Base approach. O-Aux-V is also unambiguously derived. In these cases, the object is moved leftward to a position above T, either from an OV or a VO base. However, Taylor and Pintzuk assume, without discussion, that these orders are the result of factors other than information structure and hence exclude these from their analysis. Taylor and Pintzuk (2012) thus hypothesize that it is only in V-Aux-O clauses that the effect of information structure is visible.

Their results first of all indicate that there is a difference in the frequency of VO between Aux-V and V-Aux clauses; in V-Aux clauses VO is significantly more frequent. There is also a difference in the distribution of given and new objects between Aux-V and V-Aux clauses. Taylor and Pintzuk find no significant effect of information structure on OV/VO variation in Aux-V clauses, but find that new objects appear in VO order significantly more often in V-Aux clauses.

Walkden (2014) makes the same a priori assumptions about the underlying syntax of Old Saxon and reports similar results for the Old Saxon *Hêliand*, although the effects are less clear than in Old English. His dataset contains 214 subclauses with a finite modal or auxiliary, a non-finite verb and a nominal direct or indirect object (excluding pronouns, quantified and negated objects, O-Aux-V orders, and object-before-subject examples). In contrast to Old English, the text does not show a significant difference in the frequency of VO in V-Aux and Aux-V clauses. However, VO is significantly more likely in V-Aux clauses when the object is new, while this effect is absent in Aux-V clauses. Importantly, the differences between Aux-V and V-Aux are not as striking as those reported by Taylor and Pintzuk (2012) and, as Walkden notes, might result from sampling effects as his results are based on one text only. Weight was a significant factor in both Aux-V and V-Aux clauses and shows that longer objects are more likely to surface postverbally, similar to Old English.

Struik and van Kemenade (2020, 2022) re-examine Old and Middle English OV/VO variation and consider the data from a different perspective. They focus on direct objects only, excluding indirect objects, and only consider subclauses with two verbs from non-translated texts. Crucially, they do not a priori distinguish between Aux-V and V-Aux clauses. They include the full range of Aux-V clauses, including O-Aux-V clauses, whereas Taylor and Pintzuk included only a third of the Aux-V clauses to balance the number of V-Aux clauses. In addition, their annotation procedure is different,

especially with regard to short-term referents (in the sense of Karttunen 1976) which only exist within hypothetical or conditional contexts, but do not establish a referent beyond this context, illustrated in (3).

(3) Ðeah þe hwa wille her on life habban **gode**
Yet that whoever will here in life have good
dagas, he ne mæg hi her findan
days he NEG can them here find
'Yet whoever will have good days here in life, he cannot find them here.'

Taylor and Pintzuk (2012) annotate objects such as *gode dagas* 'good days' as new, because they do not establish a referent beyond this clause. Struik and van Kemenade argue that these objects are not new by definition and do not distinguish between hypothetical or real-world domains and hence not between permanent and short-term referents. They annotate the object in (3) as inert, because there is no reference to specific days in this particular context.

Struik and van Kemenade's approach results in a different distribution of given and new objects. They find a clear asymmetry between the position of given and new objects, which is the same in both Aux-V and V-Aux clauses. While given objects appear readily in OV word order, new objects hardly ever do so. In fact, the vast majority (around 98%) of the OV objects are given (see also De Bastiani 2019, who independently arrives at the conclusion that OV is strongly associated with discourse-givenness).

It is unclear how Walkden's data should be interpreted in this light, or whether a re-examination of the Old Saxon data would result in a similar distribution. The overall frequency of VO that Walkden reports for Old Saxon (21.5%) is lower than for Old English in both Taylor and Pintzuk 's dataset (31% with lexical direct and indirect objects) and Struik and van Kemenade's (38.1% with lexical direct objects only), which suggests that OV is the more neutral word order in Old Saxon. This raises the question whether Old Saxon is as similar to Old English as Walkden claims it is. In fact, it may be that OV/VO variation in Old Saxon is more like OV/VO variation in historical Dutch and historical High German. Research on these languages indicates that VO word order is marked (as opposed to OV in English). In historical High German, for instance, objects associated with new information focus appear to prefer VO order (Hinterhölzl 2015, Petrova 2009, Sapp 2016, Schlachter 2012 on Old High German; Sapp 2014 on Middle High German; Bies 1996 on Early New High German), although they also appear in OV order. Similarly, Coussé (2009) and Blom (2002) attribute the occurrence of VO structures in Middle Dutch to focus. In addition, Struik and Schoenmakers

(2021) show that Middle Dutch given objects hardly ever appear in VO word order, whereas new objects do so rather freely.

2.2 Object placement in Middle Low German

Middle Low German is crucial to an understanding of the variation in historical Low German, as its textual attestation is quite rich. However, it remains relatively understudied from a formal syntactic perspective, especially with regard to word order variation (but see Mähl 2014 and Petrova 2012b for some notable exceptions). To my knowledge there has not yet been a detailed study of OV/VO variation and the factors driving it.

Petrova (2012b) briefly touches upon the issue of basic word order in Middle Low German. She classifies Middle Low German as a canonical OV language based on the diagnostic properties developed in Haider (2000, 2005, 2013) and Vikner (2001): empty objects under coordination are possible, the order of accusative and dative objects is variable, resultative predicates and particles are left-adjacent to the verb, the order of the verbal complex is variable and non-verbal constituents may intervene between the verbs of the complex. Petrova (2012b: 164) notes, however, that the object does not have to be in preverbal position. In addition, she argues that an example such as (4), a passive with a postverbal subject, is evidence for extraposition of a lexical argument from an OV base. According to Haider (2013), the word order of verbal complexes is variable in OV languages, but the order of the verbal complex is fixed, i.e. Aux-V, in VO languages. From this perspective, the fact that (4) displays V-Aux order entails that the basic order of the clause is OV. Hence, the postverbal position of the subject in (4) must be the result of extraposition.

(4) Dat do *vorloren* was **that hilge land** to iherusalem
That then lost was the Holy Land in Jerusalem
'that then the Holy Land in Jerusalem was lost'
(LChr I 37, 11, Petrova 2012: 164)

Petrova further argues that there is no direct evidence that the Double Base Hypothesis can be applied to the variation in Middle Low German. One of the main diagnostics for Pintzuk (1999) to assume competition between basic OV and basic VO in Old English is the position of "light elements", such as pronouns and particles. It is generally assumed that these elements do not undergo rightward movement, so a postverbal light element indicates a VO grammar. Petrova (2012b) does not find any example in which a light element follows the main verb and hence concludes that there are no base-generated

VO structures in Middle Low German, and that VO orders are the result of extraposition from an OV base. Petrova does not consider the influence of information structure on OV/VO, although she demonstrates that there is an effect of information structure on the order of XPs in multiple XP-fronting constructions in main clauses.

The next section reports on a corpus study on historical Low German which traces the diachronic development of OV/VO variation. It will re-evaluate the data on Old Saxon, and, crucially, it will include new data on Middle Low German. It is not only desirable in and of itself to contribute to our understanding of Middle Low German, but it will also help to illuminate a diachronic scenario of the transition from Old Saxon to Middle Low German.

3 Materials and methodology

The diachronic development of OV/VO variation in the history of Low German was studied by means of a comprehensive corpus study on Old Saxon and Middle Low German subclauses with a direct object, a finite verb, and a non-finite verb, to abstract away from influence of finite verb movement. The sources and selection procedure are detailed in section 3.1. These clauses were annotated for information structure and weight, detailed in section 3.2, and the results were analyzed with a binomial regression analysis within a Generalized Linear Mixed Model (GLMM, Baayen 2008, Gries 2015) with fixed and random effects in SPSS.

3.1 Materials

3.1.1 Old Saxon

Old Saxon material is sparse and survives in only two major texts, the *Hêliand* and a verse translation of *Genesis*, as well as in some shorter texts and glosses. The *Hêliand* represents the bulk of the available material, and dates from the first half of the 9th century. It is a gospel harmony written in alliterative verse and is a (rather liberal) translation of Tatian's *Diatessaron*. The full text is available in parsed and annotated format in the HeLiPaD (*Heliand* Parsed Database, (Walkden 2015) and totals 46,067 words (excluding punctuation and code) (Walkden 2016). The Penn corpora can be queried using CorpusSearch 2 (Randall, Taylor & Kroch 2005), but it is not possible to enrich them with information structural encoding in a straightforward way. This is why the corpus was converted to XML format, so that it can be queried using the XQuery language in *CorpusStudio* (Komen 2011b) and annotated in *Cesax* (Komen 2011a), which were designed specifically for the purpose of enriching corpora, including information structure annotation.

3.1.2 Middle Low German

Middle Low German refers to the language spoken in northern regions of Germany, as well as the Baltic and Low Prussian regions, between roughly 1200 and 1600. The language is the descendant of Old Saxon, although there is no uninterrupted attestation of historical documents. The major surviving Old Saxon documents date from the first half of the 9th century, whereas the earliest Middle Low German texts date from the early twelfth century. Material written in the intervening time frame was in Latin. Middle Low German was used internationally as a lingua franca, especially during the time of the Hanseatic League. The language was never standardized, although the increasing importance of the Hanseatic League between 1350 and 1500 resulted in a variety that is largely modelled on the variety that was used in the town council of Lübeck (Peters 2003). It was replaced by Early New High German as a standard written language from around the second half of the 16th century (Peters 1973). Low German survives as a spoken regional language only.

Extensive quantitative studies on Middle Low German have thus far been difficult, because there were no resources available that facilitate syntactic research on a larger scale. Recently, however, a parsed corpus has become available: the Corpus of Historical Low German (CHLG, Booth et al. 2020). The CHLG is syntactically parsed according to the Penn annotation standard. The corpus is the result of a collaboration with the Referenzkorpus Mittelniederdeutsch/Niederrheinisch (1200–1650) (ReN, ReN-Team 2017), which is POS-tagged, but not syntactically parsed. The CHLG contains a subset of the texts included in ReN to ensure a balanced diachronic representation of dialects and genres. The corpus contains material from the four major dialect areas, Westphalian, Eastphalian, North Low German and Eastelbian, and includes texts from different genres, such as charters, laws, and chronicles, as well as religious texts. All texts represent original, native Middle Low German, i.e., they are not translated, and are unambiguously dated and localized. See Booth et al. (2020) for an overview of the texts included. All texts are included in the present study except *Flos unde Blankeflos,* as this text includes end rhyme. The corpus is only available via the online interface,[3] which allows users to query one or more texts using the CorpusSearch query language (Randall, Taylor & Kroch 2005).

3.2 Selection

I selected all subclauses with a direct object, a finite verb (excluding forms of *wesan/sin 'to be*', to avoid passives) and a non-finite verb (excluding *to*-infinitives), as is general practice in studies on Germanic word order variation

[3] https://www.chlg.ugent.be/corpus/

to abstract from effects of finite verb movement. However, the distinction between main and subclauses is not always obvious in earlier Low German, as adverbial subordinators are identical to adverbials in some cases. In addition, verbs are not consistently placed in V2/verb-final position and can hence not serve as a diagnostic to distinguish main clauses from subclauses (Booth et al. 2020, Walkden 2016). This means that in some cases it cannot be unambiguously determined whether a clause involves finite verb movement. Any ambiguous cases were removed from the analysis.

Indirect objects were excluded, as they differ from direct objects in at least two respects. First, they are associated with a different syntactic position: direct objects are base-generated as a sister of V, while it is generally assumed that the indirect object is base-generated in the specifier of V. Second, they represent different thematic roles and have different functions in the clause. A third reason to exclude indirect objects is that their position interacts with that of direct objects; the order of indirect and direct objects is variable (Petrova 2012b, 2015, Rauth 2021). I leave this variation and the interaction with OV/VO variation for future research.

In the remainder of this paper, I will focus on the position of full DPs only, as all pronouns in my sample are preverbal (as is generally the case in continental West Germanic languages, cf. Sapp 2014, 2016 on Old and Middle High German; Burridge 1993 on Middle Dutch). While pronouns are typically discourse-given, and might be preverbal for that reason, it is unclear whether their syntactic status is comparable to that of full DPs. It is a well-known property of German to allow weak, cliticized pronouns in the Wackernagel position; a high position at the left edge of the middle field (Wackernagel 1891). This position is syntactically special in the sense that it is associated with phenomena like complementizer agreement, double agreement, and partial pro-drop. Weiß (2018) demonstrates that the Wackernagel position was already established in Old High German.

3.3 Annotation: Information structure

Information Status was annotated according to the annotation scheme in Struik and van Kemenade (2020, 2022) and Struik and Schoenmakers (2021). They code objects according to a binary given-new distinction, which is essentially a simplified version of the Pentaset (Komen 2013). The three Pentaset labels IDENTITY, INFERRED and ASSUMED are collated into one category GIVEN.

IDENTITY objects are mentioned in the preceding discourse, as in (5a), where *koninge Darium* ‘king Darius’ was specifically mentioned before. This sentence is part of a passage which narrates the story of Alexander the Great’s campaign against the Persian Empire and his pursuit of king Darius, who was killed before Alexander could defeat him. The sentence in (5a) follows the

description of the battles between Alexander and Darius, Darius's surrender, and the brief description of his death.

Objects labelled INFERRED in the Pentaset are not mentioned in the preceding discourse, but the existence of the object can be inferred from another referent. These are essentially elaborating inferables in the sense of Birner (2006), illustrated in (5b). Here, the object *vnse licham* 'our bodies' can be inferred from the existence of the group of persons referred to as *wi* 'we', as all humans have a body. Objects labelled ASSUMED in the Pentaset are also considered given, as these objects are assumed to be familiar to the audience without explicit establishment of the referent in the text. These can be cases of encyclopaedic or world knowledge, but also cases in which there is reference to the context of the text, as in (5c), where we can assume that the readers or listeners will understand that *dessen breef* 'this letter' refers to the physical document that they are holding.

(5) a. IDENTITY

Do	he	wolde	pynigen	de	mordere	de
When	he	wanted	punish	the	murderers	who
koninge		**Darium**	*gedodet*		hadden	
king		Darius	killed		had	

'When he wanted to punish the murderers who killed king Darius'

(Engelhus_Weltchronik_OF_1435)

b. INFERRED (ELABORATING)

Dat	wi	**vnse**	**licham**	dar	mede	sullen	*voden.*
That	we	our	bodies	there	with	will	feed

'that we will feed our bodies with that'

(Spieghel_WF_1444)

c. ASSUMED

de	**dessen**	**breef**	*beseghelet*	hebbet
who	this	letter	sealed	have

'who have sealed this letter'

(Stralsund_EE_1301-1500)

Objects are annotated as NEW if they are newly introduced in the discourse. For example, *eyne arken* 'an ark' in (6a) is new information that has not been mentioned before, which is supported by the use of the indefinite pronoun *eyne* 'a(n)'. Bridging inferables (Birner 2006) are also considered NEW. These are objects that have an explicit textual link to an antecedent, but the existence of the referent does not naturally follow from the existence of the antecedent. In (6b), the object *sinen wingarden* 'his vineyard' contains the possessive pronoun *sinen* 'his', linking it to a previously mentioned referent. However,

readers cannot know that the referent actually owns a vineyard, as it has not been mentioned before and is not an inherently human thing to possess (unlike e.g., *vnse licham* in (5b)), so it is a new referent.

(6) a. NEW
Do gebot ome god dat he scholde *buwen*
Then commanded him god that he should build
eyne arken
an ark
'Then commanded God that he should build an ark'
(Engelhus_Weltchronik_OF_1435)

b. INFERRED (BRIDGING)
de ome **sinen wingarden** nicht *vorkopen* wolde
who him his vineyard not sell wanted
'who did not want to sell him his vineyard'
(Engelhus_Weltchronik_OF_1435)

Objects do not always establish discourse referents. For instance, when they are abstract, part of a fixed expressed or are quantified or negated.

(7) INERT
thu **giuuald** obar mik *hebbian* ni mohtis
you power over me have not can
'that you cannot have power over me'
(Hêliand 3167.5350-5352)

These objects, illustrated in (7), were labelled INERT and excluded from the statistical analysis.

4 RESULTS

This section presents the results of the corpus study. Section 4.1. discusses the interaction between information structure and word order in Old Saxon, and Section 4.2. discusses the interaction between information structure and word order in Middle Low German. Section 4.3. sketches the diachronic change from Old Saxon to Middle Low German.

4.1 Old Saxon

The Old Saxon sample contains 179 analyzable subclauses with a finite verb, a non-finite verb, and an object, 26 of which are Inert and hence excluded from the following discussion. The distribution of given and new objects across OV and VO orders is illustrated in Table 1.

	AUX-O-V	AUX-V-O	O-AUX-V	O-V-AUX	V-AUX-O	TOTAL
GIVEN	30	12	27	54	7	130
	23.1%	*9.2%*	*20.8%*	*41.5%*	*5.5%*	
NEW	3	6	2	8	4	23
	13.0%	*26.1%*	*8.7%*	*34.8%*	*17.4%*	
TOTAL	33	18	29	62	11	153
	21.6%	*11.8%*	*19.0%*	*40.5%*	*7.2%*	

Table 1. Distribution of given and new objects across word order in the Old Saxon *Hêliand.*

There is no clear preference for Aux-V or V-Aux word order; 80 out of 153 (52.3%) objects surface in Aux-V order. The object surfaces in a position preceding the non-finite verb in the majority of the cases (126 out of 153, 82.4%), but there is a clear difference in the position of given and new objects. While over 85% of the given objects surface in OV order, the position of new objects is variable. New objects appear in VO order in 43.5% of the cases. The data thus largely corroborate Walkden (2014)'s findings.

Since the number of new objects is too low in each individual word order category to test the statistical validity of the observations for all word orders in Table 1, the category word order was first collapsed into a binary value OV or VO. Recall from the discussion in section 2.1. that there is no reason to (a priori) assume that the position of the object is related to the order of the verbs, or that information status has a different effect in Aux-V and V-Aux clauses and the data do not suggest that this is the case.[4] The simplified analysis should therefore not lead to different conclusions: the model still predicts the probabilities for an object with a particular information status to surface in a particular word order.

The results in Table 1 were analyzed by means of a binary logistic regression in SPSS28 with word order (OV or VO) as the dependent variable, and OV as the reference category with INFORMATION STATUS (new or given, coded using deviation contrasts) and WEIGHT (of the object, measured as the

[4] The effect of information structure is significant in Aux-V clauses (Fisher's exact, $p = 0.0133$) and marginally significant for V-Aux clauses (Fisher's exact, $p = 0.0747$). In Walkden (2014)'s dataset the effect of information structure is marginally significant in Aux-V clauses (Fisher's exact, $p = 0.0878$), whereas the effect of information structure is significant in V-Aux clauses (Fisher's exact, $p = 0.0225$). Walkden speculates that there may not be a genuine difference between AuxV and VAux clauses, as the differences in significance values is relatively low, and that it may be the result of sampling. The fact that the significance values for my data are similarly low, but reversed, suggests that this is indeed the case,

logarithm of the number of letters, centered around the mean) as independent variables. There is a significant main effect of INFORMATION STATUS (β = 1.307; SE = .4965; t = -2.633; *p* = .009) and WEIGHT (β = .993; SE = .3905; t = -2.544; *p* = .012) on the surface word order. Table 2 presents the odds ratios and 95% confidence intervals for each of the fixed effects. These values represent the size of an effect and indicate whether the influence of a particular factor increases the odds of objects appearing in preverbal position (values below 1) or in postverbal position (values above 1).

		95% CI FOR ODDS RATIO	
MODEL TERM	ODDS RATIO	LOWER	UPPER
Intercept	.004	.000	.082
Information Status	3.696	1.386	9.859
Weight	2.700	1.248	5.842

Table 2. Odds ratios and confidence intervals of the fixed effects of the Old Saxon model

The odds ratio for the variable Information Status indicates that new objects are 3.696 times more likely to appear in postverbal position than given objects. The odds ratio for WEIGHT indicates that, with each one unit increase in object WEIGHT, the chances that this object appears in postverbal position are 2.700 times larger.

4.2 Middle Low German

The Middle Low German sample contains 387 analyzable subclauses with a finite verb, a non-finite and an object, 99 of which are Inert and hence excluded from the following discussion. The distribution of given and new objects across OV and VO orders is illustrated in Table 2.

There is a slight preference for Aux-V word order; 168 out of 288 (58.3%) objects surface in Aux-V order. The majority of the objects surfaces in preverbal position (235 out of 288, 81.6%), but there is a difference between given and new objects, very much like in Old Saxon. Given objects surface in preverbal position in 89.9% of the cases, whereas new objects only do so in 42.0% of the cases. This suggests a strong preference for placing given objects in a preverbal position, while new objects may occur freely in postverbal position.

	AUX-O-V	AUX-V-O	O-AUX-V	O-V-AUX	V-AUX-O	TOTAL
GIVEN	12	21	101	101	3	238
	5.0%	*8.8%*	*42.4%*	*42.4%*	*1.3%*	
NEW	5	23	6	10	6	50
	10%	*46.0%*	*12.0%*	*20.0%*	*12.0%*	
TOTAL	17	44	107	111	9	288
	5.9%	*15.3%*	*37.2%*	*38.5%*	*3.1%*	

Table 3. Distribution of given and new objects across OV and VO word order in Middle Low German.

To allow for a direct comparison with the Old Saxon material, the Middle Low German dataset was also analyzed by means of a binary logistic regression within a generalized mixed model in SPSS28 with word order (OV or VO) as the dependent variable, and OV as the reference category.[5] INFORMATION STATUS (new or given, coded using deviation contrasts) and WEIGHT (of the object, measured as the logarithm of the number of letters, centered around the mean). In addition, TEXTID (the source text of an item) was entered as a random effect, to control for variation that is the result of individual texts. There is a significant main effect of INFORMATION STATUS ($\beta = 2.216$; SE = .4501; $t = 4.923$; $p < .001$) and WEIGHT ($\beta = -.926$; SE = .2076; $t = 4.458$; $p < .001$) on the surface word order. Table 4 presents the odds ratios and 95% confidence intervals for each of the fixed effects.

		95% CI FOR ODDS RATIO	
MODEL TERM	ODDS RATIO	LOWER	UPPER
Intercept	.008	.001	.054
Information Status	9.167	3.780	22.232
Weight	2.524	1.677	3.797

Table 4. Odds ratios and confidence intervals of the fixed effects of the Low German model.

The odds ratio for the variable INFORMATION STATUS indicates that new objects are 9.167 times more likely to appear in postverbal position than given objects. The odds ratio for WEIGHT indicates that with each one unit increase

[5] The effect of information structure is significant in both AuxV (Fisher's exact, $p < .001$) and VAux clauses (Fisher's exact, $p < .001$)

in object WEIGHT, the chances that this object appears in postverbal position are 2.524 times larger.

4.3 Discussion: from Old Saxon to Middle Low German

The results presented in sections 4.1 and 4.2 present a picture of historical Low Saxon word order variation that fits well with the other continental West Germanic languages. While the earlier varieties of Low German allow substantially more variation in the position of the object, the majority of the objects surface in preverbal position. The VO orders that are observed, however, are due to the effects of information structure – new objects are more likely to surface in postverbal position than given objects, and weight – longer objects are more likely to surface in postverbal position. The data show a strong continuity in terms of object placement from Old Saxon to Middle Low German. The frequency at which objects appear in postverbal position is stable, and the effects of information structure and weight remain equally strong.

In fact, the odds ratios suggest that the effect of information structure is stronger in Middle Low German (9.167) than in Old Saxon (3.696). However, this does not necessarily mean that there is also a diachronic increase in the strength of the effect of information structure. The Old Saxon data are based on materials from only a single text, which is a translation from Latin, and focusses on one topic: the life of Christ. As a consequence, the number of discourse-new objects is relatively low. In addition, the text is written in alliterative verse, which might have had an influence on surface word order.

Somers and Dubenion-Smith (2014) argue that extraposition is directly related to the alliterative pattern of the *Hêliand*. They show that the right sentence bracket (in topological terms, i.e. the position of the non-finite verb), frequently coincides with the end of a metrical unit and that this leads to inflated extraposition rates. It is unclear, however, to what extent their analysis applies to direct objects, as they treat any postverbal constituent as extraposed, including appositions. There are cases in my dataset in which the alliterative pattern might have resulted in a particular word order. Consider, for example, (8):

(8) that he mahte fon erðu | up gihôrean
that he may from earth | up hearken

uualdandes **uu**ord | bithiu uuas is ge**uu**it mikil
All-Wielder's word | because was his wisdom great

'That he may hearken up from the earth the All-Wielder's word, because his wisdom was great'

(Hêliand 302.572-575)

The object *waldandes word* 'the All-Wielder's word' is placed across the line boundary, following the non-finite verb *gihôren* 'hearken'. The object does not alliterate with any word in its own clause, but instead alliterates with *gewit* 'wisdom' in the following clause. The object is not particularly heavy, and it conveys given information, which typically results in OV word order as shown above. It might therefore be argued that the object is placed in postverbal position to alliterate with the following passage. However, this type of example does not occur very frequently. In most cases the object and verb alliterate on the same line, as in (9).

(9) Hie **l**iudeo barn | **l**osian uuolda
he men children | save wanted
'he wanted to save the children of men'

(Hêliand 2898.4920-4923)

The object *liudeo barn* 'the children of men' and the verbal complex *losian uuolda* 'wanted to save' may, at least at a first glance, be inverted without violating the meter, and without creating ungrammatical structures. This suggests that the author enjoyed considerable freedom in his composition, and that the meter obeys the general syntactic constraints of the language in the majority of the text, which is in line with the general observation that the poet models his composition on the basis of the spoken language. However, it cannot be ruled out entirely that the author exploited the syntactic flexibility of the language for metrical purposes, which might have resulted in a weaker effect of information structure in Old Saxon compared to Middle Low German.

5 Towards an analysis

The present section turns to the consequences of the results presented in section 4 for an analysis of historical Low German word order variation. There are three logical possibilities for the derivation of OV/VO variation in Low German, each of which has been proposed in the previous literature in the larger context of West Germanic language variation:

(10) a. Basic OV with rightward extraposition
b. Variation in headedness of VP: OV and VO are both base-generated
c. Basic VO with leftward movement

While all proposals derive the surface variation, I demonstrate that the diagnostics developed to detect variation in the headedness of VP, (10b), do not warrant the conclusion that historical Low German allows both OV and VO bases. Second, I argue that an analysis in terms of extraposition from a VO base, (10a), is theoretically untenable. Finally, I argue that an analysis in terms of leftward movement from a VO base, (10c), is a conceptually and empirically better motivated alternative.

5.1 Arguments against extraposition

The evidence adduced for head-initial VP is often based on the position of light elements, such as pronouns and particles. Kroch and Taylor (2000), Pintzuk (1999) and Haider (2013, and earlier publications) have argued that there is a strong correlation between the position of these light elements and the head-directionality setting of the VP. It is generally assumed that light elements cannot be extraposed, so if a light element surfaces on the right of the verb this is considered as evidence that the VP is head-initial. Since particles and pronouns optionally appear in postverbal position in Old and Middle English, they argued that English showed competition between underlying OV and VO grammar in its earlier stages: the Double Base Hypothesis (Pintzuk 1999). Each of these grammars is associated with its own movement operations to derive the attested word order variation (cf. the discussion in Section 2.1).

Conceptual drawbacks of such an analysis aside (cf. Fischer et al. 2000, Struik and van Kemenade 2020, 2022 for discussion), it cannot account for OV/VO variation in historical High and Low German. The above diagnostics for the directionality of the VP do not lead to conclusive evidence for a head-initial VP in historical High German, a very close relative of Low German. Sapp's (2014, 2016) quantitative results demonstrate that postverbal pronouns and particles are rare in historical High German. Similarly, Petrova (2012b) notes that there are no postverbal pronouns or particles in her (relatively small)

sample of Middle Low German texts either. My Old Saxon and Middle Low German datasets also do not contain postverbal particles or pronouns, which suggests that there is no evidence of this type for a head-initial VP. Both Sapp and Petrova argue that this must mean that the VP is head-final underlyingly, and that Old High German, Middle High German and Middle Low German are OV languages. As a consequence, they assume that VO objects are derived by rightward extraposition of the object.

The fact that VO is information-structurally motivated is frequently considered as an argument for extraposition from an OV base in the literature on continental West Germanic. OV is perceived as the basic neutral word order, and it is argued that arguments are moved rightward for pragmatic or prosodic reasons (cf. Sapp 2014, 2016 on Old and Middle High German, and Burridge 1993, Blom 2002, Coussé 2009 on Middle Dutch). However, the syntactic status and precise derivation of extraposition is generally left implicit in the literature on historical West Germanic syntax.

The extraposition analysis runs into several problems, however, especially when we consider its status in relation to clauses with two verbs. Sapp (2016) suggests that VO in Old High German is the result of right-adjunction to VP or TP. However, adjunction to VP is ruled out for two reasons. First, Baltin (2006: 241) demonstrates that extraposition targets "the first maximal projection that dominates the phrase in which it originates" in English, which in the case of object extraposition means that adjunction of the object must be to a phrase higher than VP. Second, if a head-final basic word order is assumed, the basic word order is O-V-Aux. Extraposition to VP derives the ungrammatical V-O-Aux order. To resolve this, one would have to assume that objects right-adjoin to TP, so that the object surfaces behind the verbal complex.

There is data from Modern German which suggests that extraposition to VP is possible (cf. Haider 2010a: 311), but only when the VP is fronted. Consider the following two clauses:

(11) a. [Hingewiesen darauf] haben wir sie oft.
pointed there-on have we her often
'We have often pointed it out to her.'
b. *...dass wir sie oft [hingewiesen darauf] haben

(Haider 2010a: 311)

In (11a), the VP is raised to Spec,CP, but it has a postverbal prepositional object. In (11b) the verb is in a base-generated position from a head-final perspective, but the combination with a postverbal object leads to an ungrammatical sentence. It has been argued that the ungrammaticality is not the result of a restriction on in-situ extraposition, but is the result of

independent reasons such as impossibility of linearizing the resulting structure or obligatory verb cluster formation (see, for instance, Fuβ 2008).

Such an account becomes problematic when we consider the status of multi-verb clauses in early Germanic. The auxiliary system was not yet fully grammaticalized, as many auxiliaries and modals still display full verb properties (Coupé & van Kemenade 2009 for a general perspective, Lightfoot 1979, Warner 1993 on English) and, crucially, there does not seem to be obligatory verb clustering in early Germanic. Jäger (2018) notes in relation to High German that the IPP (*infinitivus pro participio)* construction, in which an expected past particle is replaced by an infinitive when it is followed by another infinitive, is indicative of verb cluster formation and that this is a Middle High German innovation. Similarly, Coupé (2015) shows for Middle Dutch that the origin of the IPP traces back to the 13th century. Walkden (2014) argues, following Biberauer & Roberts (2005, 2008), that Old Saxon clauses with more than one verb are in fact biclausal; the auxiliary is base-generated as a V with its own functional structure, and takes (at least) a TP containing the object and main verb as its complement. If extraposition targets TP associated with the main verb, the object still surfaces in the ungrammatical V-O-Aux word order, under the assumption of a head-final structure, as Aux is in the higher TP. In this case, it must be assumed that extraposition must be delayed until the verbal complex is formed, but there is no clear theoretical rationale for such an assumption (see Koster 2000 for a similar argument).

This issue is also related to the status of Aux-O-V orders in historical Low German. In a head-final approach, these orders would be considered cases of Verb Projection Raising (VPR; Haegeman 1992, Haegeman & van Riemsdijk 1986), an operation which extraposes the entire VP and adjoins it to the higher verb. However, it is unclear what the status of VPR is in Low German. Haeberli & Haegeman (1999) demonstrate that VPR-like patterns in Old English do not have the same status as VPR in present-day West-Flemish, a dialect of Dutch, with regard to negative concord. VPR in West-Flemish creates a scopal island and only allows a double negation reading for a negative object, illustrated in (12) (adapted from Haeberli & Haegeman 1999: 108).

(12)	Da	Valère	nie	en-durft		[niets	zeggen]
					Aux	O	V
	that	Valère	not	not-dares		nothing	say

'that Valère does not dare not to say anything'

In Old English, the VPR-like order always results in a negative concord reading. This suggests that in Old English Aux-O-V order should not be

analyzed as rightward movement of the VP (and it does not need to be, as demonstrated by Biberauer & Roberts 2005, Struik & van Kemenade 2022). This raises the question if such an approach is tenable for Old Saxon and Middle Low German. However, the historical Low German negation system differs substantially from that in Old English. Breitbarth (2013, 2014) shows that there are hardly any cases of negative concord in the Old Saxon *Hêliand*, i.e. clauses with the sentential negator *ni* and an n-marked indefinite, and that Middle Low German only allows negative spread; in such a case negation is to be expressed on multiple indefinites in the scope of negation, illustrated in (13)[6]:

(13) Na sunte Micheles daghe 1349 scal nemen nenne
After St. Michael's day 1349 shall no one no
rok dragen …
cloak wear
'No one shall wear a(ny) cloak after St. Michael's day 1349 '
(Braunschweig 1390, adapted from Breitbarth 2014: 99)

The data retrieved for the present study did not include any object in the scope of negation in combination with another constituent in the scope of negation, so the syntactic status of VPR cannot be unambiguously determined as in Haeberli and Haegeman's (1999) observations on Old English.

The information status of objects in Aux-O-V clauses suggests that Aux-O-V patterns more with OV clauses than with VO clauses, which is what we would expect if Aux-O-V is the result of leftward movement. The data in section 4 do not suggest that Aux-O-V orders pattern with Aux-V-O or V-Aux-O in terms of information status of the object; new objects occur less often (13%) in Aux-O-V order than given objects (23%) in Old Saxon, cf. Table 2. In comparison, new objects appear in VO order in 44% of the cases, compared to only 15% of the given objects. This demonstrates that the information status of the object cannot be assumed to be the trigger for VPR. In addition, it is unclear how (and why) examples such as (14) should be derived under an extraposition account:

[6] Note that (13) is a main clause, so the Aux-O-V order in the clause is the result of finite verb movement to V2, and not of any VPR-like operation.

(14) huo sia sculun era giloƀon haldan thuru hlutteran
how they should their belief keep through pure
hugi
mind
'how they should keep their belief through pureness of the mind'
(Hêliand 483.896-899)

In (14) the object *era giloƀon* 'their belief' surfaces between the auxiliary *sculun* 'should' and the non-finite verb *haldan* 'keep'. The non-finite verb is followed by the PP *thuru hlutteran hugi* 'through pureness of the mind'. To derive this order, two separate extraposition operations must be assumed, both of which target the same position: TP. The VP adjoins to TP to derive the VPR pattern, and following the discussion above, the PP must also be assumed to adjoin to the higher TP. If it adjoins to the lower TP, it would derive ungrammatical V-O-Aux when no extraposition takes place.

Thus far, I have argued that previous analyses of OV/VO variation do not result in an empirically and conceptually adequate analysis of the variation. The diagnostics developed to diagnose the headedness of the VP do not lead to unambiguous evidence for a double base, as postverbal light elements are rare. While this might suggest that the VP is head-final, I have argued that an analysis in terms of extraposition runs into several theoretical and conceptual problems. First, extraposition derives the unattested word order pattern V-O-Aux under the assumption that extraposition is adjunction to TP and a biclausal approach to historical Low German clause structure. Second, there is no evidence for VPR as a rightward movement operation. It is clearly different from VO objects in terms of information status and is allowed in structures for which multiple extraposition movements to the same position have to be assumed. In what follows I will demonstrate that an antisymmetric account, in which rightward movement is ruled out by definition, of historical Low German word order variation derives all word order patterns in a uniform way, and allows a natural transition from Old Saxon to Middle Low German.

5.2 OV is derived from VO

The present section motivates an antisymmetric analysis (in the spirit of Kayne 1994) of historical Low German word order variation. The analysis builds on the work of Biberauer & Roberts (2005), Struik & van Kemenade (2022), Walkden (2014), Wallenberg (2009), to derive the various word order patterns, and incorporates insights from Struik & Schoenmakers (2021) to further account for scrambling patterns in the middle field. An antisymmetric framework entails the assumption of a uniform spec-head-complement

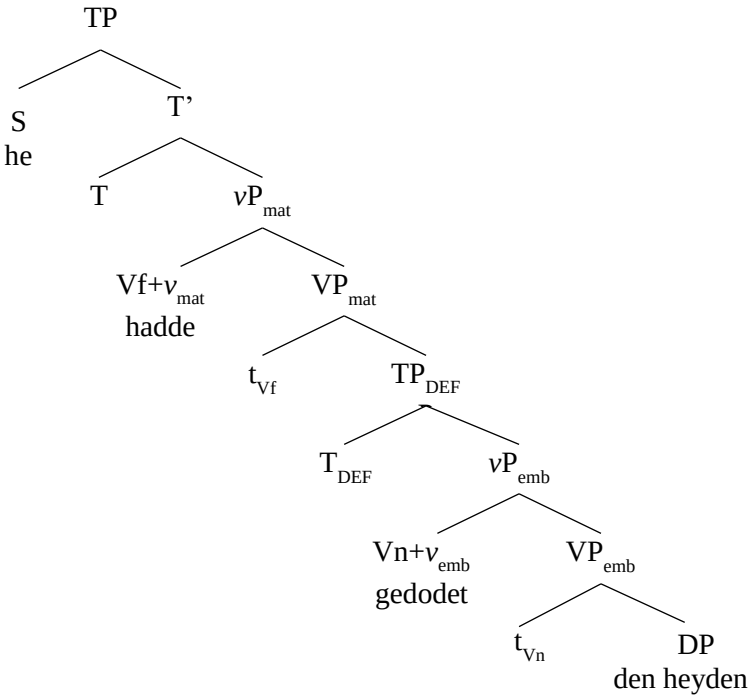
configuration for all phrases in Low German, which means that all phrases are head-initial and that the underlying word order in VP is VO. This is not to say that Low German is a 'true' VO language in terms of surface word order phenomena. The underlying VO word order follows from the theoretical assumption of uniform head-initiality. The OV character of early Low German is the result of leftward movement which derives the surface various word orders.

I follow Biberauer & Roberts (2005) and Walkden (2014) in the assumption that auxiliaries in Old Saxon have not fully grammaticalized and hence project their own VP and associated structure. They select a defective TP complement which hosts the lexical main verb. A derivation in which no (non-obligatory) movement has taken place, i.e. an Aux-V-O clause, as in (1a), repeated here as (15), is illustrated in (16).

(15) Dar na also he hadde *gedodet* **den heyden de**
There after also he had killed **the heathen**
de sinen broder sloch
who his brother hit
'Thereafter he also killed the heathen who hit his brother'
(Engelhus_Weltchronik_OF_1435)

The various word order patterns observed in Old Saxon and Middle Low German are derived by optional pied-piping of the object to Spec,*v*P. Movement of only the object in (16) results in leaking structures, in which part of the VP is stranded in a position following the main verb. When the object is pied-piped as part of the VP, any VP-internal material surfaces in preverbal position. This straightforwardly derives Aux-O-V order and does not require a VPR-type analysis. O-Aux-V orders, which are not included in Walkden's (2014) analysis, are derived similarly. In this case, the object is raised to $v\text{P}_{\text{mat}}$ in (16).

(16)

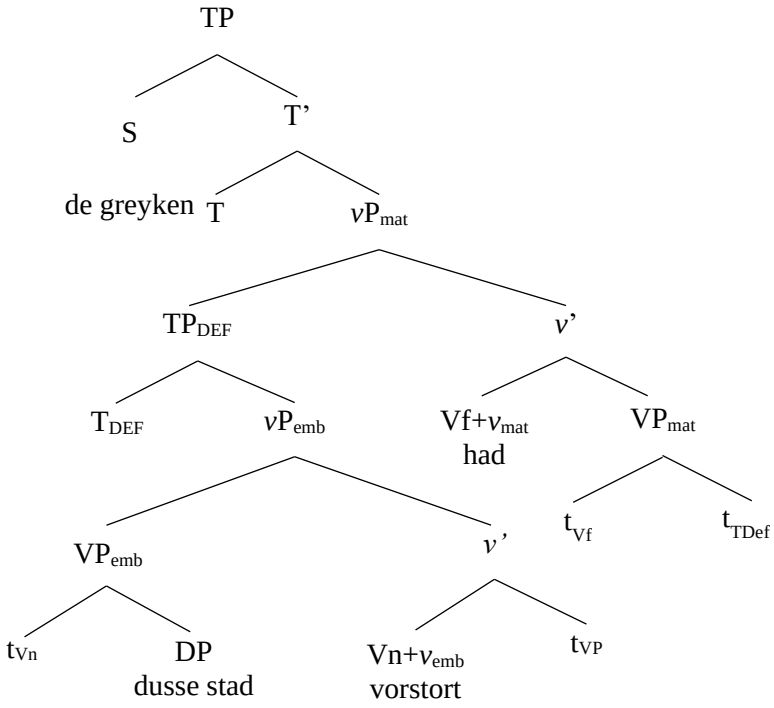


O-V-Aux is derived by pied-piping (at least) the embedded *v*P to a higher position within the main clause. The exact landing site and the size of the constituent that is raised depends on one's assumptions about the position of the finite verb, and the trigger of movement. Biberauer and Roberts (2005) and Wallenberg (2009) assume that the finite verb is located in T, and hence derive V-Aux order by raising of the embedded *v*P to Spec,TP (as a by-product of subject-raising to satisfy the EPP requirement on T). Walkden (2014) assumes that the auxiliary does not raise higher than *v* and that V-Aux is the result of pied-piping of VP_{mat} to Spec,vP_{mat}. Struik and van Kemenade (2022) argue that the finite verb does not move to T in Old English, and remains in *v*. They suggest that V-Aux clauses are backgrounded in Old English, and postulate TP_{DEF} movement to Spec,vP_{mat} as an information-structurally motivated parallel to object movement to vP_{emb}. Nothing crucial hinges on the precise landing site or the size of the lower clause that moves at this point, pending a precise analysis of the position of auxiliaries in Old Saxon and Low German. The crucial point here is that at least vP_{emb} raises to the matrix clause

to a position above the finite verb. The derivation of an O-V-Aux clause, (1d), repeated here as (17) is illustrated in (18), in which TP_{DEF} moves to Spec,vP_{mat}:

(17) do de greyken **dusse stad** vorstort hadden
when the Greeks this city overthrown had
'when the Greeks had overthrown this city'
(Engelhus_Weltchronik_OF_1435)

(18)



The derivation of V-Aux-O order is less straightforward. Walkden (2014), following the analysis in Wallenberg (2009, 2015), argues that V-Aux-O is a case of Heavy NP Shift (HNPS). The derivation is similar to that of (16), in which the embedded VP is first raised to vP_{emb}, and the vP_{emb} (TP_{DEF} in (18)) is raised to vP_{mat} to derive V-Aux order. Walkden extends the clause in (18) by inserting a dedicated FocusP and TopicP between TP and vP_{mat}. HNPS is derived by movement of the object to the FocusP above vP_{mat}, which is followed by remnant movement of vP_{mat} to the TopicP above FocusP which hosts the object. Walkden argues that Aux-V-O clauses are ambiguous between the basic derivation as in (16) and a HNPS derivation of Aux-V-O.

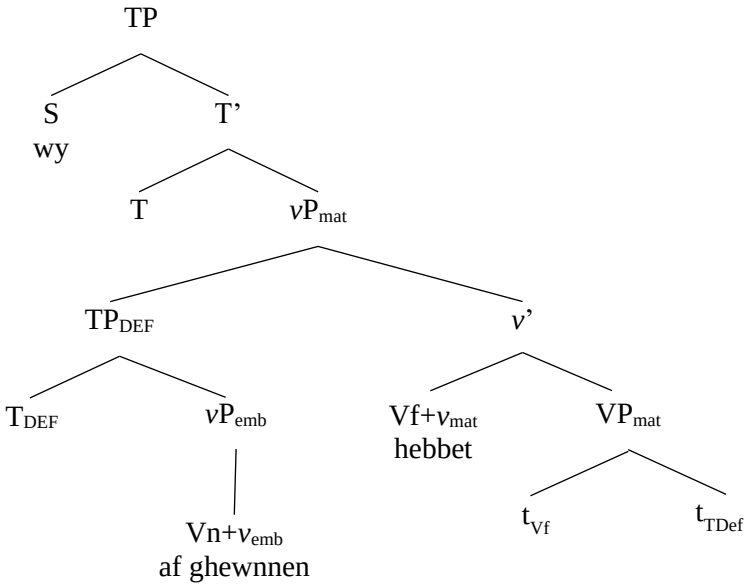
In a HNPS derivation of Aux-V-O the object moves to FocusP, but VP_{emb} is not moved to Spec,*v*P_{mat} before *v*P_{mat} moves to TopicP. He argues that this explains the differences with regard to Aux-V and V-Aux clauses in interaction with information structure. Recall that his data suggest that newness significantly predicts VO order in V-Aux clauses, but not in Aux-V clauses. The data presented in section 4, however, provide no evidence for such a distinction, which makes it unlikely that the derivation of VO orders differs between V-Aux and Aux-V clauses.

In addition, a HNPS analysis runs into some problems, as Walkden (2014) also acknowledges. Most importantly, there is no strict correlation between the position of the object and its information status in historical Low German. Assuming a (cartographic) functional projection which attracts the object leads to the expectation that movement is obligatory and categorical. However, new objects surface postverbally in approximately half of the cases in both Old Saxon and Middle Low German. At the same time, given objects are allowed in VO order as well. It is unclear why newness does not always result in a HNPS-type derivation. In addition, there is no immediate reason why a heavy object would have to move to a FocusP, as heaviness is also a significant predictor of VO word order. Finally, it raises the question why TopicP and FocusP are not involved in any of the other derivations. Whenever there is no HNPS, TopicP and FocusP play no part.

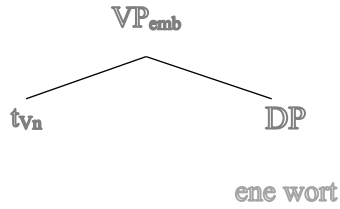
In the analysis presented here information structure is not an integral part of syntax. Instead, the surface position of objects is determined at the interfaces. I argue that after each movement step, the object leaves behind a copy in its base-generated position. Once material is sent to the interfaces, the Spell Out position of an object is determined based on its information structural and prosodic features (see Hinterhölzl 2015 for a similar approach). An object will be spelled out in its highest position, Spec,*v*P, unless it is new or heavy. Note that in such an approach to the interaction between syntax and information structure, V-O-Aux orders are ruled out if Biberauer and Roberts' (2005) and Struik & van Kemenade (2022)'s analysis is on the right track: both adopt a phase-based approach, in which material is subjected to Radical Spell-Out upon the completion of a phase. Only material that is located in the specifier or the head of *v* remains available, whereas anything stranded in a lower position is transferred to PF, freezing it in place. Spell-out of the object in its lowest position will result in linearization in clause-final position. The derivation of a V-Aux-O clause, (1e), repeated here as (19), is illustrated in (20). The object *ene wort* 'a property' has not left VP_{emb} in the derivation in (20) and is hence sent to Spell Out. As a consequence, it surfaces in postverbal position.

(19) dat wy den Raadmannen van Oldenborch:
that we the Councilors of Oldenburg
af *ghewnnen* hebbet **ene wort: de gheleghen is**
obtained have a property that located is
by deme stouwe vppe der nyen stad to Oldenborch
by the quayside up the new city to Oldenburg
'that we, the councillors of Oldenburg, have obtained a property located by the quayside in the new city of Oldenburg'
(Oldenburg_Urkunden_NLS_1350-1500)

(20)



Already sent to Spell-Out:



One issue that has not been addressed thus far is how the emergence of verb clusters fits within the model presented here. Verb clustering has been the topic of debate for a very long time, but there is no consensus in the literature on how verb clusters are formed and how they should be analysed in Modern German (cf. Wurmbrand 2006 for an overview of the many different proposals), and it is unclear how they are derived diachronically, although it is suggested in the literature that verb clustering is a Middle stage innovation (cf. Coupé 2015 on Dutch; Jäger 2018 on High German). It is beyond the scope of this paper to provide a detailed analysis of (incipient) verb clustering in early Low German, but the data presented in Tables 1 and 3 show a diachronic change from Old Saxon to Middle Low German which points to verb clustering in general, and a reduction in the size of the verbal complement (TP_{DEF}) in particular; in Old Saxon, Aux-O-V word order occurs frequently at 21.6%, but this drops to 6.0% in Middle Low German. At the same time, O-Aux-V clauses increase in frequency from 19% to 37.3%. In terms of the analysis presented in this section, this means that the vP$_{emb}$ position above becomes unavailable as a landing site for the object and that the object can only be spelled out in vP$_{mat}$. The clause structure essentially reduces to a monoclausal structure. This may result in a serialization effect, in which the verbal complex becomes a series of heads, rather than a series of phases, which allows reordering of Aux and V.

5.3 The integration of scrambling

The analysis that is developed in this section also straightforwardly accommodates a second type of variation in object placement: middle field scrambling. Scrambling is still a common operation in Present-Day German and Dutch and is generally considered to involve leftward movement to a higher position in the middle field, crossing adverbials, negation or (in the case of high German) indirect objects and subjects (Frey 2004). Several factors are brought up as motivation for scrambling in German, such as animacy (Zubin & Köpcke 1985), agentivity (Fortmann & Frey 1997) and definiteness (Lenerz 1977, Reis 1987), as well as information structure.

Scrambling typically obeys the given-before-new principle, and given objects are more likely to scramble than new objects in standard German (Frey 2004, Meinunger 2000, Musan 2002). The examples in (21) show that scrambling is at least a syntactic option in Old Saxon and Middle Low German. In both examples, the object precedes an adverbial.

(21) a. that man **is** **herron** thar bindan scolda
that man his lord there bound should
'that man should bind their lord there'
(Hêliand 2868.4868-4869)

b. war he **sin** **vader** **erue** van rechte
where he his father inheritance from right
vorstan scole
claim should
'where he could claim his father's inheritance as of right'
(Herford_Rechtsbuch_WF_1375)

It is, however, as yet unclear whether scrambling in Old Saxon and Middle Low German is in any way motivated by information structure[7]. Struik and Schoenmakers (2021) demonstrate that there is a correlation between the loss of VO and a visible effect of information structure on scrambling in Middle Dutch. More specifically, there is no significant effect of information structure on scrambling as long as VO is a productive option. As long as it is, most objects surface in the scrambled order, regardless of their information status. As VO is being lost, and more objects start to appear in the middle field, the information structural division of the middle field into a given (before an adverbial) and a new (following an adverbial) domain becomes clearer. After the 16th century, when VO was lost, given objects strongly prefer the scrambled position, whereas new objects strongly prefer the unscrambled position.

Struik and Schoenmakers (2021) argue, building on Broekhuis (2008), that object licensing occurs in two steps, through Spec,VP to Spec,*v*P, and that the object leaves a copy in each intermediate landing site. The obligatory movement of the object in two steps makes available three positions in which

[7] Rauth (2021) studies the effect of information structure on the order of direct object and indirect object. His analysis suggests that a given object is more likely to precede a new one. However, he also reports a significant decrease of DO > IO in Low German, which is most likely the result of the loss of case. See also Petrova (2015) for a discussion of argument order in the middle field in Middle Low German.

an object can surface. Once the object reaches the edge of vP, the material inside it is sent to interfaces where the Spell Out position is determined. If an object is new or heavy the object is optionally spelled out in the lowest, i.e. VO, position. In other cases, the preferred Spell Out position is the highest available position, i.e. Spec,*v*P (see Struckmeier 2017 for a similar proposal). Struik and Schoenmakers argue that because information structure is generally considered a binary category, i.e. given versus new, only two Spell Out positions are needed. As long as VO is still an option, these are VO and the highest, Spec,*v*P, position. Once VO is lost, the verb no longer demarcates the given and new domain. As a consequence, the middle field, with adverbials as the boundary, takes over this function.

Under the assumption that scrambling is motivated by information structure, given objects are expected to scramble in historical Low German, whereas new objects are expected to remain in a lower position. The objects in the present dataset show that, in most cases, new objects precede adverbials. This suggests that scrambling always takes place and is not (yet) information structurally motivated. Old Saxon and Middle Low German seem to pattern similarly to Dutch: as long as VO is still productive, information structure does not have a visible effect on middle field scrambling. Note, however, that the overall number of new objects in OV clauses is relatively low (because VO is still productive) and that not every clause contains an adverbial. Further research is needed to determine the exact status of scrambling in historical German.

6 Conclusion

This paper substantiates and analyses the status of OV/VO variation from Old Saxon to Middle Low German, as well as the question to what extent the variation is motivated by information structure. In addition to a (re-)examination of the Old Saxon *Hêliand*, the paper also presents novel corpus data from Middle Low German. The results presented in section 4 show that, in terms of OV/VO variation, Middle Low German is a continuation of Old Saxon. The frequency at which objects appear in postverbal position is stable, and the effects of information structure and weight remain equally strong. Given objects surface consistently in OV word order, but new objects appear more freely in VO word order. In addition, longer constituents are more likely to surface postverbally.

The results were evaluated in the light of existing proposals on the derivation of West Germanic OV/VO variation. While these observations may at first glance invite an analysis in terms of extraposition from an OV base, the paper argues explicitly against such an approach: extraposition in multi-verb clauses derives the ungrammatical V-O-Aux word order. In the

alternative analysis that is developed, all word orders are derived by leftward movement from a VO base. It was argued that all objects move to Spec, *v*P. Once the *v*P is completed and sent to the interfaces, the Spell Out position of the object is determined. If the object is given, it is spelled out in a high position, and if the object is new or heavy it is spelled out in a lower position. This account straightforwardly derives all word order patterns, including scrambling patterns.

CHAPTER 6
OV/VO VARIATION AND INFORMATION STRUCTURE IN OLD HIGH GERMAN AND MIDDLE HIGH GERMAN

ABSTRACT This paper revaluates the claim that Old High German and Middle High German OV/VO variation is motivated by information structure. It presents a comprehensive corpus study of Old High German and Middle High German on the position of direct objects, which are annotated for grammatical weight and information structure according to a given-new annotation scheme. The results demonstrate that while the number of VO objects is relatively high in Old High German, information structure and grammatical weight do not significantly predict word order. In Middle High German, grammatical weight is a significant predictor of VO word order, but not information structure. The results suggest, contra much earlier work, that information structure was never a categorical predictor of word order in early High German. The analysis of the variation can therefore not rely on dedicated information structure positions within the syntax. Instead, it is argued that an antisymmetric analysis in which OV word order is derived by obligatory leftward movement of the object from a VO base, but with optional Spell Out in low position, is a better framework to account for early High German OV/VO variation.

1 INTRODUCTION

Much of the literature on word order variation in historical German focusses on the issue of basic word order. It is traditionally assumed that (Modern) German is an OV language and that this word order is a direct inheritance of basic word order in Proto-Indo-European (cf. e.g. Behaghel 1932). However, the position of the direct object (O) is more variable in historical High German. In addition, historical High German allows variation in the order of the finite (Aux) and non-finite verb (V). All possible combinations occur in both Old High German and Middle High German, with the exception of V-O-Aux. The possible Aux-V orders are illustrated in (1) with examples from Old High German, while V-Aux order is illustrated in (2) with examples from Middle High German:

(1) a. Aux-O-V
Oba uuer uuili **sinan uuillon** *tuon*
if someone wishes his will do
'Is someone wishes to do his will'

Lat: *Si quis voluerit voluntatem eius facere*

(Tatian 167, 7-8)

b. O-Aux-V
díu **daz zímber** múge *trágen*
who that timner may carry
'who may carry that timber'

(N_DeCon_II_67-76)

c. Aux-V-O
thaz ih ni mugi *bittan* **minan fater**,
that I not may ask my father
'that I may not ask my father'

Lat: *An putas quia non possum rogare patrem meum*

(Tatian 185)

(2) a. O-V-Aux
daz ir **den ewigin lib** *befítzín* mů́zínt
that you the eternal life possess may
'that you may have eternal life'

(Mitteldeutsche Predigten, 6ra,8)

b. V-Aux-O
Vbe du durch got *firmanen* uuellest **dia**
If you through God overcome want the
uuerltlichen uuideruuartiga
earthly misfortune
'If you want to overcome earthly misfortunes through God'

(Geistliche Ratschläge S165, 24)

This variation has not gone unnoticed in the literature on early High German and has frequently been attributed to an effect of focus: focussed constituents are more likely to surface postverbally than unfocussed objects (Petrova 2009, 2012; Petrova & Hinterhölzl 2010; Sapp 2014, 2016). The syntactic status of the variation remains disputed, however. Many analyses assume VO word order to be the result of extraposition (Axel 2007; Lenerz 1984; Sapp 2014,

2016), but it has also been argued that the syntax of early High German may be derived from a VO-base with leftward movement to derive OV (Hinterhölzl & Petrova 2018; Petrova 2009; Petrova & Hinterhölzl 2010). A third line of argument suggests that the basic word order is variable, and that Old High German (Schlachter 2012) and Middle High German (Haider 2010b) allow both basic OV and VO. No comprehensive data work on the relative position of the direct object and the verb has been done so far, and much of the research focusses on one language stage, in most cases Old High German. This is surprising, given the fact that the Old High German corpus is limited; it is relatively small, and does not include many prose texts. In addition, it mainly includes translations which are of varying quality (Axel 2007; Fleischer 2006).

This first aim of this paper is to provide a diachronic perspective on OV/VO variation in historical High German. Considering Old High German and Middle High German together may shed light on the findings from the Old High German period, as Middle High German is more richly attested and survives in a larger variety of non-translated prose. In addition, the diachronic perspective may yield new insights in the development of OV/VO variation in Old High German. The second aim of this paper is to provide a quantitative analysis of two important factors that are thought to motivate the variation: information structure and constituent weight. The annotation of information structure will not be based on the focus-background distinction, however, in contrast to much earlier work. Focus is a concept that is notoriously hard to define, and the exact definition is very frequently left implicit in previous literature, or clearly differs between authors. Rather, the data will be analyzed according to the given-new distinction, following the methodology developed in Struik and van Kemenade (2020). The given-new distinction as it is implemented in this study provides a straightforward and replicable way of annotating information status. In addition, it allows a comparison with historical English, Dutch, and German.

This paper is organised as follows. Section 2 provides an overview of the previous literature, with a particular focus on the status of information structure. Section 3 details the methodology and the materials used. Section 5 discusses the implications of the results, which are presented in Section 4. Section 6 concludes the chapter.

2 Word order variation in historical High German

It is by now well established that Old High German and Middle High German display many of the typical features of Present-Day High German. Traditional analyses assume Old High German and Middle High German to be an asymmetric OV/V2 language, very much like the modern variety (Axel 2007;

Lenerz 1984; Sapp 2014, 2016), but which allows more variation. For instance, the finite verb is generally fronted to V2 position in main clauses, but appears in V3 orders with some frequency (Axel 2007; Catasso et al. 2021), as in (3), but also in V1 position, as in (4) (Axel 2007).

(3) Sie tho antalengitun imo Neín
they do answered him no
'They said to him: 'No'.'
(T. 337, 10-11, adapted from Catasso et al. 2021, p. 2)

(4) gieng thô zuo ther costari
went PART to the tempter
'the tempter came to him'
(T. 113, 28, adapted from Axel 2007, p.113)

In subclauses, the finite verb does not raise to V2 position, and remains in a verb-late position together with any non-finite verb, which results in surface OV word order in Present-day German. However, Old High German and Middle High German allow more variation in the position of the object than Present-day German. As illustrated in (1c) and (2b), the object may also surface in postverbal position. Sapp (2014, 2016) provides a quantitative overview of the rate of VO from Old High German to Early New High German and shows that 50.6% of the constituents are postverbal in Old High German. In Middle High German and Early New High German, which Sapp considers together, postverbal placement of constituents is still a frequent phenomenon, and occurs in 29.5% of the clauses which contain a constituent that may be placed in postverbal position. He notes that the rate of extraposition is relatively stable in the period 1200-1500, but is reduced sharply in the 16th century to the 6% that is attested in Modern German. However, Sapp does not distinguish direct objects from other potential postverbal material, such as PPs. In present-day German, the possibility to place objects in postverbal position has been restricted severely, whereas postverbal PPs still relatively frequently. It is unclear how many of the extraposed constituents in Sapp's counts are in fact (direct) objects, and when VO with arguments was lost from High German.

2.1 Basic OV or basic VO?

The variability of the surface position of the object in earlier stages of High German has sparked a lively debate on the base position of the object, not only in early High German, but also in the larger context of West Germanic OV/VO variation. Fuß (2018) evaluates several OV/VO diagnostics to determine the

basic word order of Old High German clauses. He argues that early German, and Old High German in particular, is best characterized as an OV language, at least on the surface. The two most common diagnostics for basic word order are the position of particles and pronouns, and the order of verbs in a verbal complex. Pintzuk (1999) argues for Old English that particles and pronouns resist extraposition, based on the observation that they hardly surface postverbally in O-V-Aux clauses in Old English. Pintzuk argues for a Double Base, and postulates that there is variation in headedness of both the IP (TP in more recent terminology) and VP. V-O-Aux word order is unattested in West Germanic, and so it follows that a head-final (V-Aux) TP cannot combine with a head-initial (OV) VP. O-V-Aux clauses are therefore OV by definition, and cannot be the result of leftward movement from a VO base in such an approach. As particles and pronouns resist extraposition, a postverbal particle or pronoun is therefore taken to be indicative of a VO base order.

Postverbal pronouns are rare in OHG, and if they do occur, they very frequently follow the Latin word order. In (5) the pronoun *mih* 'me' follows the verb *sendida* 'sent', but in the Latin text the pronoun *me* also follows the verb *misit*.

(5) dhazs uuerodheoda druhtin sendida [mih] zi dir
that the-armies' Lord sent me to you
'... that the Lord of Hosts sent me to you'

Lat: *et scies quia dominus exercituum misit me ad te*

(Isidor, 236)

This raises the question whether postverbal pronoun placement was a genuine option in Old High German, or whether these patterns are the result of Latin influence. Dittmer and Dittmer (1998) show that postverbal placement of pronouns is rare when there is no Latin model with a postverbal pronoun, and that pronouns are never shifted to a postverbal position when the pronoun is preverbal in the Latin model. On the other hand, pronouns are shifted from a postverbal Latin model to a preverbal position in the translation in the majority of the cases.

Similarly, other light elements rarely occur in postverbal position. Axel (2007) shows that there are hardly any postverbal particles, and Fuß (2018) adds that light adverbs such as *thô*, *dhar*, or *nû* never follow a non-finite verb, or a finite verb in an embedded clause in Isidor and Tatian. Similar results are produced by Sapp (2014) for Middle High German and Early New High German, which suggests in their view that the basic word order has been OV throughout the history of High German.

The order of the verbs in a verbal complex is also frequently used as a diagnostic for underlying word order. This goes back to Greenberg (1963)'s observation that the order of the verbs in a verbal complex and the order of the object and the main verb are related. In OV languages, the non-finite verb often precedes the finite verb, whereas in VO languages the non-finite verb follows the auxiliary. In Haider (2013)'s OV/VO framework, OV languages allow variation in the order of the verbs, but the order of verbs in VO languages is strictly Aux-V. From this perspective, High German has been an OV language since its earliest attestation. It allows the full range of auxiliary-verb-object order variations (V-O-Aux is ruled out on independent grounds), as illustrated in (1) and (2), including variation in the order of Aux and V (see Sapp 2011, 2014 for details regarding the development of verbal complexes from Middle to Modern High German).

Based on these observations it may be concluded that High German has always been an OV language, but one which allows more freedom in the surface position of its arguments. However, as also noted by Fuß (2018: 260), the fact that the language displays "surface properties that are reminiscent of the present-day Germanic OV languages" does not necessarily enforce a particular analysis. Axel (2007) and Sapp (2014, 2016), among others, argue for basic OV word order, with a rather liberal extraposition rule. The details of such an analysis are often left implicit, but extraposition is generally assumed to be the result of rightward adjunction to VP or TP. Others have argued that the variability in object position is the result of base-generation in either preverbal or postverbal position (i.e., Haider 2013, Schallert 2010, Schlachter 2012). It is also possible to derive the surface word order in an antisymmetric framework (Kayne 1994) by means of leftward movement of objects and adjuncts, as Hinterhölzl (2004, 2010), Hinterhölzl and Petrova (2018) and Petrova and Hinterhölzl (2010) propose. Before taking a stance in this debate, it is crucial to understand the factors that govern the variation. This is the subject of the next section.

2.2 The influence of information structure

One factor that has been recognized from very early on (at least since Behaghel 1932) is information structure. The general observation is that discourse-given information tends to precede discourse-new information, which leads to the hypothesis that given information surfaces in OV order, while new information surfaces in VO. This hypothesis has proved to be too simple in the larger context of West Germanic OV/VO variation, but an information structure effect has been observed for all languages (Struik in press; Walkden 2014 on Old Saxon and Middle Low German; Coussé 2009; Struik & Schoenmakers 2021 on Middle Dutch; De Bastiani 2019; Struik &

van Kemenade 2020, 2022; Taylor & Pintzuk 2012 on Old and Middle English, among others)

Much of the earlier literature on the effect of information structure on word order in historical High German revolves around the effect of focus. It has been argued that focused material is more likely to be placed in postverbal position than non-focused or backgrounded material (Hinterhölzl & Petrova 2018; Sapp 2014, 2016; Schlachter 2012). While the information-structural distinction between the focus and background domains and the distinction between given and new are correlated, they are not identical. Petrova and Solf (2009) note that the focus/background distinction operates on a higher level than the given/new distinction: While the given/new distinction is concerned with the pragmatic status of individual constituents, the focus/background distinction is concerned with the clause as a whole and is an indicator of communicative weight or relevance. The term new-information focus is thus associated with relevant, newly added information to the discourse and establishes a new relation between referents out of a possible set of alternatives. Crucially, this is not to say that individual constituents within the focus domain have to be new (cf. also Halliday 1967). As a consequence, the size of focus domains may differ in terms of how much of the proposition is focused. It may be an entire clause, the VP, or only a sub-constituent.

Hinterhölzl and Petrova (2018) take this approach to determine the influence of focus on Old High German object placement. They distinguish two types of focus: new-information or presentational focus and contrastive focus. New-information focus identifies the part of the utterance out of an implied (open) set of alternatives, while contrastive focus singles out constituents from an explicitly mentioned set of alternatives. They argue that the Old High German clause is divided into a background domain in the middle field, a contrastive focus domain in the middle field immediately preceding the finite verb, and a postverbal new-information focus domain (see Petrova 2009, 2012a; Petrova & Hinterhölzl (2010); Schlachter (2012) for a similar approach and conclusions).

Hinterhölzl and Petrova (2018) do not present quantitative data, and part of their discussion is based on the given-new distinction, rather than the focus-background distinction. For instance, they mention that many of the preverbal constituents convey given or inferable information, but not whether it is part of the focus of the clause, whereas postverbal placement of constituents is argued to be the result of new-information focus. This suggests that it may not be focus that is a determinant of object position, but givenness or newness.

Sapp (2016) is one of the few who present quantitative data on Old High German. His data suggests that information structure is not directly correlated with a position in the clause, like Petrova and Hinterhölzl do. He demonstrates that constituents are more likely to be extraposed when there is focus on the

constituent, and that there is a slight preference for constituents with new-information focus to postpose, but the overall results are mixed. However, Sapp seems to use different annotation schemes for the two texts in his dataset, Tatian and Isidor. He uses the focus type coding in the T-CODEX, which is based on the focus-background annotation as outlined above for Tatian, but only annotates newness based on previous mention for Isidor. In addition, Sapp focusses on any extraposable constituent, so it is unclear to what extent his conclusions apply to objects only.

Similarly, Sapp (2014) argues that focus is involved in the postverbal placement of constituents in Middle High German and Early New High German as well. His annotation deviates slightly from Sapp (2016) and also from the definition of focus in Petrova and Solf (2009) and Hinterhölzl and Petrova (2018). To determine the focus structure of a clause, he first determined the information status based on a given/new/contrastive distinction and determined the focus of the clause on the basis of that. If a constituent is new or contrasted, Sapp considered it to be the focus of a clause. However, he only reports statistics on the effect of the focus structure of the entire clause on OV or VO ordering, but not on the effect of the information status of individual constituents. This makes it unclear how many of the extraposed constituents are in fact part of the focus: it is possible that Sapp's dataset contains, for example, a clause that has object focus, but in which an (unfocused) PP or adverb is extraposed. This would still be counted as extraposition in his analysis, but it is not focus on the extraposed constituent that is responsible for the extraposition. Sapp notes in passing that extraposed elements tend to part of the focus, but he does not provide quantitative evidence.

The previous literature on Old High German and Middle High German thus does not provide a conclusive picture of the influence of information status on object placement, although the results suggest an effect that is in line with other early West Germanic languages. However, the annotation schemes used in previous literature are different, and previous literature has focused on extraposition of any constituent, and not just objects. The following sections reports on a corpus study on early High German which traces the diachronic development of OV/VO variation. It re-evaluates the data on Old High German and Middle High German by applying a methodology that has also been applied to historical English, Dutch, and Low German to allow comparison between these languages. In addition, considering Old High and Middle High German will illuminate a diachronic scenario, and will help to gauge the Old High German material, which is generally considered problematic.

3 Database and methodology

The diachronic development of OV/VO variation in early High German is studied by means of a comprehensive corpus study on Old High German and Middle High German subclauses with a finite verb (excluding forms of *wesan* 'to be', to exclude passives) and a non-finite verb (excluding *zu*-infinitives) and a non-pronominal direct object, following the methodology developed in Struik (2021), Struik and Schoenmakers (2021), Struik and van Kemenade (2020, 2022). Selecting subclauses with two verbs abstracts away from influence of finite verb movement. I focus on direct objects only, as the function of indirect objects and PPs (and other adverbials) are different and may be to subject to different placement constraints. The sources and selection procedure are detailed in section 3.1. The relevant examples were annotated for information status according to the scheme in section 3.3. The results were analyzed by means of a binomial regression analysis within a Generalized Linear Mixed Model (GLMM, Baayen 2008, Gries 2015) with fixed and random effects in SPSS28 and are discussed in section 4.

3.1 Materials

3.1.1 Old High German

The Old High German material that is handed down to us dates from 750-1050. The language survives in a substantial number of texts, but the majority of these texts are inscriptions and glosses, and few of the larger texts are prose. Hence, the material best suited for syntactic research is sparse. An additional complication is the fact that most of the longer documents are translated from a Latin source text, in some cases quite slavishly. For instance, the translator(s) of *Tatian*, one of the major OHG documents, translates the Latin text line-by-line, even in cases when a sentence covers more than one line, and while it is not a word-by-word translation, the word order frequently follows the original (see Axel 2007, Fleischer 2006) for a discussion and overview of the difficulties of using individual OHG texts for syntactic research). The solution proposed by Dittmer and Dittmer (1998) to only include examples that deviate from the Latin original has become the norm for much previous research. The rationale is that if an OHG text shows a syntactic deviation from the original Latin text, it must mean that this clause is a reflection of authentic OHG syntax. However, this means that possible valuable evidence might be discarded from a sample that is already small. For that reason, it was decided to not exclude clauses which follow the Latin origin beforehand. A discussion of possible influence from Latin is postponed until section 5.

The data were collected from the Referenzkorpus Altdeutsch (ReA) (Donhauser, Gippert & Lühr 2017), which contains the complete collection of

available early German material written between 750 – 1050 (650,000 words, including Old Saxon texts, which are excluded from the present study). The corpus is POS-tagged and lemmatized and can be accessed via the ANNIS search interface (Krause & Zeldes 2016).[1] Unfortunately, the corpus is not syntactically parsed, but it is possible to create a subcorpus from which relevant examples could be selected manually, as the corpus contains clause-type annotation. For the present study, only clauses introduced by a conjunction and which function as an adverbial clause, relative clause, subject clause or object clause were selected. In addition, these clauses should contain at least a finite and a non-finite verb. Argument relations are not annotated in the corpus, so direct objects had to be manually identified and selected from the subcorpus.

3.1.2 Middle High German

Middle High German was spoken between 1050-1350 and is more widely attested, and in a richer variety of native texts. Therefore, it provides a more reliable source for studies on early German syntax. The data for the present study were collected from the Referenzkorpus Mittelhochdeutsch (ReM), which contains a mostly complete collection of early Middle High German (1050 -1200), and a selection of the available Middle High German material (1200-1300) (Petran et al. 2016). The corpus contains approximately 2 million tokens, which are POS-tagged and lemmatized. The corpus is also available through the ANNIS search interface.[2]

Like the ReA, the ReM corpus is not syntactically parsed, so relevant examples were selected manually. However, where the ReA contains clause-type annotation, the ReM does not. This means that it was not possible to automatically generate a subcorpus with subordinate clauses only. Instead, relevant clauses had to be extracted manually. Considering the size of the corpus, a text selection was made, which follows the selection in Catasso (2021). The 13 texts included in the present study are balanced diachronically and represent a balanced selection of dialect and genre. The majority of the texts are untranslated, with the exception of the *Franziskaner Regel* and *Speculum Ecclesiae*. These texts have a Latin Vorlage, but the translation seems extremely free (Catasso p.c.).

3.2 Annotation: Information structure

The information status of each object was annotated according to the annotation scheme in Struik (in press), Struik and Schoenmakers (2021), Struik and van Kemenade (2020, 2022). They code objects according to a

[1] https://korpling.german.hu-berlin.de/annis3/ddd
[2] https://springbank.linguistics.rub.de/annis/annis3/REM/

binary given-new distinction, which is based on the Pentaset annotation scheme (Komen 2013). The Pentaset distinguishes five information states: IDENTITY, INFERRED, ASSUMED, NEW, and INERT. Since IDENTITY, INFERRED and ASSUMED objects behave similarly with regard to word order, they are collated into one category GIVEN for the purpose of this study.

IDENTITY objects are mentioned in the preceding discourse, as in (6a), where *daz lamp* 'that lamb' is part of a passage which details the guidelines for sacrificing and preparing a lamb so that they may receive the Holy Spirit.

(6) a. IDENTITY
daz ír **daz** **lamp** alſe hute muzit ezzín
that you that lamb so now must eat
'that you must eat the lamb right this moment'
(Mitteldeutsche Predigten -b4va,15-16)

b. INFERRED (ELABORATING)
di **ir** **hᵉze** zu gote hāt gekart
who their hearts to God have turned
'who have turned their hearts to God'
(Mitteldeutsche Predigten - c3vb,7)

c. ASSUMED
vbe du ana dir keoboren uuellest **die**
If you on you overcome want the
fleizslichen **kispensta**
fleshly desires
'If you want to overcome the fleshly desires by yourself'
(Geistliche Ratschläge - S164,9)

Objects labelled INFERRED in the Pentaset are not mentioned in the preceding discourse, but the existence of the object can be inferred from another referent. These are essentially elaborating inferables in the sense of Birner (2006). This is illustrated in (6b), where the object *ir hᵉze* 'their hearts' can be inferred from the existence of the referents indicated by the relative pronoun *di* 'who', as all people have a heart. Objects labelled ASSUMED are also considered given. The objects are referents which are familiar to the audience without explicit establishment of the referent as a new object in the text. These can be cases of encyclopedic or world knowledge, but also cases in which there is reference to the context of the text. In (6c), the object *die fleizslichen kispensta* 'the fleshly desires' is mentioned for the first time in the text. However, it may be assumed that it is clear to the audience what they 'fleshly desires' are.

Objects are annotated as NEW if they are newly introduced in the discourse. For example, *einen benanten ſchaz* 'a promised treasure' in (7a) is a treasure

that has not been mentioned before, which is supported by the use of the indefinite pronoun *einen* ‘a(n)’.

(7) NEW
daz er ime borge wolte **einen benanten ſchaz**
that he him guarantee would a promised treasure
‘that he would guarantee him a promised treasure’
(Predigtfragmente, 9a20-21)

(8) INERT
den ſîe nýe **leít** hatten gedaín
who they not pain had done
‘whom they hadn’t hurt’
(Klagschrift, 1ra,206)

Objects do not always establish discourse referents. For instance, when they are abstract, quantified or negated or part of a collocation. The object *leít* ‘pain’ in (8) is part of the fixed expression *lèid tuon* ‘lit. to do pain,’ and does establish a discourse referent. This type of object was excluded from the results presented in the following section.

4 RESULTS

4.1 Old High German

The Old High German sample contains 84 subclauses with a finite verb, a non-finite verb, and an object, 20 of which are non-referential and hence excluded from the following discussion. The distribution of given and new objects across OV and VO orders is illustrated in Table 1.

The distribution of the data shows a slight preference for OV word order (39 out of 64, 60.9%), but there is no clear correlation between information structure and word order. Given objects are preverbal in 32 out of the 52 (61.5%) cases, whereas new objects are preverbal in 7 out of 12 examples (58.3%). Note that the majority of the objects surfaces in either Aux-V-O or O-V-Aux order, while V-Aux-O is a minority pattern. Aux-O-V (ungrammatical in Modern German) and O-Aux-V occur with some frequency.

	AUX-O-V	AUX-V-O	O-AUX-V	O-V-AUX	V-AUX-O	TOTAL
GIVEN	6	17	10	16	3	52
	11.5%	*32.7%*	*19.2%*	*30.8%*	*5.8%*	
NEW	2	4	0	5	1	12
	16.7%	*33.3%*	*0%*	*41.7%*	*8.3%*	
TOTAL	8	21	10	21	4	64
	12.5%	*32.8%*	*15.6%*	*32.8%*	*6.3%*	

Table 1. Distribution of given and new objects across word order in Old High German

Since the number of objects is too low in each individual word order category to test the statistical validity of the observations in Table 1, the category word order was first collapsed into a binary value of OV or VO. The results were then analyzed by means of a binary logistic regression in SPSS28, with WORD ORDER (OV or VO) as the dependent value, and OV as the reference category. INFORMATION STATUS (new or given, coded using deviation contrasts) and WEIGHT (of the object, measured as the logarithm of the number of letters, centered around the mean) were included as fixed factors. In addition, TextID (the source text of an item) was added as a random factor, to control for variation that is the result of individual texts. There was no significant main effect of INFORMATION STATUS (β = -.059; SE = .6868; t = -.086; p = .932), nor of WEIGHT (β = -.015; SE = .3432; t = -.045; p = .964). Table 2 presents the odds ratios and 95% confidence intervals (CI) for each of the fixed effects. These values represent the size of an effect and indicate whether the influence of a particular factor increases the odds of objects appearing in preverbal position (values below 1), or in postverbal position (values above 1).

		95% CI FOR ODDS RATIO	
MODEL TERM	ODDS RATIO	LOWER	UPPER
Intercept	.004	.000	.082
Information Status	.943	.239	3.722
Weight	.985	.496	1.956

Table 2. Odds ratios and confidence intervals of the fixed effects of the Old High German regression model.

The odds ratios for both INFORMATION STATUS and WEIGHT are very close to 1, and the upper and lower bound of the CI crosses 1. This indicates that the model cannot accurately determine the odds of an object surfacing in either

OV or VO word order. In combination with the high *p*-values and intercept values (β) close to 0, we may conclude that INFORMATION STATUS and WEIGHT do not influence word order variation in Old High German.

4.2 Middle High German

The Middle High German sample contains 224 subclauses with a finite verb, a non-finite verb, and an object, 40 of which are non-referential and hence excluded from the following discussion. The distribution of given and new objects across OV and VO orders is illustrated in Table 3.

	AUX-O-V	**AUX-V-O**	**O-AUX-V**	**O-V-AUX**	**V-AUX-O**	**TOTAL**
GIVEN	3	3	59	70	17	152
	2%	*2%*	*38.8%*	*46.1%*	*11.2%*	
NEW	3	3	10	7	9	32
	9.4%	*9.4%*	*31.3%*	*21.9%*	*28.1%*	
TOTAL	6	6	69	77	26	184
	3.3%	*3.3%*	*37.5%*	*41.8%*	*14.1%*	

Table 3. Distribution of given and new objects across word order in Middle High German

The Middle High German data show a pattern which is different from Old High German, and which is more similar to the pattern in early Dutch (cf. Struik & Schoenmakers 2021) and Low German (cf. Struik in press). The data show an overall preference for OV word order; 152 out of 184 (82.6%) of the objects are preverbal. In addition, there seems to be an effect of information status on object position. Given objects strongly prefer preverbal position; 132 out of 152 objects (86.8%) appear in a position preceding the verb. New objects, on the other hand, appear more freely in VO word order; 12 out of 32 (37.5%) new objects are postverbal. The majority of the objects surface in O-Aux-V or O-V-Aux word order. Aux-O-V and Aux-V-O are minority patterns, although V-Aux-O occurs at some frequency.

To test the statistical validity of these observations the results were analyzed by means of a binary logistic regression within a generalized mixed model in SPSS28, comparable to the analysis for Old High German. The model takes WORD ORDER (OV or VO) as the dependent value, with OV as the reference category. INFORMATION STATUS (new or given, coded using deviation contrasts) and WEIGHT (of the object, measured as the logarithm of the number of letters, centered around the mean) were included as fixed factors. In addition, TEXTID (the source text of an item) was added as a random factor, to control for variation that is the result of individual texts. There was no significant main effect of INFORMATION STATUS (β = .610; SE = .5085; t = 1.200; p = .232). WEIGHT turned out to be a significant predictor

of word order (β = 1.304, SE = .3005; t = 4.339; p < .001). Table 4 presents the odds ratios and 95% confidence intervals (CI) for each of the fixed effect. These values represent the size of an effect and indicate whether the influence of a particular factor increases the odds of objects appearing in preverbal position (values below 1), or in postverbal position (values above 1).

		95% CI for Odds Ratio	
Model Term	Odds Ratio	Lower	Upper
Intercept	.001	.000	.034
Weight	3.684	2.036	6.665
Information Status	1.841	.675	5.021

Table 4. Odds ratios and confidence intervals of the fixed effects of the Middle High German regression model.

The odds ratio for WEIGHT indicates that with each one unit increase in object WEIGHT, the chances that this object appears in postverbal position are 3.684 times larger. The effect of INFORMATION STATUS failed to reach significance, but the odds ratio of 1.841 suggests that the effect of INFORMATION STATUS is in the direction that we expect; new objects are 1.841 times more likely to surface in postverbal position.

4.3 Interim conclusion

The data presented in this section demonstrate that referential objects appear in substantial numbers in VO order in Old High German, but that this number is reduced significantly towards Middle High German. There is no clear information structural pattern in Old High German; given and new objects appear in OV and VO order at comparable frequencies. In addition, WEIGHT does not have an influence on object position either. In Middle High German there is an overall preference for OV word order. While new objects surface more easily in VO order than given objects, it turned out not to be a significant predictor with WEIGHT added to the model, which was a significant predictor of VO word order.

The results suggest that INFORMATION STATUS plays no significant role in early High German word order variation. This finding is surprising in light of previous literature which claims that VO is the result of focus. It is also surprising in comparison with OV/VO variation in other early West Germanic languages, especially Dutch and Low German, which are governed by INFORMATION STATUS. The next section will discuss the implications of these findings for an analysis of the variation.

5 Discussion

Especially the Old High German data show an OV/VO variation pattern that is unexpected in light of previous literature, and in light of the broader perspective of West Germanic word order variation, as there does not seem to be an effect of information structure. Before going into the consequences of these findings for a theory of OV/VO variation in early High German, this section will first evaluate the quality of the sample, and its influence on the results in section 4.

The data in section 4 first of all contains material from Otfrid's *Evangelienbuch*. The work is one of the first substantial literary works written in Old High German. It is a gospel harmony, which is very innovative in its use of end rhyme. Each strophe consists of two long lines. Each long line is divided in two half-lines – indicated by a caesura in the manuscript - which are joined by rhyme, illustrated in (9) in which *móhta* 'could' rhymes with *dóhta* 'glory'.

(9) tho ébanlih ni móhta | gizéllen thaz dóhta
then similar not could describe that glory
'when I likewise could not describe the glory'
(Otfrid 23, 238)

The example in (9) also illustrates the problem that the rhyming pattern might impose on the study of word order: the object may be postverbal because of the rhyming pattern. It is generally assumed that a poet models his composition on the basis of the spoken languages, but it may be the case that a poet exploits the syntactic possibilities of a language for metrical purposes. The order in (9) is not ungrammatical, but it is unexpected under the hypothesis that postverbal word order is the newness, as the object is given. In fact, my dataset contains 8 examples from Otfrid's *Evangelienbuch*. All of these objects are given, but 5 of them appear in VO order and are part of the rhyme. This suggests that rhyme may inflate the rate of (discourse-given) VO objects.

As already noted in section 3.1.1, one of the main disadvantages of the Old High German corpus is that there are no texts of substantial length which unambiguously represent native Old High German. Most studies on Old High German OV/VO variation have focused on one (or more) of the major texts, such as *Tatian* and *Isidor*. The general practice in studies on Old High German syntax is to only include deviating examples, especially when working on *Tatian*, because examples these are most likely to represent native structures (cf. Dittmer & Dittmer 1998). For the purposes of this study, however, it was decided to include the full range of relevant examples, and not to rely only on

deviating examples in translated texts alone, so that no relevant material would be excluded beforehand.

In addition to the larger verse and translated prose texts, the Old High German corpus contains several smaller prose texts which are not translated. These may be used as a baseline for native Old High German word order variation, in addition to clauses which do not have a Latin model. Table 5 divides the results presented in section 4 according to whether or not there is a Latin model for the Old High German clause (examples from Otfrid's *Evangelienbuch* are excluded).

	LATIN MODEL			NO LATIN MODEL		
	OV	**VO**	**TOTAL**	**OV**	**VO**	**TOTAL**
GIVEN	12	8	20	17	7	24
	60%	*40%*		*70.3%*	*29.2%*	
NEW	4	2	6	3	3	6
	66.7%	*33.3%*		*50%*	*50%*	
TOTAL	16	10	26	20	10	30
	61.5%	*38.5%*		*66.7%*	*33.3%*	

Table 5. Distribution of objects across OV/VO word order divided by clauses which have a

Table 5 shows that the distribution of objects across OV and VO orders is similar in clauses with a Latin model and those without Latin model. While VO occurs slightly more frequently in translated texts, the difference in OV/VO distribution between clauses with a Latin model and those without a model is not significant, $\chi^2 = 0.1597$, $p = .689577$. When considering the effect of information structure, we may note a slight preference for new objects to surface in OV word order in clauses with a Latin model compared to new objects in clauses without a Latin model. In addition, given objects surface more frequently in VO order in clauses with a Latin model than in clauses without Latin model. However, the effect of information structure is not significant for clauses with a Latin model, two-tailed Fisher's exact = 1, nor for clauses without a Latin model, two-tailed Fisher's exact = .372. This suggests that there is no significant difference in effect of information structure in clauses with a Latin model and clauses without a Latin model.

The data in Table 5 for clauses without a Latin model are as close to native Old High German as the sample allows us to go. However, the data are still remarkably different from the closely related Old Saxon material. Struik (in press) identifies a significant effect of information structure in the Old Saxon *Hêliand*, a translated gospel harmony written in alliterative verse (see also Walkden 2014). However, the number of examples in Old High German is relatively low, especially for new objects, which makes it difficult to draw any

definitive conclusions. One of the reasons for the low number of examples is that periphrastic verb forms have not yet fully developed in Old High German. The majority of the examples is a combination of a modal verb with an infinitive, and the transitive present perfect is only sparsely attested. (cf. Speyer 2018a for an overview of the development of periphrastic verb forms). The selection procedure may be one of the reasons why no information structure effect is detected, because only includes subclauses with two verbs are included. Further research on main clauses with two verbs, or subclauses with one verb might provide a more conclusive picture.

However, the data raise the question whether OV/VO variation was ever governed by information structure in the same way as in early Dutch and Low German at all, as Middle High German does not show a significant information structure effect either. It was shown in Struik & Schoenmakers (2021) and Struik (2021) that information structure plays a significant role in the positioning of the object in Middle Dutch and early Low German. The results in Struik (2021), Struik & Schoenmakers (2021) show a similar trend: given objects strongly prefer OV word order, while new objects may freely occur in VO order. The direction of the effect is the same in Middle High German, new objects appear more freely in VO order, but at reduced rates compared to Dutch and Low German. This is especially surprising considering the periodization of the language. Middle Dutch was spoken between 1150-1500, and Middle Low German between 1350 and 1500. Middle High German is dated between 1050-1350, and hence represents a historically earlier corpus.

From a geographical and phylogenetical perspective, High German is located in a peripheral position. The dialect group that would eventually become High German is frequently considered to reconstruct to one subbranch of West Germanic: Elbe Germanic or Irminonic, at the exclusion of the North Sea Germanic or Ingvaeonic subgroup, subsuming Old English and Old Saxon, and the Istvaeonic or Franconian subgroup, subsuming Old Franconian (Harbert 2006). The Germanic tribes that spoke Elbe Germanic were located around the lower and middle Elbe, and extended their territory south to southern Germany, at the expense of the Latin speaking Romans. The tribes had East Germanic speakers to their east, and speakers of Franconian on their West (Robinson 1993). It may be the case that this peripheral position in the West Germanic language family results in a different OV/VO distribution in relation to information structure in comparison to Dutch and Low German. The OV/VO variation that is observed in Old and Middle English is again different in nature from that observed from Dutch and Low German. In Old English, only given object surface in OV order, whereas new objects hardly ever do so (Struik & van Kemenade 2020, 2022).

However, the number of new objects is fairly low in the Middle High German dataset, especially in a postverbal position. Additional data may

provide a more conclusive picture on the effect of information structure on object position. The overall frequency of postverbal constituents, however, suggests that VO is already well on its way to being lost. Again, the lack of conclusive data on Old High German makes it difficult to draw definitive conclusions about the diachronic change from a language with OV/VO variation to a strict OV language. However, the general observation that new objects surface more freely in the few VO examples that are available suggest that information structure may have played a more significant role in Old High German, but that this is blurred by the limitations of the available materials.

6 Deriving OV/VO variation in early High German

The present section turns to the consequences of the results presented in section 4 for an analysis of early High German word order variation. There are three logical possibilities for the derivation of OV/VO variation:

(10) a. Basic OV with rightward extraposition
b. Variation in headedness of VP: OV and VO are base-generated
c. Basic VO with leftward movement

It was already established in the discussion in section 2.1. that there are no clear indications for (10b), as there are no postverbal pronouns or particles and that the character of early High German is generally that of an OV language, but one which allows more flexibility in the placement of constituents. The data presented in section 4 on the basis of direct objects alone do not suggest that that observation should be revised; the majority of the objects appear in OV word order, especially in Middle High German. The influence of information structure turns out to be inconclusive for Old High German, but the Middle High German data suggest that VO word order is the result of information status of the object in combination with weight: new objects and heavier objects appear more freely in VO order. However, I argue that deriving VO by extraposition from an OV base is impossible on theoretical and empirical grounds, whereas an analysis in terms of leftward movement from a VO base is a better alternative.

6.1 VO as extraposition

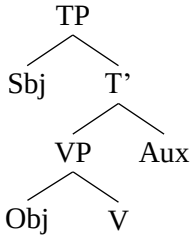
The data seem to suggest that early High German was already an OV language, in which VO word order is derived by rightward movement from a head-final base, as proposed by earlier analyses of early High German word

order variation (Axel 2007; Lenerz 1984; Sapp 2014, 2016). The syntactic status of extraposition is mostly left implicit, however, and may be movement to VP or TP. It is therefore not clear how extraposition accounts for the full range of word order variation illustrated in (1) and (2).

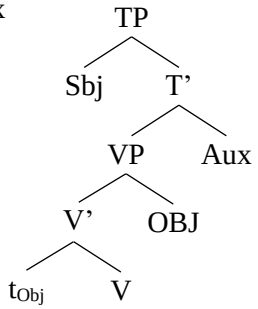
However, as Struik (in press) has pointed out, rightward adjunction to VP is ruled out on theoretical as well as empirical grounds. First, adjunction to VP would derive the unattested V-O-Aux word order in clauses with more than one verb, as the auxiliary must be located in a higher projection to the right of V under the assumption that early German is head-final in both VP and TP, as illustrated in (11a-b).

(11)

a.

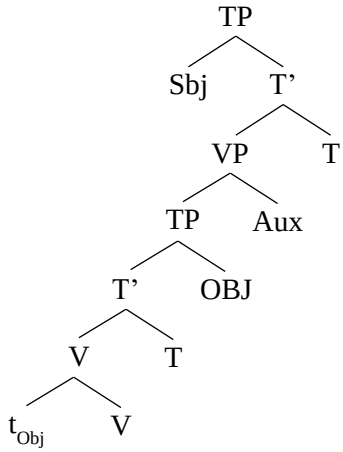


b. *V-O-Aux



Adjunction to TP likewise derives the ungrammatical V-O-Aux order if a biclausal structure of multi-verb clauses is assumed, as illustrated in (12) (cf. Biberauer & Roberts 2005; Struik in press; Walkden 2014). The auxiliary is base-generated as a V-head with its own functional structure and takes a TP containing the main verb and object as its complement.

(12)



In such a scenario, it must be assumed that extraposition is delayed until the verbal complex is formed, but there is no clear theoretical rationale for such an assumption (see Koster (2000) for a similar argument).

An analysis in terms of VO as extraposition from an OV base raises further questions on how Aux-O-V orders are derived. In head-final approaches, these orders would be considered cases of Verb Projection Raising (VPR, Haegeman 1992; Haegeman & van Riemsdijk 1986), an operation which extraposes the entire VP and adjoins it to the higher verb. It is not clear what the status of VPR is in early High German. Tomaselli (1995) argues that Aux-O-V clauses may be analyzed as involving V-to-T movement into the head of a head-initial TP. However, as Axel (2007) convincingly shows, there is hardly any empirical evidence for such an analysis. For instance, it is unclear how a sentence such as (13) should be derived, since multiple XPs before the finite verb are unexpected if the verb is in T

(13) odho uuir noh sculim siin quhemandes biidan
or we still should his coming await
'or if we should still await his coming'
(I 434, adapted from Axel 2007, p. 99)

Instead, she proposes that (13) is a case of rightward movement of the VP, including the object, although she does not provide a detailed derivation.

VPR is generally considered a verb cluster variant in literature on modern languages (Wurmbrand 2006). However, the syntactic status of verb clusters in early Germanic is unclear. Coupé and van Kemenade (2009) show that Old Germanic modals are always finite and never occur in non-finite form – a prerequisite for longer verb clusters. This suggests that the status of VPR in

early German is different from VPR in present-day languages.[3] In addition, objects in Aux-O-V order pattern more like given objects than new objects in early Low German (Struik in press) and English (Struik & van Kemenade 2020, 2022). These results cannot be replicated for Old High German on the basis of the present dataset, as there is no clear pattern in Old High German to begin with, and Aux-O-V has largely been lost from the language by the Middle High German period. However, it suggests that VPR as a rightward movement process is not motivated by the information status of the object, and would have to be considered rightward movement that is different from rightward movement which results in VO.

The results presented in section 4 suggest that information structure plays only a minor role in Middle High German object placement. The pattern that emerges is that new objects appear more freely in VO order than given objects, but because of the low overall number of VO objects this did not result in a significant effect. Instead, only weight turned out to be significant. Under an extraposition approach to VO order, it must be assumed that extraposition is only allowed under particular circumstances, but is in fact dispreferred, as only a small number of objects appear in VO. This is hard to incorporate in a modern generative/Minimalist derivation, in which all movement must be a feature-driven (Chomsky 1995). There is no indication of what that feature might be and why it is located on the TP associated with the finite verb.

Rightward movement from an OV base does not make the right predictions regarding word order in historical High German. The most important argument against an analysis of VO as extraposition is that it derives the ungrammatical V-O-Aux order unless it is assumed that extraposition is delayed until the auxiliary is merged. At the same time, it is unclear what triggers extraposition or why in some cases the entire VP extraposes. In what follows, I will demonstrate that an antisymmetric analysis, in which rightward movement is ruled out by definition, derives all word order patterns in a uniform way.

6.2 OV is derived from VO

The present section lays out an antisymmetric analysis (in the spirit of Kayne 1994) of historical High German word order variation, which is similar to the analysis presented in Struik (in press) for early Low German. An antisymmetric analysis entails the assumption of a uniform spec-head-complement configuration for all phrases in historical high German. This means that all phrases are head-initial and that the underlying word order in

[3] Haegeman and van Riemsdijk 1986 demonstrate that the status of VPR in Old English is substantially different from VPR in present-day West-Flemish.

VP is VO. This is a theoretical assumption, and not a commitment to historical High German as a VO language in terms of surface word order phenomena. The 'OV' nature of historical High German is the result of leftward movement operations which derive the surface variation.

Petrova (2009) and Petrova and Hinterhölzl (2010) also present an analysis of historical High German in terms of leftward movement from a VO base. However, their approach relies heavily on the existence of dedicated landing sites for information-structurally marked material. The derivation is given in (14).

(14)

$[_{CP}$ Background $[_{FocP}$ ContrFocus Vfin $[_{AgrP}$ NewInformFoc $[_{VP}$ t_V XP]]]]

(Hinterhölzl & Petrova 2018:285)

Crucial in their approach is movement of the finite verb to the head of a FocP in the middle field between CP and VP (following Hinterhölzl 2004), and higher than the checking projections for arguments. Hinterhölzl and Petrova do not provide empirical evidence for verb movement, but argue that it splits the focus domain into a position reserved for contrastively focused objects, immediately adjacent to the finite verb, and a domain reserved for new information focus, which also includes the finite verb. Whenever a constituent is not focused, it moves to the background domain above FocP, such as the Wackernagel position or topic positions in the left periphery.

The framework by Hinterhölzl and Petrova (2018) in (14) assumes a strict correlation between the information status of a constituent and its position in the clause. Objects obligatorily move to the object checking position (AgrP in (14)), but only focused objects may remain there. Contrastively focused constituents and backgrounded constituents must move to the contrast domain (in Spec,FocP) and the background domain (somewhere above FocP) respectively. The data in section 4 demonstrate that the mapping between the information status of the object and its syntactic position is far from categorical. In addition, it is unclear from the analysis in (14) how the focus domain is identified in clauses with a non-finite verb, as focused constituents are presumably part of the new-information focus domain in Hinterhölzl and Petrova's data.

The analysis laid out here does not assume dedicated information structural positions in the clause. It largely follows the derivation of Low German object placement in Struik (in press) and is compatible with analyses in Biberauer and Roberts (2005) and Struik and van Kemenade (2022) of Old and Middle English. The analysis is built on the observation that the full range of word

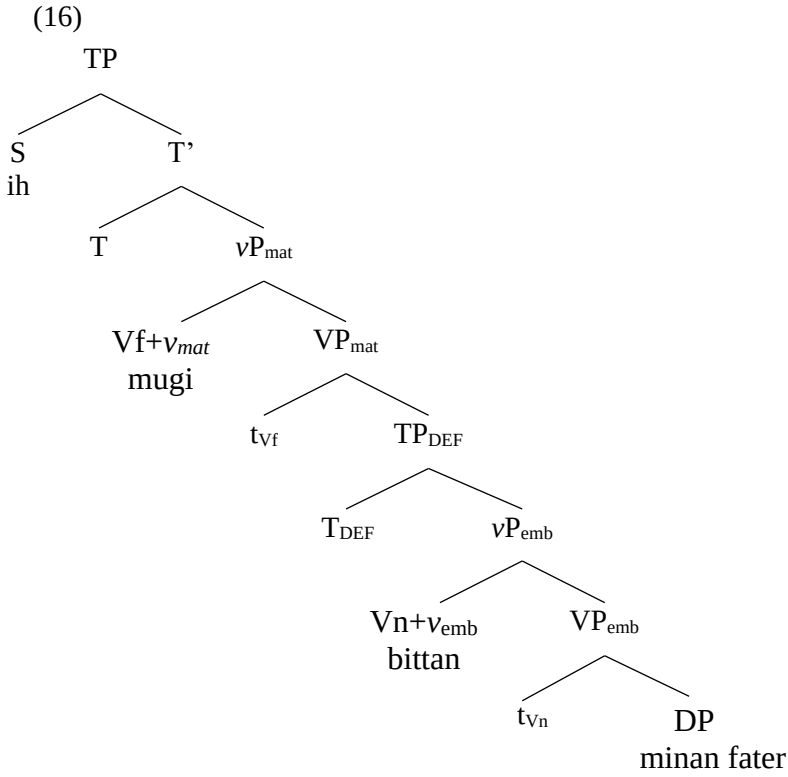
order variation attested in historical High German, as was illustrated in (1) and (2), can be derived by optional pied-piping of the object, and by optional movement of the functional structure associated with the main verb to a position above the finite verb, which has moved to *v*. Struik assumes that auxiliaries project their own functional structure and take a defective TP_{DEF} complement, containing the object and the non-finite main verb. The derivation of a basic historical High German Aux-V-O clause, as in (1c), repeated here as (15), is illustrated in (16).

(15) thaz ih ni mugi *bittan* **minan** **fater**,
that I not may ask my father
'that I may not ask my father'

(Tatian 185)

The various OV word order patterns in (1) and (2) are derived by movement of the object to Spec,*v*P in (16) The object may move on its own or pied-pipe as part of the larger VP containing it. Pied-piping of the VP results in verb-final order: any VP-internal material will surface in preverbal position. Movement of only the object results in leaking structures. This approach straightforwardly derives Aux-O-V word order. In this case, the object moves to spec,vP_{emb}. O-Aux-V is derived by movement to the higher *v*P in (16), Spec,vP_{mat}.

(16)

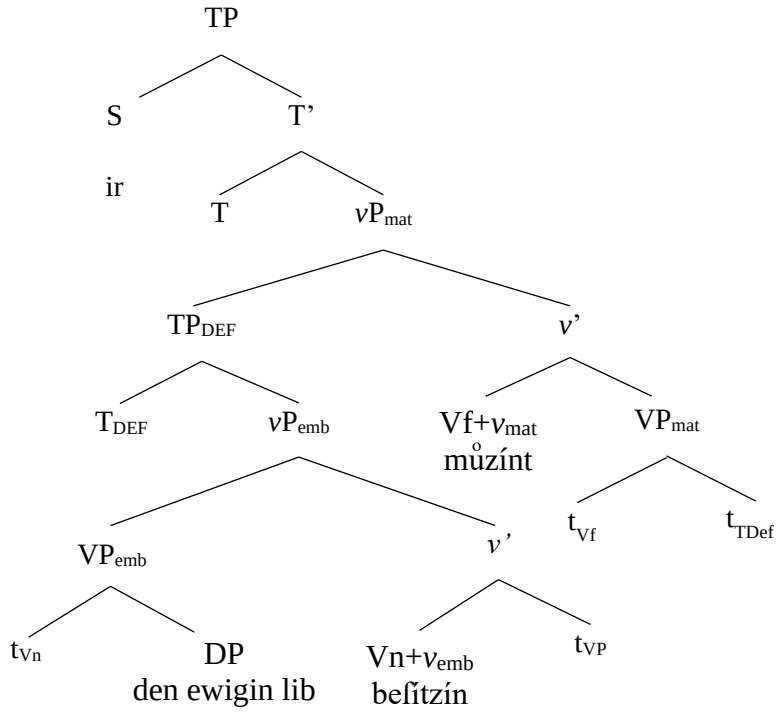


O-V-Aux word order is derived by movement of the lower structure associated with the main verb to a position above the finite verb. The precise derivation depends on the underlying assumptions about the position of the finite verb, and the size of the structure that is raised to a higher position. The analysis in Biberauer and Roberts (2005) assumes that the finite verb is located in T, and that vP_{emb} is raised to Spec,TP to satisfy the EPP constraint on T. However, Axel (2007) shows that there is no evidence for V-to-T in Old High German subclauses, so I assume that the verb does not raise higher than *v* (but see Weiβ 2006 and the discussion in Petrova & Weiβ 2018 for an analysis which does involve V-to-T). In Walkden (2014)'s analysis of Old Saxon word order variation, VP_{mat} raises to Spec,*v*P, possibly as a parallel to VP_{emb} movement to spec,vP_{emb}, although he does not motivate this operation. Struik and van Kemenade (2022) suggest that V-Aux word order in Old and Middle English is a defocusing strategy, and argue that the lower TP_{DEF} raises to Spec,vP_{mat} as an information-structurally motivated parallel to object movement to derive OV word order. Sapp (2011) argues that focus also plays a role in the order of verbal complex. Pending a more detailed analysis of the

position of auxiliaries and the precise analysis of the size of the constituent that raises to the matrix clause, I will follow Struik (in press) and Struik and van Kemenade (2022) in the assumption that T_{DEF} raises to Spec,*v*P to O-V-Aux orders as in (2a), repeated here as (17). This is illustrated in (18).

(17) daz ir **den ewigin lib** beſítzín mů̊zínt
that you the eternal life possess may
'that you may have eternal life'
(Mitteldeutsche Predigten, 6ra,8)

(18)



The derivation of V-Aux-O is less straightforward. In Struik's (in press) analysis, information structure is not an integral part of syntax (contra analyses of V-Aux-O order as Heavy NP Shift to a dedicated FocP, such as Walkden 2014; Wallenberg 2009, 2015). Struik (in press) argues that in Low German, the surface position of the object is determined at the interfaces. After each movement, a copy of the moved constituent is left behind and upon completion of the *v*P phase, material is sent to the interfaces, which determine which copy is spelled out. The object will be spelled out in its highest position, Spec,*v*P, unless information structural or prosodic requirements allow Spell Out in a lower position (see Hinterhölzl 2015 for a similar approach). This

approach rules out V-O-Aux orders if the Radical Spell Out analysis of Biberauer & Roberts (2005) and Struik and van Kemenade (2022) is on the right track. They adopt a phase-based approach and argue that only material that is located in the specifier of the head of *v* remains available after the *v*P phase is completed. This means that anything that is stranded in a lower position is transferred to PF, freezing it in place. Spell-out of the object in its lowest position will result in linearization in clause-final position.

This approach has the advantage that it is easy to incorporate a second type of variation in object placement: middle field scrambling. This is still a common operation in Present-day German and is generally considered to involve leftward movement to a higher position in the middle field, crossing adverbials, negation or indirect objects and subjects (Frey 2004). This variation is motivated by several grammatical and pragmatic constraints, such as animacy, agentivity and definiteness (Fortmann & Frey 1997; Lenerz 1977; Reis 1987; Zubin & Köpcke 1985). In addition, it has been argued that information structure plays a role as well. Scrambling typically obeys the given-before-new principle, and given objects are more likely to scramble than new objects in standard German (Frey 2004; Meinunger 2000; Musan 2002, but see Struckmeier 2017). It is not clear what the status of scrambling is in historical High German, although examples such as (19) suggest that it is at least a syntactic option:

(19) daz ich **die** **engel** alle tag han horē ſingē
that I the angels all day have hear sing
'that I have heard the angel sing all day'
(Engelthaler Schwesternbuch, 72a,8-9)

Speyer (2018b), based on much of his earlier work, explores the serialization of indirect and direct objects in historical High German. He argues that direct object and indirect object permutation is an early New High German innovation and that the order of indirect object and direct object was relatively fixed before that. Crucially, information status does not seem to play a role in Old High German and Middle High German in the ordering of indirect and direct objects. Speyer remains neutral on the syntactic status of this variation, however. It is beyond the scope of this paper to interpret these findings in light of the present analysis, as it is still a matter of debate whether the basic word order is DO>IO or IO>DO even in Present-day German, and how the variation should be derived (see Müller 1999; Rothmayr 2006; Speyer 2015 for arguments and discussion).

It is, however, as yet unclear whether scrambling across adverbials in historical High German is in any way motivated by information structure. Struik and Schoenmakers (2021) demonstrate that there is a correlation between the loss of VO and a visible effect of information structure on

scrambling in Middle Dutch. They show that there is no significant effect of information structure on scrambling as long as VO is a productive option (until 1600). At that stage, most objects appear in scrambled order, regardless of their information status. As objects start to appear in OV order more frequently, the information structural division of the middle field into a given (before an adverbial) and a new (following an adverbial) domain becomes clearer. Once VO is lost, given objects strongly prefer the scrambled position, whereas new objects strongly prefer the unscrambled position. Struik and Schoenmakers (2021) analyse scrambling in Dutch as optional Spell Out in a high or low preverbal position (see Struckmeier 2017 for a similar proposal) in combination with optional Spell Out in VO order. As long as VO is still an option, objects are spelled out in either the highest Spell Out position or in VO order. As the option to spell out an object in VO order is lost, the Spell Out options are restricted to the two positions in the middle field.

The present dataset for Old High German is not sufficient to draw conclusions about the information structural status of scrambling. However, the majority of the Middle High German OV objects appear in scrambled order in clauses with an adverbial. There are only six new objects, but they surface in a position above the adverbial in all but one of the cases, as in (20).

(20) ſie zwene eínen kamph m̥ eín andˢ ſoldē
they two a battle with one other should
vechten
fight
'that they should fight a battle with one another'
(Leipziger Predigen A, 138va,38-39)

This suggests that in Middle High German, information structure does not yet play a crucial role in the positioning of objects in the middle field. In fact, it suggests that scrambling is obligatory, and that objects are by default spelled out in the highest object position, or in VO order. Further research is needed to determine the status of scrambling in historical High German, especially on early New High German, as this is the period when VO is lost from the language.

The analysis presented here has several advantages over the analyses that have been presented for historical High German thus far. First, it accounts for all attested word order patterns in a uniform way, without deriving the unattested V-O-Aux. Second, it provides a straightforward way of deriving information structurally and prosodically motivated, yet optional, word order variation by assuming that VO is the result of Spell Out of lower copies at the

interfaces, without the need for dedicated syntactic structure. Finally, it provides a natural transition from a language which marks information structure by means of OV/VO variation, with an information-structurally inert middle field, to a language which uses the placement options in the middle field to encode information structural relations.

7 Conclusion

The present article has revaluated the evidence for the claim that OV/VO variation is motivated by focus in Old High German and Middle High German. The approach differed from other studies in the materials that are included (direct objects only, in subclauses with two verbs) and in the annotation scheme (given-new versus focus). The results suggested that there is in fact no effect of information structure on the object position in Old High German clauses. A critical evaluation of the sample suggested that while this may in part be due to influence from Latin and rhyme, there is also no clear effect in prose clauses without a Latin model. The Middle High German data suggest that there is an effect of information structure; new objects surface more freely in VO order than given objects, which are generally OV. However, this effect is not more than a statistically weak pattern, as it failed to reach significance.

It was argued that the previous accounts of historical High German OV/VO variation do not adequately capture these facts. It was first of all argued that VO cannot be the result of extraposition, as it has no clear syntactic trigger and would derive the ungrammatical V-O-Aux word order. Second, movement of constituents into a dedicated focus or background domain is not able derive the apparent optionality of OV/VO variation, nor does it derive all attested word order patterns. Instead, it was argued that OV/VO variation in historical High German is the result of leftward movement and optional pied-piping of the object to preverbal position, leaving behind a copy in its base position. The Spell Out position of the object is determined at the interfaces, where it may be spelled out in postverbal position under the influence of information structure and grammatical weight.

CHAPTER 7
GENERAL DISCUSSION: TOWARDS A UNIFIED ANALYSIS OF DIFFERENCES AND SIMILARITIES IN EARLY WEST GERMANIC OV/VO VARIATION

1 INTRODUCTION

This thesis started from the observation that the modern West Germanic languages (with Dutch, German, and English as its main members) is characterized by a dichotomy in word order despite their phylogenetic relatedness: English is generally considered a VO language, whereas Dutch and German are considered OV languages. This difference is remarkable, the more so when considering that the historical stages of the languages allowed both OV and VO orders. This chapter presents a comparative discussion of the observations from the previous chapters to answer the general research question of this thesis, formulated in (1):

(1) Were these languages similar in their earlier stages and divergent, or were they already different and did they diverge even further?

Before we can formulate a theoretical answer to (1), we first need to understand how the variation is motivated. Word order variation in languages is rarely random, so the variability in object position in early Germanic raises the question what motivated it. The central hypothesis of this thesis is that early Germanic word order was to a (much) larger extent than the Present-day languages governed by information structure. The **EMPIRICAL AIM** of this thesis is to provide a cross-linguistic and diachronic overview of how information structure influences word order variation based on the following two research questions:

(2) What is the relation between information structure and object position in early English, Dutch, Low German, and High German?

(3) How does the mapping between object position and information structure change?

The answers to research questions 2 and 3 serve as input to fulfil the **THEORETICAL AIM** of this thesis, which is to develop an analysis which unifies the similarities between the West Germanic languages, but which

integrates the cross-linguistic variation and diachronic change that is observed in early West Germanic.

The corpus studies presented in the previous chapters focused on answering questions (2) and (3) for each individual language. Chapters 2 and 3 demonstrated that in the history of English, OV word order is strongly associated with discourse-given objects, although given objects also occur in VO word order. New objects, on the other hand, only appear in VO word order. Chapter 4 on Middle Dutch and Chapter 5 on Old Saxon and Low German show a different picture. In these languages, the variation is also governed by information structure to a certain extent, but in a different direction. In early Dutch and Low German, VO word order is strongly associated with discourse-new objects. Given objects appear in OV word order unless they are heavy. While the data in Chapter 6 on Old High German turned out to be inconclusive, the Middle High German suggest that High German patterns with Dutch and Low German.

The main empirical findings from the previous chapters show many similarities in terms of word order patterns, but also some crucial differences with regard to the motivation behind OV/VO variation and the diachronic trajectories of the West Germanic languages. These findings are summarized and contrasted in section 2. Section 3 focusses on the theoretical implications of the findings. It presents a unified analysis of early West Germanic, which allows diversification between the individual languages and provides a framework for the loss of OV from English, and VO from Dutch and German. Section 4 discusses the limitations of the studies in this thesis, as well as its implications and avenues for future research.

2 Early West Germanic as discourse-configurational

The debate on the status of OV/VO variation in the early West Germanic languages has recently shifted from a narrow focus on the formal syntactic analysis of these languages to explaining the variation, with the influence of information structure at its core. Understanding the motivation behind the variation not only helps to gain insight into the syntactic structure of individual languages, it also detects differences and similarities among the West Germanic languages.

The influence of information structure has received considerable attention in the literature on OV/VO variation in each stage of the individual languages (Bech 2001; de Bastiani 2019; Taylor & Pintzuk 2012a on Old English; Blom 2002, Coussé 2009 on Middle Dutch; Hinterhölzl & Petrova 2018, Sapp 2014, 2016 on Old and Middle High German; Walkden 2014 on Old Saxon to name but a few). However, each study adopts its own assumptions about the structural analysis of the languages, which in turn feed the selection criteria in

corpus studies. In addition, each study uses its own definition of information structure and corresponding annotation scheme. While most of the studies subscribe to some form of the idea that given objects are more likely to be preverbal and new objects more likely to be postverbal, their outcomes are not readily comparable and do not yield a detailed picture of West Germanic OV/VO variation with regard to differences and similarities.

This thesis sought to fill this lacuna by conducting comprehensive corpus studies on the Old and Middle stages of all the major West Germanic languages (English, Dutch, and German), using a unified selection and coding scheme. The subcorpora include subclauses with a finite verb, a non-finite verb (excluding *to*-infinitives and cases of *to be*) and a direct object only. The main argument to focus on subclauses with two verbs is to abstract from finite verb movement to the left periphery. A second reason to include two verbs is that Present-Day English differs from Dutch and German in that it does not allow V-Aux orders; these are lost around the 12th century. It was argued that in Old English the order of the finite verb and the non-finite verb are correlated with the way information structure determines object position (Taylor & Pintzuk 2012a). The status of Aux-V/V-Aux variation in correlation with object placement is not an issue in literature on OV/VO variation in earlier German and Dutch, as the Present-day languages still allow both orders.

The "O" in earlier literature on OV/VO variation is in most cases more than just the direct object, and often includes anything that may surface in a position preceding or following the verb, including subjects and adjuncts. The grammatical function of each of these categories is different, however, and may be subject to different syntactic constraints. Direct objects, indirect objects and subjects are arguments of the verb, whereas adverbial PPs and adverbs are adjuncts. Not every verbal argument is the same either; subjects, indirect objects and direct objects are 1) assumed to be base-generated in different positions, 2) have their own grammatical function, 3) are subject to different movement constraints. The "O" in OV/VO variation in this thesis is restricted to nominal direct objects only, to avoid confounding effects resulting from differences in grammatical status of other constituents.

The sample of direct objects is restricted to referential objects only. While quantified and negated objects are non-referential by definition from the perspective adopted here, they are also excluded because of their exceptional status in early English, where they are allowed in preverbal position for centuries longer than nominal objects, which suggests that their syntactic status is different (Pintzuk & Taylor 2006). Pronouns are excluded, as these are generally preverbal in all of the early language stages.

The information status of the objects was annotated using a simplified version of the Pentaset (Komen 2013), which labels objects according their referential and anaphoric status resulting in a binary GIVEN (= referential +

anaphoric) vs. NEW (= referential + non-anaphoric) annotation scheme. The objects labelled with the Pentaset labels IDENTITY, INFERRED and ASSUMED are all anaphoric, and pattern alike (see also Taylor & Pintzuk 2014). They are hence collated into one category GIVEN. Non-referential objects are labelled INERT AND excluded from the analysis. In addition, objects are annotated for object WEIGHT. The following subsections summarize the main findings on information status for each individual language.

2.1 Old and Early Middle English

Chapter 2 (re)examines Old English (from the O2 and O23 period, 850 – 1050) with regard to information structure. In Chapter 3 these findings were revised slightly, summarized in Table 1, and substantiated with data from Early Middle English (1150 – 1250), summarized in Table 2.

	AUX-O-V	**AUX-V-O**	**O-AUX-V**	**O-V-AUX**	**V-AUX-O**	**TOTAL**
GIVEN	284	125	34	122	23	588
	48.3%	*21.3%*	*5.8%*	*20.7%*	*3.9%*	
NEW	5	116		2	11	134
	3.7%	*86.6%*		*1.5%*	*8.2%*	
TOTAL	289	241	34	124	34	722
	40.0%	*33.7%*	*4.7%*	*17.2%*	*4.7%*	

Table 1. Distribution of given and new objects across word orders in native Old English.

The results in Table 1 and 2 show a very clear pattern: given objects occur freely in OV order, whereas new objects hardly do so. In OE, 440 out of 588 (74.8%) given objects are preverbal, compared to 7 out of 134 (5.2%) new objects. New objects no longer occur in preverbal position in early Middle English. Given objects still occur freely in preverbal position, although there is a reduction in the overall frequency of given preverbal objects, 109 out of 214 (50.9%). Both given and new objects appear in VO order.

	AUX-O-V	**AUX-V-O**	**O-AUX-V**	**O-V-AUX**	**V-AUX-O**	**TOTAL**
GIVEN	96	100	9	4	5	214
	44.9%	*46.7%*	*4.2%*	*1.9%*	*2.3%*	
NEW		54			3	57
		94.7%			*5.3%*	
TOTAL	96	154	9	4	8	271
	35.4%	*56.8%*	*3.3%*	*1.5%*	*3.0%*	

Table 2. Distribution of given and new objects across word orders in early Middle English.

Turning to the order of V and Aux, Table 1 and Table 2 show that O-Aux-V and V-Aux-O are minority patterns throughout Old and Early Middle English. In Aux-V configurations the object most frequently surfaces before or after the verb, but rarely higher than V. V-Aux orders are most frequently combined with OV word order. It should also be noted that there is a very sharp decline in the number of V-Aux clauses; O-V-Aux is a productive pattern in OE, but there are only 4 examples in the eME dataset. The loss of V-Aux is independent of the loss of OV; OV word order is still productive in Aux-V clauses in eME.

2.2 Middle Dutch

The focus of Chapter 4 was to trace the correlation between the loss of VO and the establishment of the middle field as the locus of information structure encoding. For the purpose of the article on which Chapter 4 is based, the correlation with Aux-V and V-Aux is not reported there. To allow for a detailed comparison with English and German, I will do so here in Table 3, and leave a discussion of the correlation between OV/VO variation and scrambling until section 3.3. There is no substantial record of Old Dutch/Old Low Franconian, but Middle Dutch is attested in a large number of (mostly) legal documents. The data in Table 3 is based on material from between 1250 and 1600.

	AUX-O-V	**AUX-V-O**	**O-AUX-V**	**O-V-AUX**	**V-AUX-O**	**TOTAL**
GIVEN	14	56	219	441	34	764
	1.8%	*7.3%*	*28.7%*	*57.7%*	*4.5%*	
NEW	3	75	*22*	86	70	256
	1.2%	*29.3%*	*8.6%*	*33.6%*	*27.3%*	
TOTAL	17	131	241	527	104	1020
	1.7%	*12.9%*	*23.6%*	*51.7%*	*10.2%*	

Table 3. Distribution of given and new objects in Middle Dutch.

Given and new objects both appear in OV and VO orders, although there is a strong dispreference for given objects to appear in VO word order; 674 out of 764 (88.2%) of the given objects surface in OV order. New objects appear in VO word order much more freely; 145 out of 256 (56.7%) of the objects surface in VO word order. The vast majority of the objects surface either preceding or following the verbal complex, and rarely occur in Aux-O-V order.

2.3 Old Saxon and Middle Low German

Chapter 5 (re)examines the influence of information structure on object position in the Old Saxon *Hêliand*, one of the few remaining major texts of the time period. In addition, it is able to provide a diachronic perspective on the transition from Old Saxon to Middle Low German with regard to OV/VO variation by the inclusion of previously unstudied Middle Low German material. The findings are summarized in Tables 4 for Old Saxon and Table 5 for Middle Low German.

Table 4 indicates that, while objects surface in OV order in the majority of the cases (124 out of 153), there is a clear difference in the position of given and new objects. 111 out of 130 (85.4%), of the given objects appear in OV order, but the position of new objects is variable; 12 out of 23 (43.5%) of the latter objects surface in VO order. The Middle Low German data in Table 5 show a continuation of this pattern: 243 out of 300 (81%) of the objects surface in preverbal position, but new objects may occur more freely in VO order. Given objects surface in preverbal position in 222 out of 249 (89.2%) of the cases, whereas new objects do so in 21 out of 51 (41.2%) of the cases.

	AUX-O-V	**AUX-V-O**	**O-AUX-V**	**O-V-AUX**	**V-AUX-O**	**TOTAL**
GIVEN	30	12	27	54	7	130
	23.1%	*9.2%*	*20.8%*	*41.5%*	*5.5%*	
NEW	3	6	2	8	4	23
	13.0%	*26.1%*	*8.7%*	*34.8%*	*17.4%*	
TOTAL	33	18	29	62	11	153
	21.6%	*11.8%*	*19.0%*	*40.5%*	*7.2%*	

Table 4. Distribution of given and new objects across word order in the Old Saxon *Hêliand*.

	AUX-O-V	**AUX-V-O**	**O-AUX-V**	**O-V-AUX**	**V-AUX-O**	**TOTAL**
GIVEN	13	23	106	103	4	249
	5.2%	*9.24%*	*42.6%*	*41.4%*	*1.6%*	
NEW	5	24	6	10	6	51
	9.8%	*47.1%*	*11.8%*	*19.6%*	*11.8%*	
TOTAL	18	47	112	113	10	300
	6.0%	*15.7%*	*37.3%*	*37.7%*	*3.33%*	

Table 5. Distribution of given and new objects across word orders in Middle Low German

There is a diachronic difference in the correlation between OV/VO variation and Aux-V/V-Aux variation. While there does not seem to be a difference in the effect of information structure on OV/VO variation in Aux-V as opposed to V-Aux clauses in neither Old Saxon (contra Walkden 2014)

nor Middle Low German, we do note a shift in the surface position of the objects. Aux-O-V is a relatively frequent pattern in Old Saxon, but shrinks to minority pattern status in Middle Low German. At the same time, the frequency of O-Aux-V clauses increases. The position of preverbal Aux-V objects thus shifts from a position between the auxiliary and verb to a position above the complex verb without a change in its information structural status.

2.4 Old and Middle High German

Chapter 6 studies the effect of information structure on OV/VO variation and its diachronic trajectory from Old High German (750-1050) and Middle High German (1050-1350). The findings are summarized in Table 6 for Old High German and Table 7 for Middle High German.

Table 6 shows that there is a slight preference for OV word order in Old High German (41 out of 71 objects are preverbal), but there is no correlation between information structure and word order (contra Hinterhölzl & Petrova 2018, Petrova 2009). Given objects are preverbal in 33 out of the 57 (57.9%) cases, whereas new objects are preverbal in 8 out of 14 examples (57.1%). The quality of the OHG dataset has been questioned, however, as it mostly contains translations from Latin or verse texts (Axel 2007, Fleischer 2006). Chapter 6 explored possible influence of Latin and poetic constraints on the position of the object, but this did not result in a conclusive picture, as the sample of (presumably) unambiguous OHG material is very small.

	AUX-O-V	**AUX-V-O**	**O-AUX-V**	**O-V-AUX**	**V-AUX-O**	**TOTAL**
GIVEN	6	19	10	17	5	57
	10.5%	*33.3%*	*17.5%*	*29.8%*	*8.8%*	
NEW	2	4	1	5	2	14
	14.3%	*28.6%*	*7.1%*	*35.7%*	*14.3%*	
TOTAL	8	23	11	22	7	71
	11.3%	*32.4%*	*15.5%*	*31.0%*	*9.9%*	

Table 6. Distribution of given and new objects across word order in Old High German

	AUX-O-V	**AUX-V-O**	**O-AUX-V**	**O-V-AUX**	**V-AUX-O**	**TOTAL**
GIVEN	3	3	59	70	17	152
	2%	*2%*	*38.8%*	*46.1%*	*11.2%*	
NEW	3	3	10	7	9	32
	9.4%	*9.4%*	*31.3%*	*21.9%*	*28.1%*	
TOTAL	6	6	69	77	26	184
	3.3%	*3.3%*	*37.5%*	*41.8%*	*14.1%*	

Table 7. Distribution of given and new objects across word order in Middle High German

The Middle High German data show an overall preference for OV word order; 152 out of 184 objects (82.6%) are preverbal. Given objects strongly prefer preverbal position: 132 out of 152 objects (86.8%) are preverbal, whereas new objects appear more freely in VO order: 12 out of 32 objects (37.5%) are postverbal. However, Chapter 6 demonstrated than once constituent weight is controlled for, there is no significant effect of information structure.

While the exact effect of information structure and its diachronic trajectory are hard to interpret on the basis of the material that is available, the correlation with Aux-V/V-Aux variation shows two clear patterns. First, in Middle High German, VO order is more frequent in V-Aux constructions. In fact, Aux-V-O has virtually been lost with both given and new objects. Second, like in Low German, Aux-O-V order was reduced substantially, while O-Aux-V orders increase.

2.5 Discussion: differences and similarities

Now that we have provided an answer to research questions (2) and (3), we may venture to answer the main question in (1): were these languages similar in their earlier stages before they started to diverge, or were they already different and did they diverge even further? The answer to that question is not so, as the languages show both similarities and differences.

The languages are similar in allowing the same variation in the order of a finite verb, a non-finite verb, and a direct object at comparable frequencies in their earliest attested stages. Another similarity is that the variation is sensitive to information structure in all languages. However, its effect does not play out in the same way in each language. Dutch and Low German pattern similarly. There is a strong preference for given objects to surface in OV word order, although VO is allowed with given objects, especially when the object is heavy. New objects appear in both OV and VO word order. The data from High German were inconclusive, but the results suggest that it patterns with Dutch and Low German to the extent that new objects appear more freely in VO order. This demonstrated that in Dutch and German OV is pragmatically neutral, whereas VO is associated with discourse-newness. The results are in sharp contrast with the variation in historical English. Old English displays a very strong dispreference for new objects in OV word order, and there are no new OV objects in early Middle English. Given objects appear in OV word order, but also in VO word order. In English, VO is pragmatically neutral, whereas OV is associated with discourse-givenness.

These findings show that while the variation in the historical West Germanic languages is superficially similar – they allow OV/VO variation at comparable frequencies in their earliest stages – there are clear differences in

how this variation is motivated. In fact, it seems that underneath the surface the languages already display a distinction between a "VO"-type language (English) and "OV"-type languages (Dutch, High German, and Low German). This difference is illustrated in Figure 1.

Figure 1. The effect of information status on word order in English vs. Dutch and German

In Old and Middle English, VO is pragmatically neutral, whereas OV word order is information-structurally motivated; only givenness may lead to OV word order in historical English. In Dutch and German, the situation is reversed. OV word order is pragmatically neutral, but VO is pragmatically motivated; newness (and heaviness) may lead to VO word order in historical Dutch and German.

A second difference between English on the one hand and Dutch and German on the other is the position of the preverbal object within Aux-V sequences. Section 2.1 demonstrated that the object occurs between the finite verb and non-finite verb at a very productive rate in both Old English and early Middle English, but this becomes a minority pattern after the 13th century, in line with the general loss of OV orders. O-Aux-V, on the other hand, was always a minority pattern. Present-day Dutch and German are OV languages, yet they do not allow Aux-O-V word order (in non-V2 contexts). The results in sections 2.3 and 2.4 demonstrate that it was a productive option in the earliest stages of German. Middle Low German and Middle High German already show a substantial reduction in the frequency of Aux-O-V. Similarly, Aux-O-V is rarely attested in Middle Dutch.[1] It is unclear what the status of Aux-O-V is in earlier Dutch, as there is no data from before 1200. While the frequency of Aux-O-V orders is reduced strongly in German, O-Aux-V orders increase in frequency. In fact, in both High German and Low German, O-Aux-V increases to the point of becoming one of the most frequent

[1] The few examples that do occur originate from Western-Flanders. The present-day dialect spoken in that region still allows interruption of the verb cluster to some extent (Haegeman & van Riemsdijk 1986).

patterns, together with O-V-Aux. Similarly, in Middle Dutch O-Aux-V is one of the majority patterns.

Let us now turn to the theoretical implications of these findings. The results in this section show that while there is similar variation in the historical stages of all West Germanic languages, the differences between English on the one hand and Dutch and German on the other are already visible underneath the surface. However, I argue that this does not imply a radically different analysis of the syntactic similarities in the early language stages. Instead, I argue in the next section that the variation within and between the languages falls out naturally in an antisymmetric analysis, in which word order patterns are derived by leftward movement of (pied-piped) constituents.

3 Towards a unified analysis: Antisymmetry in West Germanic

The theoretical aim of this thesis was to provide a unified analysis of OV/VO variation in early West Germanic. The results presented in section 2 demonstrate that the languages are syntactically similar in their earliest stages, as they allow similar word order variation patterns. The fact that the variation is motivated differently may invite an analysis of English as VO with leftward movement to derive OV and of Dutch and German as OV with rightward movement to VO. However, analysing the variation in this way raises the conceptual question why languages which are phylogenetically so closely related require radically different analyses to account for variation that seems so similar syntactically.

It is generally assumed that the basic word order in Proto-Indo-European was OV (Delbrück 1900; Hock 2015; Viti 2015, but see Pires & Thomason 2008 for a critical discussion regarding the validity of this observation). VO word order is attested as well, and studies on individual old Indo-European languages suggest that VO is motivated by pragmatic and prosodic factors such as length and emphasis (see for instance, West 2011 on Old Avestan). In addition, Sapp (2016) argues on the basis of evidence from Gothic that Proto-Germanic was OV as well and concludes that there is no shift in the headedness of VP from Proto-Germanic to Old High German. If the basic word order in Proto-Germanic was OV, this raises the question when (and why) English shifted to VO, especially because Old Saxon, which is the closest attested relative of Old English, did not undergo this shift. It may be the case that Old English shifted to VO in conjunction with the early North Germanic languages, which have been presumably VO (with optional OV) since the 9th century (Faarlund 2002). In early North Germanic, the motivation for OV/VO variation is motivated in a similar way to Old English; OV is strongly associated with discourse-givenness (cf. Hróarsdóttir 2009 on Old Icelandic; Tiemann 2019 on Old Norwegian). This may suggest that English

(and possibly Frisian) prior to the Viking conquest was more closely related to North Germanic than has been assumed so far. This may be an explanation for the similarities that Emonds and Faarlund (2014) identify between English and the North-Germanic language, although in the scenario suggested here the similarities are not the result of a radical replacement of West Germanic Anglo-Saxon by something like Anglicized Norse after the Old English period, but because of a longer period of shared development before the languages split into what is now assumed to be North Germanic and West Germanic.

The conclusion that a language is basic 'OV' or basic 'VO' is often based on the assumption that the most frequent order or the pragmatically neutral word order reflects the underlying word order in the VP, and that any other order is a deviation from this basic word order. However, it is not necessarily the case that the neutral order corresponds to the basic word order in the VP; the neutral word order may as well be a derived order (cf. Fuß 2018). Most studies on the 'basic' word order of early Germanic or Indo-European are only concerned with superficial word order patterns, rather than with the formal derivation of each pattern. VO is simply considered a deviation from the basic OV word order, usually in the form of extraposition to some position at the right edge of the clause. The precise derivation is often left implicit, although it is sometimes suggested that it is adjunction to head-final TP or VP (e.g. Sapp 2014, 2016).

Chapters 5 and 6 argued specifically against an analysis of VO as the result of rightward movement from an OV base in High German and Low German. It was argued that such an analysis is not tenable in clauses with a finite and non-finite verb: it derives the ungrammatical V-O-Aux order unless it is assumed that extraposition is delayed until the auxiliary is merged in what is assumed to be T, but this usually goes unmotivated. In addition, Aux-O-V receives an exceptional status as Verb Projection Raising in a head-final approach to Germanic word order variation. VPR is considered a form of verb clustering; it is rightward adjunction of the verbal projection to the finite verb. However, it is unclear what the status of VR or VPR is in early Germanic, as there is no unambiguous evidence for multi-verb clusters – these seem to be a Middle stage innovation (Coupé & van Kemenade 2009, Coupé 2015 on Middle Dutch; Jäger 2018 on Middle High German).

In the antisymmetric framework that is adopted throughout this thesis all languages are base-generated according to a spec-head-complement configuration and are hence structurally VO (Kayne 1994): OV word order is the result of leftward movement of constituents. Such an analysis can be applied straightforwardly to Old and Middle English. Chapters 2 and 3 demonstrated that Old and Middle English may be characterized as 'VO' languages on the basis of object position in interaction with information

structure. VO is the most frequent order and is pragmatically neutral in the sense that it freely features given or new objects. Chapters 4, 5 and 6 demonstrated that while Dutch and German have often been characterized as OV languages on the basis of the surface variation, all word order patterns can also be derived by leftward movement.

For all languages, it is assumed that all phrases are constructed according to a specifier-head-complement configuration, which essentially results in basic Aux-V-O order; deviations from this pattern are derived by optional pied-piping of the object to Spec,*v*P, and movement of the structure associated with V to a higher position in the clause. The major difference between English on the one hand and Dutch and German on the other hand lies in the way movement of the object is triggered. In early English, Spec,*v*P only attracts referential objects.[2] In Dutch and German, Spec,*v*P attracts all objects. In both languages, interface conditions determine the final Spell Out position of the object. In the remainder of this section, I will summarize the basic premises and derivations of the syntactic framework in section 3.1. Section 3.2 focuses on the integration of information structure in the framework, and more specifically, on the differences between the West Germanic languages. Section 3.3. relates OV/VO variation in Dutch and German to scrambling in the middle field.

3.1 A unified analysis

An antisymmetric framework of early Germanic OV/VO variation entails that all phrases are generated in a spec-head-complement configuration, and hence that phrases are head-initial by definition. The analysis largely follows the analysis developed in Biberauer and Roberts (B&R, 2005, 2006, 2008, see also Walkden 2014 and Wallenberg 2009 for similar proposals). The analysis is based on the assumption that OV is derived by feature-driven leftward movement to Spec,*v*P. Crucially, an object can move on its own, or alternatively, as part of the VP containing the object. V-Aux order is derived by leftward movement of the lower clause (i.e. the structure associated with the non-finite main verb) to Spec,*v*P of the finite verb.

The analysis deviates from that of B&R in some crucial respects, which are addressed in detail in chapter 3, and which I will briefly summarize here. B&R argue that auxiliaries always trigger restructuring in Old English, but they argue that the size of the non-finite complement may vary; in some cases

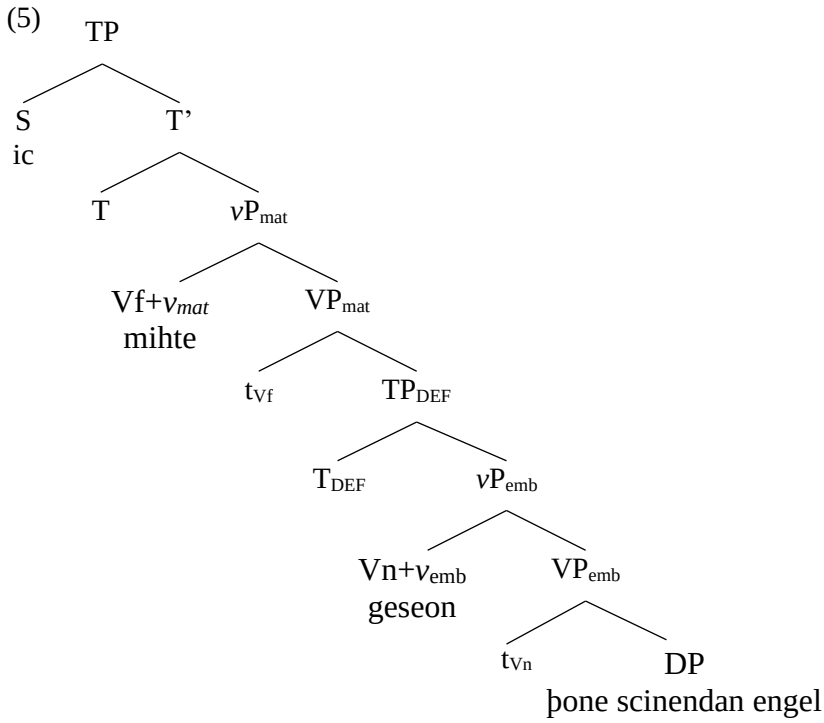
[2] Quantified and negated objects are also attested in preverbal position until the 16th century in early English (Ingham 2000, Pintzuk & Taylor 2006). It was argued in Chapter 3, section 4.3 that movement of quantified and negated objects is not triggered by the referentiality of the object, but by a feature located above *v*P.

the auxiliary selects a full, but deficient, TP, whereas in other cases the auxiliary may select a *v*P complement without a TP layer. B&R do not motivate this assumption, but it is crucial to their analysis: V-Aux orders can only be derived when a *v*P complement is selected. This is because they assume across-the-board V-to-T movement of the finite verb. However, while V-to-T seems to be an option in Old English, the examples provided by Haeberli & Ihsane (2016), Pintzuk (1999) are limited, which raises questions as to its frequency. I therefore propose that auxiliaries generally do not raise higher than *v*, although there may be cases of incipient V-to-T. This assumption is extended to the continental West Germanic languages as well (Walkden 2014 proposes a similar analysis for Old Saxon), which also do not have V-to-T in the Present-day varieties (see Biberauer & Roberts 2010, Vikner 2005, Zwart 1994 for discussion). If there is no (across-the-board) V-to-T movement, this also implies – contra B&R – that there is also no movement of the main verb to $TP_{DEF.}$

The basic derivation of an Aux-V-O clause, as in the Old English example in () in which no non-obligatory movement has taken place is illustrated in (5).

(4) þæt ic mihte *geseon* **þone scinendan engel**
that I might see that shining angel
'that I might see the shining angel'
(ÆLS_[Cecilia]:46.7137)

The object DP is located in its base-generated position as the complement of VP. The non-finite verb moves from V_{emb} to v_{emb}, while the finite verb moves from V_{mat} to v_{mat}. The subject is base-generated as an (external) argument of the main verb, but is raised to Spec,TP under the influence of an Edge Feature (EF, the current instantiation of Chomsky's (2000) EPP features) on T, which obligatorily attracts the subject.



OV order is derived by leftward movement to spec,vP$_{emb}$. The object may move by itself, or move as part of the VP. Both movement types result in OV order. However, movement of only the object results in a leaking structure, in which VP-internal material surfaces in postverbal position. If the object is attracted by vP$_{emb}$ in (5), this results in Aux-O-V. If the object is attracted by vP$_{mat}$ in (5), this results in O-Aux-V order.

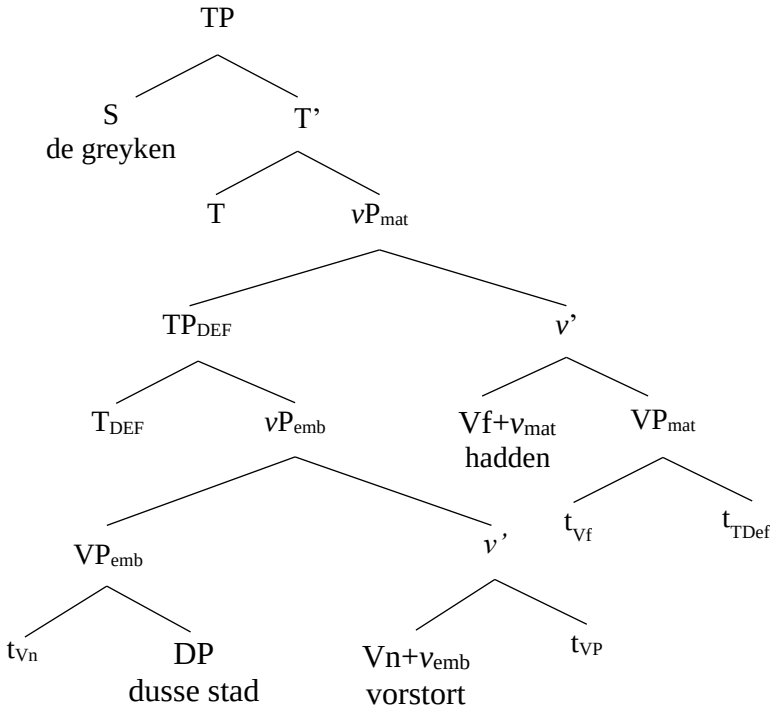
V-Aux word order is derived by movement of the lower clause into the higher clause. B&R assume that this is movement triggered by pied-piping to satisfy an EF feature on T (as does Wallenberg 2009). However, it was suggested in chapter 3 that V-Aux is motivated independently and is not just a 'by-product' of pied-piping under influence of an EF feature on T.

Like OV/VO variation, the alternation between V-Aux and Aux-V might be information-structurally motivated. Subclauses with V-Aux order seem to be backgrounded (Milicev 2016, Struik & Bastiani 2018); they typically express information that has been mentioned before or provide additional information that is not necessarily relevant for discourse. Aux-V clauses, on the other hand, convey new and relevant information. I therefore tentatively argue that V-Aux is the result of pied-piping of the entire lower clause, TP$_{DEF}$,

to Spec,*v*P$_{mat}$ as an information-structurally motivated parallel of the object to *v*P$_{emb}$. The derivation of an O-V-Aux clause, in which both the object and TP$_{DEF}$ have moved is illustrated in (7) with the Middle Low German example in (6).

(6) do de greyken **dusse** **stad** *vorstort* hadden
when the Greeks this city overthrown had
'when the Greeks had overthrown this city'
(Engelhus_Weltchronik_OF_1435)

(7)

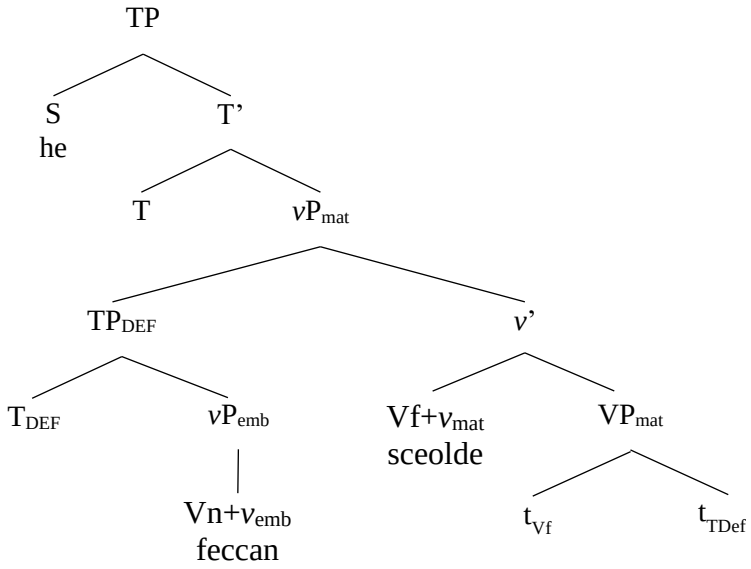


Movement of the object, the lower clause, or both to Spec,*v*P straightforwardly derives O-V-Aux, Aux-O-V and O-Aux-V from basic Aux-V-O clauses. However, it is not clear so far how V-Aux-O clauses are derived or how V-O-Aux orders, which are not attested in any of the West Germanic languages, are ruled out. I follow the Radical Spell Out analysis of B&R: constituents are linearized in final position if they are not in Spec,*v*P by the time the *v*P phase is completed. This is due to the Phase Impenetrability Condition (PIC; Chomsky 2000: 108), which states that any material that is in

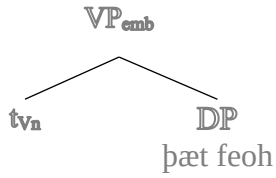
the complement of the phase head (i.e. *v* and C) will be sent to Spell Out. B&R assume that upon completion of the *v*P phase, the complement is transferred to PF, freezing it in place. As a consequence, the object is linearized in postverbal position. This is illustrated in (9), with the Old English example in (8).

(8) þæt he *feccan* sceolde **þæt feoh** mid reaflace
that he fetch should the goods with robbery
'that he should steal the goods'
(ÆLS_[Maccabees]:760.5327)

(9)



Already sent to Spell-out:



The object in (9) was not moved to Spec,*v*P$_{emb}$ before completion of the phase and is hence spelled out in the lower position, together with VP. The remainder of *v*P$_{emb}$ is raised to Spec,*v*P$_{mat}$ to derive the V-Aux order. The

assumption of PIC and immediate linearization after Spell Out rules out V-O-Aux orders: objects must have moved to Spec,vP$_{emb}$ in (9) before they can move to Spec,vP$_{mat}$ as part of T$_{DEF}$. Objects not raised to Spec,vP$_{emb}$ will be spelled out in postverbal position.

This analysis is able to derive all word order patterns, but I have thus far not said anything about the interaction with information structure, nor the differences between English on the one hand and Dutch and German on the other. This is the topic of the next section.

3.2 Integration of information structure: the difference between English and Dutch/German

The empirical evidence presented in section 2 demonstrates that all West Germanic languages allow the same word order patterns, but at different frequencies, and while information structure plays a role in all languages, the effect plays out in different directions. I argue that this is the result of one single difference between the languages: the feature that attracts objects to Spec,vP is more selective in English than in German and Dutch

In the analysis laid out in the previous section Spec,vP plays a crucial role: in addition to being a phase head, it is the landing site of both the object and of TP$_{DEF}$. I argue that the properties of vP play a crucial role in the way information structure is encoded in the syntax of individual languages. This idea is based on the observations in González-Vilbazo and López (2012). They argue, in an incarnation of Borer's (1984) original hypothesis, that v as a functional category is subject to cross-linguistic parametric variation. Specifically, they argue that the properties of v determine the order of the verb and complement, the expression of information structure and the prosodic structure of the verb and complement. I will leave aside the influence of prosody on word order variation in this discussion; for a formal integration of prosody and syntax, see Zubizarreta (1998), and see Hinterhölzl (2015) for an account which includes prosody in accounting for OV/VO in Old High German.

While González-Vilbazo and López (2012) are not committed to a particular analysis, they argue that the order of the object and the verb is determined by properties of v. In the antisymmetric account developed here, this is due to the EF on v which attracts the object. The crucial difference between modern English v and modern Dutch and German v is that English does not have this feature, whereas Dutch and German do. As a consequence, Dutch and German have OV word order. In earlier stages, the v was equipped with an EF that triggers movement in all the West Germanic languages. However, there was already a difference: the EF on the early English v is selective, whereas the EF on the early Dutch and German v attracts all objects.

I argue that this difference is at the core of the different information structural patterns.

In chapter 3, it was argued that objects in Old and Middle English are preverbal by virtue of a selective Edge Feature (EF) (in terms of Radford & Vincent 2012) on *v*. This EF is selective in that it only enters the derivation whenever there is an object which carries a [Ref] feature and likewise only attracts objects which carry the [Ref] feature. I argued that this feature is related to the richness of the demonstrative paradigm, following Jurczyk's (2017) proposal that referentiality 'piggy-backs' on the existence of case and gender marking on demonstratives. I argued that referential DPs have a big-DP structure, i.e. they have an additional φ-related feature layer, which facilitates anaphoric reference (cf. Biberauer & van Kemenade 2011 for a similar proposal and discussion). This [Ref] feature is thus not a commitment to the idea that information structure is an integral part of syntax (as in cartographic approaches along the lines of Rizzi (1997), in which a [+Foc] marked constituent moves to a dedicated Focus Phrase); rather, the [Ref] feature makes the referential marking syntactically visible. The information structure effect is the result of the morpho-syntactic properties of the object: only referential objects may move to Spec,*v*P under the influence of a [Ref] feature. Non-referential objects, such as inert objects or quantified and negated objects, were argued to be the result of different types of movement in chapter 3.

In chapters 4, 5 and 6, it was argued that the preverbal position of objects in Dutch and German is the result of obligatory movement to Spec,*v*P. This is essentially the result of a non-selective EF: all objects move to Spec,*v*P. To derive VO structures, I adopt the Copy Theory of Movement (Nunes 2011) and assume that the object leaves a copy after each movement step. Upon completion of the *v*P and transfer to the interfaces, the Spell Out position of the object is determined based on its information structural and prosodic features. The pragmatic neutrality of OV suggests that the default Spell Out position is the highest – Spec,*v*P – position, but objects may be spelled out in a lower position whenever they are new or heavy (cf. Hinterhölzl 2015 and Struckmeier 2017 for similar approaches). This straightforwardly accounts for the distribution of the data from the previous chapters. The data suggest that OV is the neutral word order, and that deviations from this neutral order may be attributed to newness and heaviness. The information-structural effect in historical High German is less evident, as chapter 6 showed. However, the data do not pose a serious problem for the analysis presented here: the possibility to satisfy requirements for Spell Out in a low position may be different in historical High German, or may seem to be stretched as the result of translation influence or metrical constraints.

The crucial difference between early English on the one hand and early Dutch and German on the other is the selectiveness of the EF. In English, anaphoric objects have a [Ref]-marked big-DP structure, which makes the discourse-givenness grammatically visible. Only objects that have a big-DP structure move to Spec,*v*P. Thus, only anaphoric objects surface in preverbal position. In Dutch and German, all objects move to Spec,*v*P, but they may be spelled out in their base position as the result of interface conditions. Note that while the EF in English is selective, this does not preclude an analysis in terms of Spell Out of lower copies of objects which have moved. Chapters 2 and 3 demonstrated that heaviness is also a significant predictor of object position. Objects moved to Spec,*v*P may still be spelled out in VO position when they are heavy. The next section discusses the status of scrambling in early Germanic, and how it fits in the model outlined in this section. Scrambling and OV word order are essentially the same in early West Germanic, as both are movement to Spec,*v*P. The independent function is acquired later in the OV languages.

3.3 A note on scrambling

A further difference between Present-day English on the one hand and Present-day Dutch German on the other is that Dutch and German allow variation in the order of object and adverbial, i.e. scrambling in the middle field. This is in part contingent on the loss of OV in English and the loss of VO in Dutch. In present-day English, the object is 'stuck' in a position below V: it has lost the EF which attracts the object to the middle field. In Dutch and German, the loss of VO entails that the low Spell Out option is lost and objects must always be spelled out in the middle field as a consequence. Chapter 4 addressed the question if OV/VO variation and middle field scrambling are (diachronically) related in the history of Dutch. Just like OV/VO variation scrambling has been argued to be motivated by information structure (Broekhuis 2008, de Hoop 1996, Neeleman & van der Koot 2008, Schoenmakers et al. 2021, among many others). The chapter demonstrates that scrambling was always a syntactic option in Dutch. In fact, the data show that most of the objects surface in scrambled position, above an adverbial, regardless of their information status as long as OV/VO variation is productive, and VO prominently features new objects. After the 16th century, when VO was largely lost, a new division in the middle field into a given and new domain starts to appear. By the 19th century, new objects rarely occur in scrambled position, whereas given objects do so freely. The findings for early German in chapters 5 and 6 suggest a similar pattern; as long as VO is productive, any object that is preverbal occurs in scrambled position.

Chapter 4 integrated scrambling in the optional Spell Out analysis laid out in the previous section. It builds on the analysis in Broekhuis (2008) and formulates scrambling as a two-step licensing process from the basic VO position of the object to Spec,*v*P via Spec,VP. The object may be spelled out in any of these three positions, illustrated in (10), adapted from (Broekhuis 2008: 61).

(10) [$_{vP}$ OBJ3 v [$_{VP}$ OBJ2 [$_{VP}$ V OBJ1]]]

The template in (10) essentially adds a third Spell Out position to the binary options presented in the previous section: in Spec,*v*P to derive OV, or as complement of VP to derive VO. The third option that is added is Spell Out in Spec,VP, which also results in OV order. However, Spell Out in Spec,*v*P results in scrambled OV, while Spell Out in Spec,VP results in unscrambled OV.

This specific analysis runs into some problems when combined with the derivations in section 3.1. The verb in structure (10) is in V, and not in *v* as in the discussion on OV/VO in section 3.1. In the phase-based approach as adopted the verb cannot be in V in V-Aux clauses, as it would have been sent to Spell Out and linearized upon completion of the lower *v*P phase, as in (9), where the VP is already sent to Spell Out. The integration of scrambling into the model as presented is clearly more complex than simply assuming Spec,VP as an intermediate landing site and Spell Out position.

The precise analysis of middle field scrambling depends on one's assumptions about the structure of the middle field. Ferraresi and Jäger (2018: 131) note in relation to historical High German that "while the study of the prefield is very much focused on whether a certain type of elements occurs in a certain position, study of the middle field is generally more about the relation between elements and the groups that they form." Broekhuis and Corver (2020) likewise remark that despite the relative freedom in the Dutch middle field, not much is certain about its precise structure and postulate an XP above *v*P to which objects may move. There is nothing that precludes the assumption of another, higher, landing site of the object in the middle field above *v* (the same was suggested for quantified and negated objects in Old and Middle English, cf. Chapter 3, section 4.3.). The assumption of a higher position would also account for the observation that there are in fact three preverbal positions in the middle field: one immediately left-adjacent to the verb, one above VP adverbs, and one above *v*P adverbs.

In any case, the object has to move through Spec,*v*P in order to surface in preverbal position to escape low Spell Out. This is true regardless of whether Spec,*v*P is considered the final landing site, or some higher

projection. I leave the precise landing site of the object in scrambling constructions for future research.

3.4 Concluding remarks

This chapter has sought to answer the question whether the early West Germanic languages are similar or different in terms of OV/VO variation. I have shown on the basis of detailed corpus studies that the languages are similar in that they allow the same word order patterns, which are governed by the same factor: information structure. However, the languages differ in the frequencies in which each pattern occurs and the direction in which information structure operates. On the surface, it seems that early English is already a VO language, while early Dutch and German are already OV languages. I have demonstrated in this subsection that this does not preclude a unified analysis, however. The antisymmetric analysis developed in this thesis accounts for the similarity between the languages by deriving word order patterns in the same way for all languages. I argued that both OV and V-Aux order are the result of leftward movement triggered by an EF on *v*. The information structural differences between the languages are the result of a crucial difference in properties of the EF. In English, only referential objects are attracted, while all objects are attracted in Dutch and German. In both languages, interface effects determine the Spell Out position of the object.

One of the merits of this model is that it allows integration of diachronic changes and other syntactic phenomena without having to postulate radical changes in the basic syntactic structure, such as a parametric change in the headedness of VP and TP and associated movement processes (contra, for instance, the Double Base Hypothesis). This is in line with Borer's (1984) hypothesis that differences in languages may be reduced to differences in lexical heads, in an otherwise similar structure. The differences are thus of a microparametric, rather than a macroparametric nature (Baker 2009, Roberts 2019). Each language undergoes its own microparametric changes, and the diachronic development of the early West Germanic language is the collection of microparametric changes that they undergo. These changes may be of a subtle nature, but may result in large differences on the surface, especially from a diachronic perspective. English first lost the option to move TP_{DEF} to Spec,vP_{mat} (or it became string-vacuous because of incipient V-to-T), which was followed by the loss of VP pied-piping and object movement to spec,vP_{emb}. In other words, *v*P loses its EF. In Dutch and German, on the other hand, it is not the EF that is lost, but Spell Out of objects in lower position, while at the same the object retains its possibility to be spelled out in the middle field, which gives rise to information-structurally motivated scrambling: the boundary between the given and new domains shifts from the verb (OV vs. VO) to the adverb in the middle field (O-ADV vs. ADV-O).

4 Limitations, implications and future directions

The previous sections have placed the findings of the previous chapters in a comparative perspective, which has shed new light on the motivation and derivation of OV/VO variation in early West Germanic. With these findings come many new questions and opportunities for future research.

Let us start with some methodological considerations. The focus of the case studies on each individual language was on subclauses with two verbs. This was a clearly and narrowly motivated choice. First, it is the condition that controls best for finite verb movement in main clauses. Second, I explicitly addressed the validity of the Double Base Hypothesis in chapters 2 and 3. One of the pillars of the Double Base Hypothesis is that there is a relation between the order of constituents in VP and the order of the constituents in TP. The condition is fairly restrictive condition, however, and it excludes many clauses which may also be insightful to determine the status of OV/VO, such as main clauses with two verbs and subclauses with one verb. This was not a problem for early English and Middle Dutch, as the available source material is rich enough to create a robust dataset on which generalisations about OV/VO variation could be based. However, the number of (especially new) examples in Old Saxon and Old High German was relatively low, which made it difficult to draw definitive conclusions for these languages. The analysis developed here makes clear predictions beyond subclauses with two verbs, however. Extending the methodology developed here to these contexts may provide a more detailed insight into OV/VO variation and scrambling in early German. A detailed investigation of scrambling in German, along the lines of Chapters 5 and 6, would also require additional data collection from Early New High German, as VO is still productive in Middle High German.

A second methodological choice was to restrict the dataset to referential direct objects only. This means that indirect objects and non-referential objects were excluded from the analysis. However, indirect objects may also occur in postverbal position in Dutch (Burridge 1993) and German (Walkden 2014 on Old Saxon), and in preverbal position in English (cf. Taylor & Pintzuk 2012b). The position of indirect objects does not seem to be regulated in any way in Old English (Koopman 1990), so this raises questions how they fit within the analysis that is presented here, especially in light of the observation that the order of the direct object and indirect object in the middle field is, or becomes, dependent on their respective information statuses in German (Petrova 2015, Rauth 2021, Speyer 2018b), but not in Dutch. Similarly, non-referential objects may also appear in both OV and VO order in all languages, but have (for the most part) been excluded from the analysis,

although chapter 3 provides suggestions for the analysis of objects that are part of a fixed expression and quantified and negated objects.

From a syntactic perspective, the question arises how (the emergence of) verb clustering should be analysed within this framework. In addition to the surface position of the object, present-day Dutch and German differ from present-day English in that they display verb clustering –considered a typically syntactic correlate of OV structure. The verbs generally form a tight syntactic unit at the right edge of the clause, which cannot be interrupted by any other sentence material, although light elements such as particles occasionally surface between verbs and the order of the verbs within a cluster is variable. Interestingly, this variation does not have semantic or pragmatic consequences, and the preference for a particular word order depends to a large extent on dialectal preferences (cf. SAND; Barbiers et al. 2008 and Stroop 1970 on Dutch; Bader & Schmid 2009 on German). Much has been written about the syntactic status of verb clusters in the Present-day languages (see Wurmbrand 2006 for a comprehensive overview), but the syntactic status of short verb clusters (two or three verbs) in the early language stages is unclear (but see Coupé & van Kemenade 2009, Coupé 2015 on the rise of longer clusters).

The status of verb clusters in early Dutch and German has for the most part been left implicit in this thesis. In fact, I have assumed that verb clusters do not (yet) exist prior to 1400. The derivations in section 3.1. are based on the assumption that both the finite and the non-finite have their own functional structure and that they can each attract constituents into their specifiers. The alternation between Aux-V and V-Aux is the result of pied-piping of TP_{DEF} into the higher clause. However, the data presented in section 2 seem to shed some light on the development of clusters in Dutch and especially German, and the analysis thereof. The data show that Aux-O-V was a productive word order pattern in Old Saxon and Old High German, which was largely lost by Middle Low German and Middle High German respectively. In contrast, the data show a significant rise in O-Aux-V orders in both languages from the Old to the Middle stages. This change coincides diachronically with the hypothesis that verb clusters are a Middle stage innovation, which the emergence of long verb clusters and the IPP effect seems to suggest (cf. Coupé 2015 on Dutch; Jäger 2018 on German). From this perspective, Aux-O-V cannot be a case of Verb Projection Raising (i.e. a clustering operation similar to Verb Raising). In fact, I analysed Aux-O-V as movement of the object to the lower *v*P, as a leftward movement alternative to O-Aux-V, which is derived by movement to the higher *v*P. The loss of Aux-O-V entails that objects can no longer be placed in the Spec,*v*P of the non-finite verb. This may be the result of changes in the featural properties of *v* as complements of restructuring verbs which has as a consequence that verbal complements can no longer attract the object in the

lower Spec,*v*P, but that all objects must raise to the higher Spec,*v*P associated with the finite verb. This may essentially result in a serialization effect, in which the verbal complex becomes a series of heads, rather than a series of phases. This, in turn, raises the question if V-Aux can still be pied-piping of the lower clause into the higher clause, or whether a reanalysis takes place here as well and heads may freely reorder.

This point also relates to the suggestion that V-Aux word order is independently motivated in Old and early Middle English. This claim could not be substantiated within the scope of this thesis (but see Milicev 2016), and as a consequence, could also not be tested against the Dutch and German data. This would be especially interesting in light of the observation that the serialization of verbs does not lead to differences in interpretation between Dutch and German. The question is if this was the case in the earlier stages of Dutch and German, and whether this pragmatically motivated distinction was lost. If this is not the case, it may provide support for the hypothesis that V-Aux is simply the result of pied-piping to license the object in the higher *v*P, which may be considered an antisymmetric solution to verb clustering (cf. Wallenberg 2009 on the derivation of clusters within a pied-piping approach).

If the observation that V-Aux is the result of defocussing in early English is on the right track, this not only provides us more insight into the discourse structure in earlier English, but also sheds light on the relation between information structure and syntax. The assumption of a biclausal structure implies two *v*Ps, which may both host structure that is discourse-given. The lower *v*P level is used to differentiate between given and new objects, whereas the higher *v*P level is used to differentiate between background and focus. The different functional layers related to information structure that Petrova and Solf (2009) identify would then correspond to different layers of functional structure.

The results also pave the way for a formal framework of the interaction between syntax, information structure and diachronic change. The findings presented in this thesis support the Minimalist hypothesis that syntax and pragmatics are independent modules, but also shows that the two closely interact. What the findings in this thesis demonstrate is that information structure operates on the syntactic structure that is available. As long as OV/VO variation is available, the variation may be used to express information structure. If this is no longer possible, information structure needs to be expressed in other ways. Chapter 4 shows that this was relatively easy in Dutch and German: once VO was lost, the given-new distinction could still be expressed using the positions in the middle field. In English, on the other hand, the verb is ‘stuck’ in VO position after OV was lost. The language thus resorts to other structures to indicate information structure, such as expletive constructions, which happens to develop at roughly the same time as OV was

lost (Biberauer & Roberts 2005) and which are frequently used to express new information in Present-day English (Ward & Birner 2001).

From a more general West Germanic perspective, the empirical findings of this thesis raise some questions as to the phylogenetical position of early English. While the early West Germanic languages are much more similar in terms of word order than they are today, English is still the odd one out. It shows different frequencies of the various patterns, and the patterns are motivated differently. However, the patterns are similar to OV/VO variation in North Germanic, where OV is strongly associated with given information, and not with new information. It is especially remarkable that Old Saxon, which is considered Old English' closest extant relative, shows a distribution that is more in line with Middle Dutch and Old High German than with English. It would therefore be very insightful to also include Old Frisian in the West Germanic OV/VO typology. The name Old Frisian is slightly deceptive, as it is not really old compared to Old English (see Versloot 2004 for a discussion on the periodization of Frisian in relation to the contemporary Middle Germanic languages). The earliest manuscripts date from 1200, so the question is how much OV/VO variation is still there. Most of the extant material is sparse, however, and relatively little work has been done on its syntax thus far. The material was until recently not available in a curated and digitised format, which makes research of the type in this thesis difficult. However, the corpus Old Frisian has recently become available (van de Poel 2019), but for reasons of time and space Frisian could not be included here.

REFERENCES

Allen, Cynthia L. 2016. The definite determiner in Early Middle English: What happened with þe? In Sten Vikner, Henrik Jørgensen & Elly van Gelderen (eds.), *Let us have articles betwixt us – Papers in historical and comparative linguistics in Honour of Johanna L. Wood*, 43-82. Dept. of English, School of Communication & Culture: Aarhus University.

Allen, Cynthia L. 2019. The definite article in Old English: Evidence from Ælfric's Grammar. In Nuria Yáñez-Bouza, Emma Moore, Linda van Bergen & Willem Hollmann (eds.), *Categories, constructions, and change in English syntax*, 130-46. Cambridge: Cambridge University Press.

Ampe, Albert. 1968. *Den Tempel onser sielen. Door de schrijfster der Evangelische Peerle*. Ruusbroecgenootenschap: Antwerpen.

Ampe, Albert. 1993. Die Evangelische Peerle. Unpublished ms. Retrieved from https://medialibrary.uantwerpen.be/oldcontent/container2726/files/Peerle_drukproef_Ampe.pdf

Ariel, Mira. 1990. *Accessing noun-phrase antecedents*. London: Routledge.

Axel, Katrin. 2007. *Studies on Old High German syntax: Left sentence periphery, verb placement and verb-second*. Amsterdam: John Benjamins.

Baayen, Harald. 2008. *Analyzing linguistic data. A practical introduction to statistics using R*. Cambridge: Cambridge University Press.

Bader, Markus & Tanja Schmid. 2009. Verb clusters in colloquial German. *The Journal of Comparative Germanic Linguistics* 12, 175-228.

Baker, Mark C. 2009. The Macroparameter in a microparametric world. In Theresa Biberauer (ed.), *The limits of syntactic variation*, 351-374. Amsterdam: John Benjamins.

Baltin, Mark. 2006. Extraposition. In Martin Everaert & Henk van Riemsdijk (eds.), *The Blackwell Companion to Syntax*, vol. 1, 237-271. Malden: Blackwell.

Barbiers, Sjef. 2005. Word-order variation in three-verb clusters and the division of labour between generative linguistics and sociolinguistics. In Leonie Cornips & Karen P. Corrigan (eds.), *Syntax and variation. Reconciling the biological and the social*, 233-264. Amsterdam: John Benjamins.

Barbiers, Sjef, Johan van de Auwera, Hans Bennis, Eefje Boef, Gunther de Vogelaer & Margreet van der Ham. 2008. *Syntactische Atlas van de Nederlandse Dialecten, Deel II*. Amsterdam University Press.

De Bastiani, Chiara. 2019. *An interface based account for the grammaticalization of the VO word order in the history of English*. PhD dissertation, Università Ca'Foscari Venezia.

Bates, Douglas, Martin Mächler, Ben Bolker & Steve Walker. 2015. Fitting linear mixed-effects models using lme4. *Journal of Statistical Software* 67(1), 1–48.

Bax, Anna, & Michael Diercks. 2012. Information structure constraints on object marking in Manyika. *Southern African Linguistics and Applied Language Studies* 30(2), 185-202.

Bech, Gunnar. 1955. *Studien über das deutsche verbum infinitum*. Copenhagen: Munksgaard.

Bech, Kristin. 2001. *Word order patterns in Old and Middle English: A syntactic and pragmatic Study*. PhD dissertation, University of Bergen.

Behaghel, Otto. 1909. Beziehungen zwischen Umfang und Reihenfolge von Satzgliedern. *Indogermanische Forsuchingen* 25, 110-42.

Behaghel, Otto. 1932. *Deutsche Syntax. Eine geschichtliche Darstellung*. Heidelberg: Carl Winter.

van den Berg, Evert. 1980. Het Middelnederlands als SOV-taal. *De Nieuwe Taalgids* 73, 53–60.

van Bergen, Geertje & Peter de Swart. 2009. Definiteness and scrambling in Dutch: Where theory meets practice. In Anisa Schardl, Martin Walkow, & Muhammad Abdurrahman (eds.), *Proceedings of NELS 38*, 113–124. Amherst, MA: GLSA.

van Bergen, Geertje & Peter de Swart. 2010. Scrambling in spoken Dutch: Definiteness versus weight as determinants of word order variation. *Corpus Linguistics and Linguistic Theory* 6(2), 267–295.

van Bergen, Linda. 2003. *Pronouns and word order in Old English: With particular reference to the indefinite pronoun man*. London: Routledge.

den Besten, Hans & Jerold A. Edmondson. 1983. The verbal complex in continental West-Germanic. In Abraham Werner (ed.), *On the formal syntax of Westgermania. Papers from the '3rd Groningen Grammar Talks'. Groningen, January 1981*, 155-216. Amsterdam: John Benjamins.

Biberauer, Theresa, Anders Holmberg & Ian Roberts. 2014. A syntactic universal and its consequences. *Linguistic Inquiry* 45(2), 169–225.

Biberauer, Theresa, Glenda Newton & Michelle Sheehan. 2009. The final-over-final constraint and predictions for diachronic change. *Toronto Working Papers in Linguistics* 31. Retrieved from https://twpl.library.utoronto.ca/index.php/twpl/article/view/6091

Biberauer, Theresa & Ian Roberts. 2005. Changing EPP-parameters in the history of English: accounting for variation and change. *English Language and Linguistics* 9(1), 5-46.

Biberauer, Theresa & Ian Roberts. 2006. The loss of residual "head-final" orders and remnant fronting in Late Middle English: causes and consequences. In Jutta M. Hartmann & László Molnárfi (eds.), *Comparative Studies in Germanic Syntax: From Afrikaans to Zurich German*, 263-97. Amsterdam: John Benjamins.

Biberauer, Theresa & Ian Roberts. 2008. Cascading parameter changes: Internally-driven change in Middle and Early Modern English. In Thórhallur Eythórsson (ed.), *Grammatical Change and Linguistic Theory: The Rosendal papers*, 79-113. Amsterdam: John Benjamins.

Biberauer, Theresa & Ian Roberts. 2010. Subjects, tense and verb movement. In Theresa Biberauer, Anders Holmberg, Ian Roberts & Michelle Sheehan (eds.), *Parametric variation: null subjects in minimalist theory*, 263 - 302. Cambridge: Cambridge University Press.

Biberauer, Theresa, and Ian Roberts. 2011. Negative words and related expressions: A new perspective on some familiar puzzles. In Pierre Larrivée & Richard Ingham (eds.), *The evolution of negation: Beyond Jespersen's cycle*, 23-60. Berlin: de Gruyter.

Biberauer, Theresa & Ans van Kemenade. 2011. Subject positions and information-structural diversification in the history of English. *Catalan Journal of Linguistics* 10, 17-69.

Bies, Ann E. 1996. *Syntax and discourse factors in Early New High German: evidence for verb-final word order*. MA thesis, University of Pennsylvania.

Birner, Betty J. 2006. Inferential relations and noncanonical word order. In Betty J. Birner & Gregory L. Ward (eds.), *Drawing the boundaries of meaning: Neo-Gricean studies in pragmatics and semantics in honor of Laurence R. Horn*, 31-51. Amsterdam: John Benjamins.

Biskup, Petr. 2007. Phase Featuring-driven EPP features and EPP-feature-driven subjacency in Czech. In Peter Kosta & Lilia Schürcks (eds.), *Linguistics investigations into formal description of Slavic languages*, 127-146. Frankfurt: Peter Lang.

Blom, Corrien. 2002. Word order in Middle Dutch: The interpretation of different types of data. In Hans Broekhuis & Paula Fikkert (eds.), *Linguistics in the Netherlands* 2002, 13-24. Amsterdam: John Benjamins.

Bobaljik, Jonathan D. & Susi Wurmbrand. 2008. Case in GB/Minimalism. In Andrej L. Malchukov & Andrew Spencer (eds.), *The Oxford handbook of case*, 44–58. Oxford: Oxford University Press.

Booij, Geert. 2008. Pseudo-incorporation in Dutch. *Groninger Arbeiten zur Germanistischen Linguistik 46*, 3–26. Groningen: University of Groningen

Booth, Hannah, Anne Breitbarth, Aaron Ecay & Melissa Farasyn. 2020. A Penn-style treebank of Middle Low German. In Nicoletta Calzolari et al. (eds.), *Proceedings of the 12th Conference on Language Resources and Evaluation (LREC 2020)*. http://www.lrec-conf.org/proceedings/lrec2020/index.html.

Borer, Hagit. 1984. *Parametric syntax: Case studies in Semitic and Romance languages*. Dordrecht: Foris.

Bouma, Gerlof & Helen de Hoop. 2008. Unscrambled pronouns in Dutch. *Linguistic Inquiry* 39(4), 669–677.

Breitbarth, Anne. 2013. Indefinites, negation and Jespersen's Cycle in the history of Low German. *Diachronica* 30, 171-201.

Breitbarth, Anne. 2014. *The History of Low German Negation*. Oxford: Oxford University Press.

Broekhuis, Hans. 1997. Nogmaals Verb Projection Raising. *Tabu* 27: 1-27.

Broekhuis, Hans. 2008. *Derivations and evaluations. Object shift in the Germanic languages*. Berlin: De Gruyter Mouton.

Broekhuis, Hans. 2011. A typology of clause structure. In Jeroen van Craenenbroeck (ed.), *Linguistic variation yearbook*, 1–31. Amsterdam: John Benjamins.

Broekhuis, Hans. 2021. Scrambling of definite object NPs in Dutch: Formal theories, corpus data and experimental research. Ms., Meertens Institute, Amsterdam. Retrieved from https://ling.auf.net/lingbuzz/005818.

Broekhuis, Hans & Norbert Corver. 2020. 9.5. The Middle Field. Retrieved from https://taalportaal.org/taalportaal/topic/link/syntax__Dutch__vp__V9_Word_order_introduction__V9_Word_order_introduction.9.5.xml

Broekhuis, Hans & Joost Dekkers. 2000. The Minimalist program and Optimality Theory: Derivations and evaluations. In Joost Dekkers, Frank van der Leeuw & Jeroen van de Weijer (eds.), *Optimality Theory: Phonology, syntax and acquisition*, 386–442. Oxford: Oxford University Press.

Broekhuis, Hans & Ellen Woolford. 2013. Minimalism and Optimality Theory. In Marcel den Dikken (ed.), *The Cambridge handbook of generative syntax*, 122–161. Cambridge: Cambridge University Press.

Bruin, C.C. 1978. *Het Oude Testament. Tweede stuk: I Kronieken - Jesus Sirach*. Leiden, 194-277.

Burridge, Kate. 1993. *Syntactic Change in Germanic. Aspects of language change in Germanic with particular reference to Middle Dutch*. Amsterdam: John Benjamins.

Carlson, Greg. 1977. *Reference to kinds in English*. PhD dissertation, University of Massachusetts, Amherst.

Catasso, Nicholas. 2021. Generalized and specialized adverbial resumption in Middle High German and beyond. *Journal of Historical Syntax* 5(2), 1-38.

Catasso, Nicholas, Marco Coniglio, Chiara De Bastiani & Eric Fuß. 2021. He then said...: (Understudied) deviations from V2 in early Germanic. *Journal of Historical Syntax* 5(17), 1-39.

Chomsky, Noam. 1971. Deep structure, surface structure and semantic interpretation. In Danny D. Steinberg & Leon A. Jakobovits (eds.*), Semantics: An interdisciplinary reader in philosophy, linguistics and psychology*, 183–216. Cambridge: Cambridge University Press.

Chomsky, Noam. 1981. *Lectures on Government and Binding*. Dordrecht: Foris.

Chomsky, Noam. 1995. *The Minimalist Program*. Cambridge: MIT Press.

Chomsky, Noam. 2000. Minimalist inquiries: the framework. In Roger Martin, David Michaels & Juan Uriagereka (eds.), *Step by step*, 89-156. Cambridge: MIT Press.

Chomsky, Noam. 2001a. Beyond explanatory adequacy. *MIT occasional papers in linguistics* 20. Cambridge: MIT Press.

Chomsky, Noam. 2001b. Derivation by phase. In Michael Kenstowicz (ed.), *Ken hale: a life in language*, 1-52. Cambridge: MIT Press.

Chomsky, Noam. 2008. On Phases. In Robert Freidin, Carlos P. Otero and Maria Luisa Zubizarreta (eds.), *Foundational Issues in Linguistic Theory*, 133-166. Cambridge: MIT Press.

Cichosz, Anna, Jerzy Gaszewski & Piotr Pęzik. 2017. *Element order in Old English and Old High German translations*. Amsterdam: John Benjamins.

Cinque, Guglielmo. 1993. A null theory of phrase and compound stress. *Linguistic Inquiry* 24(2), 239–298.

Cinque, Guglielmo. 1999. *Adverbs and functional heads: A cross-linguistic perspective.* Oxford: Oxford University Press.

Clemoes, Peter. 1966. Ælfric. In Eeric Gerald Stanley (ed.), *Continuations and beginnings: Studies in Old English literature*, 176–209. London: Nelson.

Corpus Gysseling. 2021. Available at the Dutch Language Institute: http://hdl.handle.net/10032/tm-a2-r8

Coupé, Griet. 2015. *Syntactic extension. The historical development of Dutch verb clusters*. PhD dissertation, Radboud University.

Coupé, Griet & Ans van Kemenade. 2009. Grammaticalization of the modals in English and Dutch: uncontingent change. In Paola Crisma & Giuseppe Longobardi (eds.), *Historical syntax and linguistic theory*, 250-70. Oxford: Oxford University Press.

Coussé, Evie. 2009. Focus, complexiteit en extrapositie. Over de veranderende woordvolgorde in het Nederlands. *Neerlandistiek.nl* 9(4), 1-32.

Coussé, Evie. 2010. Een digitaal compilatiecorpus historisch Nederlands. *Lexikos* 20, 123-42.

Crisma, Paola. 2011. The emergence of the definite article in English: a contact-induced change?. In Petra Sleeman & Harry Perridon (eds.), *The noun phrase in Romance and Germanic: Structure, variation, and change*, 175-192. Amsterdam: John Benjamins

Crisma, Paola. 2015. The 'indefinite article' from cardinal to operator to expletive. In Chiara Gianollo, Agnes Jäger & Doris Penka (eds.), *Language Change at the Syntax-Semantics Interface*, 125-151. Berlin: de Gruyter Mouton.

Crisma, Paola & Susan Pintzuk. 2016. An from Old to Middle English. In Sten Vikner, Henrik Jørgensen & Elly van Gelderen (eds.), *Let us have articles betwixt us*, 161-183. Dept. of English, School of Communication and Culture: Aarhus University.

Danckaert, Lieven. 2015. Studying word order changes in Latin, some methodological remarks. In Carlotta Viti (ed.), *Perspectives on Historical Syntax*, 233–50. Amsterdam: John Benjamins.

Danckaert, Lieven. 2017. *The development of Latin clause structure: A study of the extended verb phrase*. Oxford: Oxford University Press.

Delbrück, Berthold. 1900. *Vergleichende Syntax der indogermanischen Sprachen*, vol. 3. Strassbourg: Trübner.

Delfitto, Denis & Gaetano Fiorin. 2017. Bare Nouns. In Martin Everaert and Henk van Riemsdijk (eds.), *The Wiley Blackwell Companion to Syntax, Second Edition*, 1-49. Malden: Blackwell. https://doi.org/10.1002/9781118358733.wbsyncom097

Denison, David. 2006. Category change and gradience in the determiner system. In Ans van Kemenade & Bettelou Los (eds.), *The handbook of the history of English*, 279-304. Malden: Blackwell.

Dittmer, Arne & Ernst Dittmer. 1998. *Studien zur Wortstellung - Satzgliedstellung in der althochdeutschen Tatianübersetzung*. Göttingen: Vandenhoeck & Ruprecht.

van der Does, Jaap & Helen de Hoop. 1998. Type-shifting and scrambled definites. *Journal of Semantics* 15(4), 393–416.

Donhauser, Karin, Jost Gippert & Rosemarie Lühr. 2017. Referenzkorpus Altdeutsch. https://www.deutschdiachrondigital.de/.

Dryer, Matthew S. 1992. The Greenbergian word order correlations. *Language* 68(1), 81-138.

Dunbar, Richard. 1979. *Discourse pragmatics and subordinate clause word order in German: An explanation of related main clause phenomena in German and English clauses*. PhD dissertation, University of Wisconsin.

Elenbaas, Marion & Ans van Kemenade. 2014. Verb particles and OV/VO in the histoy of English. *Studia Linguistica* 68(1), 140–67.

Emonds, Joseph Embley & Jan Terje Faarlund. 2014. *English: The Language of the Vikings*. Olomouc: Palacky University.

Erickson, Jon. 1997. Some observations on word order in Old Saxon. In Christa Dürscheid, Karl Heinz Ramers & Monika Schwarz (eds.), *Sprache in Fokus*, 95-105. Tübingen: Max Niemeyer.

Evers, Arnold. 1975. The transformational cycle in Dutch and German. PhD dissertation, Utrecht University.

Faarlund, Jan Terje. 2002. The syntax of Old Nordic. In Oskar Bandle, Kurt Braunmüller, Lennart Elmevik, Ernst Hakon Jahr, Gun Widmark, Hans-Peter Naumann & Allan Karker (eds.), *The Nordic Languages: An International Handbook of the History of the North Germanic Languages*, 940-50. Berlin: De Gruyter Mouton

Farkas, Donka & Henriëtte de Swart. 2003. *The semantics of incorporation: From argument structure to discourse transparency*. Stanford, CA: CSLI Publications.

Ferraresi, Gisella & Agnes Jäger. 2018. Introduction to Part II. In Agnes Jäger, Gisella Ferraresi & Helmut Weiß (eds.), *Clause structure and word order in the history of German*, 125-31. Oxford: Oxford University Press.

Féry, Caroline & Shinichiro Ishihara. 2016. Introduction. In Caroline Féry & Shinichiro Ishihara (eds.), *The Oxford Handbook of Information Structure*, 1-15. Oxford: Oxford University.

Fischer, Olga, Ans van Kemenade, Willem Koopman & Wim van der Wurff. 2000. *The Syntax of Early English*. Cambridge: Cambridge University Press.

Fleischer, Jürg. 2006. Zur Methodologie Althochdeutscher Syntaxforschung. *Beiträge zur Geschichte der deutschen Sprache und Literatur* 128(1), 25-69.

Fortmann, Christian & Werner Frey. 1997. Konzeptuelle Struktur und Grundabfolge der Argumente. In Franz-Josef d'Avis & Uli Lutz (eds.), *Zur Satzstruktur im Deutschen*, 143-170. Tübingen: University of Tübingen

Frey, Werner. 2004. A medial topic position for German. *Linguistische Berichte* 198, 153-90.

Fries, Charles C. 1940. On the development of the structural use of word-order in Modern English. *Language* 16(3), 199–208.

Fulk, Robert Dennis. 2018. *A Comparative Grammar of the Early Germanic Languages*. Amsterdam: John Benjamins.

Fuß, Eric. 2008. *Word order and language change. On the interplay between syntax and morphology*. Goethe-University Frankfurt habilitation thesis.

Fuß, Eric. 2018. The OV/VO alternation in early German: Diagnostics for basic word order. In Agnes Jäger, Gisella Ferraresi & Helmut Weiß (eds.), *Clause Structure and Word Order in the History of German*. Oxford: Oxford University Press.

Gerritsen, Marinel. 1978. De opkomst van SOV patronen in het Nederlands in verband met woordvolgordeveranderingen in Germaanse talen. In Jan G. Kooij (ed.), *Aspekten van woordvolgorde in het Nederlands*, 3–40. Leiden: University of Leiden.

Gerritsen, Marinel. 1987. Syntaktische verandering in kontrolezinnen: Een sociolinguïstische studie van het Brugs van de 13e tot de 17e eeuw. PhD dissertation, University of Leiden.

Gianollo, Chiara. 2016a. The Latin system of negation at the syntax-semantics interface. *Rivista di Grammatica Generativa* 38, 115-135.

Gianollo, Chiara. 2016b. Negation and indefinites in Late Latin. *Pallas* 102, 277-286.

Givón, Talmy. 1988. The pragmatics of word-order: Predictability, importance and attention. In: Michael Hammond, Edith A. Moravcsik, & Jessica R. Wirth (eds.), *Studies in syntactic typology*, 243–284. Amsterdam: John Benjamins.

González-Vilbazo, Kay & Luis López. 2012. Little *v* and parametric variation. *Natural Language and Linguistic Theory* 30, 33-77.

Grafmiller, Jason & Stephanie Shih. 2011. New approaches to end weight. Paper presented at Variation and Typology: New Trends in Syntactic Research, Helsinki, Finland.

Greenberg, Joseph H. 1963. Some Universals of Grammar with Particular Reference to the Order of Meaningful Elements. In Joseph H. Greenberg (ed.), *Universals of Human Language*, 73-113. Cambridge: MIT Press.

Gries, Stefan Th. 2015. The most under-used statistical method in corpus linguistics: multi-level (and mixed-effects) models. *Corpora* 10(1), 95-125.

Grimshaw, Jane. 1997. Projection, heads and optimality. *Linguistic Inquiry* 28(3), 373–422.

Gundel, Jeanette. 1988. Universals of Topic-Comment Structure. In Michael Hammond, Edith A. Moravscik & Jessica Wirth (eds.), *Studies in Syntactic Typology*. Amsterdam: John Benjamins.

Gundel, Jaenette. 2003. Information Structure and Referential Givenness/Newness: How Much Belongs in the Grammar? In Stefan Müller (ed.), *Proceedings of the 10th International Conference on Head-Driven Phrase Structure Grammar*, 122-142 Stanford, CA: CSLI Publications.

Gundel, Jeanette, Nancy Hedberg & Ron Zacharski. 1993. Cognitive Status and the Form of Referring Expressions in Discourse. *Language* 69(2), 274-307.

Haeberli, Eric. 2000. Adjuncts and the syntax of subjects in Old and Middle English. In Susan Pintzuk, George Tsoulas, & Anthony Warner (eds.), *Diachronic syntax: Models and mechanisms*, 109-131. Oxford: Oxford University Press.

Haeberli, Eric. 2002. Inflectional Morphology and the Loss of Verb-Second in English. In David Lightfoot (ed.), *Syntactic Effects of Morphological Change*, 88-106. Oxford: Oxford University Press.

Haeberli, Eric & Liliane Haegeman. 1999. Negative concord and verb projection raising in Old English and West Flemish. In Ingrid Tieken-Boon van Ostade, Gunnel Tottie, & Wim van der Wurff (eds.), *Negation in the History of English*, 101-120. Berlin: De Gruyter Mouton.

Haeberli, Eric & Tabea Ihsane. 2016. Revisiting the loss of verb movement in the history of English. *Natural Language and Linguistic Theory* 34(2), 497-542.

Haeberli, Eric, & Richard Ingham. 2007. The position of negation and adverbs in Early Middle English. *Lingua* 117, 1-25.

Haeberli, Eric, Susan Pintzuk & Ann Taylor. 2020. Object pronoun fronting and the nature of verb second in early English. In Rebecca Woods & Sam Wolfe (eds.) *Rethinking Verb Second*, 396-425. Oxford: Oxford University Press.

Haegeman, Liliane. 1992. *Theory and description in generative syntax. A case study in West Flemish*. Cambridge: Cambridge University Press.

Haegeman, Liliane. 1995. *The syntax of negation*. Cambridge: Cambridge University Press.

Haegeman, Liliane & Henk van Riemsdijk. 1986. Verb projection raising, scope, and the typology of rules affecting verbs. *Linguistic Inquiry* 17, 417-66.

Haegeman, Liliane & Raffaella Zanuttini. 1991. Negative Heads and the Neg-Criterion. *The Linguistic Review* 8, 233-251.

Haider, Hubert. 2000. OV is more basic than VO. In Peter Svenonius (ed.), *The derivation of VO and VO*, 45-67. Amsterdam: John Benjamins.

Haider, Hubert. 2005. How to turn German into Icelandic - and derive the OV-VO contrasts. *Journal of Comparative Germanic Linguistics* 8, 1-53.

Haider, Hubert. 2010a. *The Syntax of German*. Cambridge: Cambridge University Press

Haider, Hubert. 2010b. Wie wurde Deutsch OV? Zur diachronen Dynamik eines Strukturparameters der Germanischen Sprachen. In Arne Ziegler (ed.), *Historische Textgrammatik und historische Syntax des Deutschen*, 9-32. Berlin: De Gruyter.

Haider, Hubert. 2013. *Symmetry breaking in syntax*. Cambridge: Cambridge University Press.

Haider, Hubert. 2020. VO-/OV-Base ordering. In Michael T. Putnam & Richard Page (eds.), *The Cambridge Handbook of Germanic Linguistics*, 339-64. Cambridge: Cambridge University Press.

Halliday, Michael Alexander Kirkwood. 1967. Notes of transitivity and theme in English: Part 2. *Journal of Linguistics* 3(2), 177-274.

Harbert, Wayne. 2006. *The Germanic languages*. Cambridge: Cambridge University Press.

Hawkins, John A. 1994. *A Performance theory of order and constituency*. Cambridge: Cambridge University Press.

Hawkins, John A. 2008. Germanic languages. In Bernard Comrie (ed.), *The world's major languages*, 51-58. London: Routledge.

Heck, Fabian & Gereon Müller. 2000. Successive cyclicity, long-distance superiority, and local optimization. In Roger Billerey & Brook D. Lillehaugen (eds.), *Proceedings of WCCFL 19*, 218-231. Somerville, MA: Cascadilla Press.

Henriksen, Carol & Johan van der Auwera. 2001. The Germanic languages. In Ekkehard König & Johan van der Auwera (eds.), *The Germanic languages*, 1-18. London: Routledge.

Hinterhölzl, Roland. 2004. Language change versus grammar change. What diachronic data reveal about the distinction between core grammar and periphery. In Eric Fuß & Carola Trips (eds.), *Diachronic Clues to Synchronic Grammar*, 131-160. Amsterdam: John Benjamins.

Hinterhölzl, Roland. 2010. Information Structure and Unmarked Word Order in (Older) Germanic. In Malte Zimmerman & Caroline Féry (eds.), *Information Structure: Theoretical, Typological, and Experimental Perspectives*, 282 - 303. Oxford: Oxford University Press.

Hinterhölzl, Roland. 2015. An interface account of word-order variation in Old High German. In Theresa Biberauer & George Walkden (eds.), *Syntax over Time: Lexical, Morphological, and Information-Structural Interactions*, 299-317. Oxford: Oxford University Press.

Hinterhölzl, Roland. 2017. From OV to VO in English: how to Kroch the nut. In Bettelou Los and Pieter de Haan (eds.) *Word order change in acquisition and language contact*, 9-34. Amsterdam: John Benjamins.

Hinterhölzl, Roland & Svetlana Petrova. 2018. Prosodic and information-structural factors in word order variation. In Agnes Jäger, Gisella Ferraresi & Helmut Weiß (eds.), *Clause structure and word order in the history of German*, 277 - 88. Oxford: Oxford University Press.

Hock, Hans Henrich. 2015. Proto-Indo-European verb-finality: Reconstruction, typology, validation. In Leonid Kulikov & Nikolaos Lavidas (eds.), *Proto-Indo-European syntax and its development*, 51-78. Amsterdam: John Benjamins.

de Hoop, Helen. 1996. *Case configuration and noun phrase interpretation*. New York: Garland Publishing.

de Hoop, Helen. 2003. Scrambling in Dutch: Optionality and optimality. In Simin Karimi (ed.), *Word order and scrambling*, 201–216. Malden: Blackwell Publishing.

Hróarsdóttir, Þorbjörg. 2009. Information structure and OV order. In Malte Zimmerman & Caroline Féry (eds.), *Information Structure: Theoretical, typological, and experimental perspectives*, 258-81. Oxford: Oxford University Press.

Huang, Yan. 2000. *Anaphora*. Oxford: Oxford University Press.

Ingham, Richard. 2000. Negation and OV order in Late Middle English. *Journal of Linguistics* 36(1), 13-38.

Ingham, Richard. 2005. The loss of Neg V -> C in Middle English. *Linguistische Berichte* 202, 171-205.

Ingham, Richard. 2007. NegP and negated constituent movement in the history of English. *Transactions of the Philological Society* 105(3), 365-397.

Jackendoff, Ray. 1972. *Semantic interpretation in generative grammar*. Cambridge: MIT Press.

Jäger, Agnes. 2018. On the history of the IPP construction in German. In Agnes Jäger, Gisella Ferraresi & Helmut Weiß (eds.), *Clause structure and word order in the history of German*, 302-23. Oxford: Oxford University Press.

Johnson, Daniel Ezra. 2009. Getting off the GoldVarb standard: Introducing Rbrul for mixed-effects variable rule analysis. *Language and Linguistics Compass* 3(1), 359-83.

Jurczyk, Rafal. 2017. The loss of grammatical gender and case features between Old and Early Middle English: Its impact on simple demonstratives and topic shift. *Studia Anglica Posnaniensia* 52(2), 203-50.

Kallulli, Dalina. 2000. Direct object clitic doubling in Albanian and Greek. In Frits Beukema, & Marcel Den Dikken (eds.), *Clitic phenomena in European languages*, 209-248. Amsterdam: Benjamins.

Karttunen, Lauri. 1976. Discourse referents. In James D. McCawley (ed.), *Notes from the linguistic underground*, 363–85. New York: Academic Press.

Kayne, Richard. 1994. *The antisymmetry of syntax*. Cambridge: MIT Press.

Keller, Frank. 2000. *Gradience in grammar: Experimental and computational aspects of degrees of grammaticality*. PhD dissertation, University of Edinburgh.

Kern, J.H. 1895. *De Limburgse Sermoenen*. A.W. Sijthoff: Leiden.

van Kemenade, Ans. 1987. *Syntactic case and morphological case in the history of English*. Dordrecht: Foris.

van Kemenade, Ans. 1997. V2 and embedded topicalisation in Old and Middle English. In Ans van Kemenade & Nigel Vincent (eds.), *Parameters of morphosyntactic change*, 326–352. Cambridge: Cambridge University Press.

van Kemenade, Ans. 2000. Jespersen's cycle revisited: formal properties of grammaticalization. In Susan Pintzuk, George Tsoulas & Anthony Warner (eds.), *Diachronic syntax: Models and mechanisms*, 51-74. Oxford: Oxford University Press.

van Kemenade, Ans. 2011. Secondary negation and information structure organization in the history of English. In Pierre Larrivée & Richard Ingham (eds.), *The Evolution of Negation: Beyond the Jespersen Cycle*, 77 - 114. Berlin: Mouton de Gruyter.

van Kemenade, Ans. 2012. Rethinking the Loss of V2. In Elizabeth Closs Traugott & Terttu Nevalainen (eds.), *The Oxford handbook of the history of English*, 1182-1199. Oxford: Oxford University Press.

van Kemenade, Ans & Bettelou Los. 2006. Discourse adverbs and clausal syntax in Old and Middle English. In Ans van Kemenade & Bettelou Los (eds.), *The handbook of the history of English*, 224–48. Malden: Blackwell Publishing.

van Kemenade, Ans & Tanja Milicev. 2011. Syntax and discourse in Old English and Middle English word order. In Dianne Jonas, John Whitman & Andrew Garrett (eds.), *Grammatical change: Origins, nature, outcomes*, 239–55. Oxford: Oxford University Press.

van Kemenade, Ans, and Marit Westergaard. 2012. Syntax and information structure: Verb second variation in Middle English. In Anneli Meurman-Solin, Maria Jose Lopez-Couso, and Bettelou Los (eds.), *Information structure and syntactic change in the history of English*, 87-118. Oxford: Oxford University Press

King, Jeffrey C. & Karen S. Lewis. 2018. Anaphora. In Edward N. Zalta (ed.), *The Stanford Encyclopedia of Philosophy (Fall 2018 Edition)*. https://plato.stanford.edu/archives/fall2018/entries/anaphora/

Klima, Edward. 1964. Negation in English. In Jerry Fodor & Jerold Katz (eds.), *The structure of language*, 246-323. Englewoord Cliffs: Prentice Hall.

Komen, Erwin. 2011a. Cesax. Nijmegen: Radboud University.

Komen, Erwin. 2011b. CorpusStudio. Nijmegen: Radboud University.

Komen, Erwin. 2013. *Finding focus: a study of the historical development of focus in English*. PhD dissertation, Radboud University

Koopman, Willem. 1990. *Word order in Old English; with special reference to the verb phrase*. PhD dissertation, University of Amsterdam.

Koster, Jan. 1975. Dutch as an SOV language. *Linguistic Analysis* 1, 111–136.

Koster, Jan. 1999. The word orders of English and Dutch: Collective vs. individual checking. *Groninger Arbeiten zur Germanistischen Linguistik 43*, 1–42. Groningen: University of Groningen.

Koster, Jan. 2000. Extraposition as Parallel Construal. Ms. University of Groningen.

Koster, Jan. 2008. A reappraisal of classical V2 and scrambling. *Groninger Arbeiten zur Germanistischen Linguistik 46*, 27–54. Groningen: University of Groningen.

Krause, Thomas & Amir Zeldes. 2016. ANNIS3: A new architecture for generic corpus query and visualization. *Digital Scholarship in the Humanities* 31(1), 118-139.

Krifka, Manfred. 2008. Basic notions of information structure. *Acta Linguistica Hungarica* 55, 243-276.

Kroch, Anthony. 1989. Reflexes of grammar in patterns of language change. *Journal of Language Variation and Change* 1(3), 199-244.

Kroch, Anthony, Beatrice Santorini, and Lauren Delfs. 2004. The Penn-Helsinki Parsed Corpus of Early Modern English (PPCEME). University of Pennsylvania.

Kroch, Anthony & Ann Taylor. 2000. Verb-object order in early Middle English. In Susan Pintzuk, George Tsoulas & Anthony Warner (eds.), *Diachronic syntax: models and mechanisms*, 132-163. Oxford: Oxford University Press.

Kroch, Anthony, Ann Taylor & Beatrice Santorini. 2000. The Penn-Helsinki Parsed Corpus of Middle English 2. University of Pennsylvania.

Lehmann, Winfred Philip. 1973. A Structural Principle of Language and Its Implications. *Language* 49(1), 47-66.

Lehmann, Winfred Philip. 1994. Gothic and the reconstruction of Proto-Germanic. In Ekke-hard König & Johan van der Auwera (eds.), *The Germanic languages*, 19–37. London: Routledge.

Lenerz, Jürgen. 1977. *Zur Abfolge nominaler Satzglieder im Deutschen*. Tübingen: Narr.

Lenerz, Jürgen. 1984. *Syntaktischer Wandel und Grammatiktheorie. Eine Untersuchung an Beispielen aus der Sprachgeschichte des Deutschen*. Tübingen: Niemeyer.

Lightfoot, David. 1979. *Principles of diachronic syntax*. Cambridge: Cambridge University Press.

Linde, Sonja. 2009. Aspects of word order and information structure in Old Saxon. In Roland Hinterhölzl & Svetlana Petrova (eds.), *Information Structure and Language Change: New Approaches to Word Order Variation in Germanic*, 367-89. Berlin: de Gruyter Mouton.

López, Luis. 2009. *A Derivational Syntax for Information Structure*. Oxford: Oxford University Press.

Los, Bettelou, Corrien Blom, Gerard Booij, Marion Elenbaas, and Ans van Kemenade. 2012. *Morphosyntactic change: A comparative study of particles and prefixes*. Cambridge: Cambridge University Press.

Lüdeling, Anke, Julia Ritz, Manfred Stede & Amir Zeldes. 2016. Corpus Linguistics and Information Structure Research. In Caroline Féry & Shinichiro Ishihara (eds.), *The Oxford Handbook of Information Structure*, 599-617. Oxford: Oxford University Press.

Mähl, Stefan. 2014. *Mehrgliedrige Verbalcomplexe im Mittelniederdeutschen. Ein Beitrag zu einer historischen Syntax des Deutschen*. Köln: Böhlau.

de Meersman, Alfons. 1980. Woordvolgorde in 14de-eeuws Brabants. *Verslagen en mededelingen van de Koninklijke Academie voor Nederlandse Taal- en Letterkunde I–II*, 94–128.

Meinunger, André. 2000. *Syntactic aspects of topic and comment*. Amsterdam: John Benjamins.

Milicev, Tanja. 2016. *Syntax and information structure of the Old English VP*. PhD dissertation, University of Novi Sad.

Miyagawa, Shigeru. 2007. Unifying Agreement and Agreement-less languages. In Meltem Kelepir & Balkiz Öztürk (eds.), *Proceedings of the Workshop on Altaic Formal Linguistics*, 47-66. Cambridge: MIT Press.

Müller, Gereon. 1999. Optimality, markedness, and word order in German. *Linguistics* 37, 777-818.

Müller, Gereon. 2004. Argument encoding and the order of elementary operations. Ms. IDS Mannheim

Musan, Renate. 2002. Informationsstrukturelle Dimensionen im Deutschen. Zur Variation der Wortstellung. *Zeitschrift für Germanistische Linguistik* 30(2), 198-221.

Neeleman, Ad. 1994. Scrambling as a D-structure phenomenon. In Norbert Corver & Henk van Riemsdijk (eds.), *Studies on scrambling: Movement and non-movement approaches to free word-order phenomena*, 387–430. Berlin: de Gruyter Mouton.

Neeleman, Ad & Fred Weerman. 1992. Case theory and the diachrony of complex predicates in Dutch. *Folia Linguistics Historica* 13(1-2), 189–217.

Neeleman, Ad & Tanya Reinhart. 1998. Scrambling and the PF interface. In Miriam Butt & Wilhelm Geuder (eds.), *The projection of arguments: Lexical and compositional factors*, 309–353. Stanford, CA: CSLI Publications.

Neeleman, Ad & Hans van der Koot. 2008. Dutch scrambling and the nature of discourse templates. *Journal of Comparative Germanic Linguistics* 11(2), 189-217.

Nunes, Jairo. 2004. *Linearization of chains and sideward movement.* Cambridge: MIT Press.

Nunes, Jairo. 2011. The Copy Theory. In Cedric Boeckx (ed.), *The Oxford Handbook of Linguistic Minimalism*. Oxford: Oxford University Press.

Paardekooper, Petrus. 1955. *Syntactische verkenningen*. Den Bosch: Malmberg.

Peters, Robert. 1973. Mittelniederdeutsche Sprache. In Jan Goossens (ed.), *Niederdeutsch - Sprache und Literatur: Eine Einführung*, 66-115. Neumünster: Karl Wachholtz Verlag.

Peters, Robert. 2003. Variation und Ausgleich in den Mittelniederdeutschen Schreibsprachen. In Michèle Goyens & Werner Verbeke (eds.), *The dawn of the written vernacular in Western Europe*, 427-440. Leuven: Leuven University Press.

Petran, Florian, Marcel Bollman, Stefanie Dipper & Thomas Klein. 2016. ReM: A reference corpus of Middle High German - corpus compilation, annotation and access. *Journal for Language Technology and Computational Linguistics* 31.2, 1-15.

Petrova, Svetlana. 2009. Information structure and word order variation in the Old High German Tatian. In Roland Hinterhölzl & Svetlana Petrova (eds.), *Information structure and language change: New approaches to word order variation in Germanic*, 251-79. Berlin: de Gruyter Mouton.

Petrova, Svetlana. 2012a. The impact of focusing and defocusing on word order: Changes at the periphery in Old English and Old High German. In Terttu Nevalainen & Elizabeth Closs Traugott (eds.), *The Oxford Handbook of the History of English*, 846-858. Oxford: Oxford University Press.

Petrova, Svetlana. 2012b. Multiple XP-fronting in Middle Low German root clauses. *The Journal of Comparative Germanic Linguistics* 15(2), 157-188.

Petrova, Svetlana. 2015. Free word order in Germanic: Insights from object order in Middle Low German. *Linguistische Berichte* 244, 355-82.

Petrova, Svetlana & Roland Hinterhölzl. 2010. Evidence for Two Types of Focus Positions in Old High German. In Gisella Ferraresi & Rosemarie Lühr (eds.), *Diachronic studies on information structure: Language acquisition and change*, 189 - 217. Berlin, Boston: De Gruyter.

Petrova, Svetlana & Michael Solf. 2009. On the methods of information-structural analysis in historical texts: A case study on Old High Germanc. In Roland Hinterhölzl & Svetlana Petrova (eds.), *Information structure and language change: New approach to word order variation in Germanic*, 121-160. Berlin: de Gruyter Mouton.

Petrova, Svetlana & Augustin Speyer. 2011. Focus movement and focus interpretation in Old English. *Lingua* 121(11), 1751-1765.

Petrova, Svetlana & Helmut Weiβ. 2018. OV versus VO in Old High German: The case of thaz-clauses. In Agnes Jäger, Gisella Ferraresi, & Helmut Weiß (eds.), *Clause structure and word order in the history of German*, 263 - 276. Oxford: Oxford University Press.

Pintzuk, Susan. 1996. Old English verb-complement word order and the change from OV to VO. *York Papers in Linguistics* 17, 241-264.

Pintzuk, Susan. 1999. *Phrase structures in competition: Variation and change in Old English word order*. New York: Garland Publishing.

Pintzuk, Susan. 2002. Verb-object order in Old English: Variation as grammatical competition. In David Lightfoot (ed.), *Syntactic effects of morphological case*, 276–299. Oxford: Oxford University Press.

Pintzuk, Susan. 2005. Arguments against a universal base: Evidence from Old English. *English Language and Linguistics* 9(1), 115–138.

Pintzuk, Susan & Anthony Kroch. 1989. The rightward movement of complements and adjuncts in the Old English of "Beowulf". *Language Variation and Change* 1(2), 115–43.

Pintzuk, Susan & Ann Taylor. 2004. Objects in Old English: Why and how Early English is not Icelandic. *York Papers In Linguistics* 2(1), 137–50.

Pintzuk, Susan & Ann Taylor. 2006. The loss of OV in the History of English. In Ans van Kemenade & Bettelou Los (eds.), *The Handbook of the History of English*, 249-278. Oxford: Blackwell Publishing.

Piotrowska, Alicja & Dominika Skrzypek. 2021. Familiar vs. unique in a diachronic perspective: Case study of the rise of the definite article in North Germanic. *Glossa: A journal of general linguistics* 6(1). https://doi.org/10.5334/gjgl.1178

Pires, Acrisio & Sarah G. Thomason. 2008. How much syntactic reconstruction is possible? In Gisella Ferraresi & Maria Goldbach (eds.), *Principles of Syntactic Reconstruction*, 27-72. Amsterdam: John Benjamins.

van de Poel, Rita. 2019. Corpus Old Frisian. https://corpora.ato.ivdnt.org/corpus-frontend/OFR/search/

Polinsky, Maria. & Omer Preminger. 2014. Case and grammatical relations. In Andrew Carnie, Dan Siddiqi, & Yosuke Sato (eds.), *Routledge handbook of syntax*, 150–166. New York: Routledge.

Pollock, Jean-Yves. 1989. Verb movement, universal grammar, and the structure of IP. *Linguistics Inquiry* 20, 365-424.

Preminger, Omer. in press. Taxonomies of case and ontologies of case. In Elena Anagnostopoulou, Christina Sevdali, & Dionysois Mertyris (eds.), *On the place of case in Grammar*. Oxford: Oxford University Press.

Prince, Ellen F. 1981. Toward a taxonomy of given-new information. In Peter Cole (ed.), *Radical Pragmatics*, 223–256. New York: Academic Press.

Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech & Jan Svartvik. 1972. *A grammar of contemporary English*. London: Longman.

Radford, Andrew & Michèle Vincent. 2012. On the feature composition of participial light verbs in French. In Laura Brugé et al. (eds.), *Functional heads: The cartography of syntactic structure*, 208-219. Oxford: Oxford University Press.

Randall, Beth, Ann Taylor & Anthony Kroch. 2005. CorpusSearch2. Computer program. http://corpussearch.sourceforge.net/credits.html

Rauch, Irmengard. 1992. *The Old Saxon language: grammar, epic narrative, linguistic interference*. New York: Peter Lang Publishing.

Rauth, Philip. 2021. Diachronic object scrambling in German ditransitives. Paper presented at 35th Comparative Germanic Syntax Workshop, University of Trento.

van Reenen, Pieter & Maaike Mulder. 1993. Een gegevensbank van 14de-eeuwse Middelnederlandse dialecten op de computer. *Lexikos* 3, 259-81.

Reinhart, Tanya. 1981. Pragmatics and linguistics: An analysis of sentence topics. *Philosophica* 27, 53–94.

Reinhart, Tanya. 2006. *Interface strategies.* Cambridge, MA: MIT Press.

Reis, Marga. 1987. Die Stellung der Verbargumente im Deutschen - Stilübungen zum Grammatik: Pragmatik-Verhältnis. In Inger Rosengren (ed.), *Sprache und Pragmatik. Lunder Symposium 1986*, 139-177. Stockholm: Almqvist & Wiksell International.

ReN-Team. 2017. Referenzkorpus Mittelniederdeutsch/Niederrheinisch (1200-1650). Hamburger Zentrum für Sprachkorpora. https://www.slm.uni-hamburg.de/en/ren/ueber-ren.html

Ries, John. 1880. *Die Stellung von Subject und Prädicatsverbum im Hêliand, nebst einem Anhang metrischer Excurse*. Strassburg: Trübner.

Rizzi, Luigi. 1997. The fine structure of the left periphery. In Liliane Haegeman (ed.), *Elements of grammar: A handbook of generative syntax*, 281-337. Dordrecht: Kluwer.

Roberts, Ian. 1985. Agreement parameters and the development of the English modal auxiliaries. *Natural Language and Linguistic Theory* 3, 21-58.

Roberts, Ian. 1997. Directionality and word order change in the history of English. In Ans van Kemenade & Nigel Vincent (eds.), *Parameters of Morphosyntactic Change*, 397-426. Cambridge: Cambridge University Press.

Roberts, Ian. 2019. *Parameter hierarchies and Universal Grammar. Oxford*: Oxford University Press.

Robinson, Orrin Warner. 1993. *Old English and its closest relatives: A survery of the earliest Germanic Languages*. London: Routledge

Rothmayr, Antonia. 2006. The binding paradox in German double object constructions. *Linguistische Berichte* 206, 195-215.

Sapp, Christopher. 2011. *The verbal complex in subordinate clauses from Medieval to Modern German*. Amsterdam: John Benjamins.

Sapp, Christopher. 2014. Extraposition in Middle and New High German. *Journal of Comparative Germanic Linguistics* 17, 129-56.

Sapp, Christopher. 2016. Word Order Patterns in the Old High German right periphery and their Indo-European Origins. *Diachronica* 33(3), 367 - 411.

Sato, Kiriko. 2012. Ælfric's linguistic and stylistic alterations in his adaptations from the Old English *Boethius*. *Neophilologus* 96, 631–640.

Schaeffer, Jeannette. 2000. *The acquisition of direct object scrambling and clitic placement: Syntax and pragmatics*. Amsterdam: John Benjamins.

Schallert, Oliver. 2010. Als Deutsch noch nicht OV war. Althochdeutsch im Spannungsfeld zwischen OV und VO. In Arne Ziegler (ed), *Historische Textgrammatik und historische Syntax des Deutschen*, 365-94. Berlin: de Gruyter.

Schlachter, Eva. 2012. *Syntax und Informationsstruktur im Althochdeutschen. Untersuchungen am Beispiel der Isidor-Gruppe*. Heidelberg: Winter.

Schmid, Tanja. 2005. *Infinitivus Pro Participio as a repair strategy*. Amsterdam: John Benjamins.

Schoenmakers, Gert-Jan. 2020. Freedom in the Dutch middle field: Deriving discourse structure at the syntax-pragmatics interface. *Glossa: A journal of general linguistics* 5(1). https://doi.org/10.5334/gjgl.1307

Schoenmakers, Gert-Jan. 2022. Definite objects in the wild: A converging evidence approach to scrambling in the Dutch middle-field. PhD dissertation, Radboud University.

Schoenmakers, Gert-Jan & Peter de Swart. 2019. Adverbial hurdles in Dutch scrambling. In Anja Gattnar, Robin Hörnig, Melanie Störzer, & Sam Featherston (eds.), *Proceedings of Linguistic Evidence 2018: Experimental data drives linguistic theory*, 124–145. Tübingen: University of Tübingen.

Schoenmakers, Gert-Jan, Marjolein Poortvliet & Jeannette Schaeffer. 2021. Topics in Dutch scrambling. *Natural Language and Linguistic Theory*. https://doi.org/10.1007/s11049-021-09516-z

De Schutter, Georges. 2003. De zinsbouw in het vroege Middelnederlands: Een case study. *Taal en Tongval* 55, 41–67.

Schwarz, Florian. 2009. *Two types of definites in natural language*. PhD dissertation, University of Massachusetts Amherst.

Sheehan, Michelle, Theresa Biberauer, Ian Roberts & Anders Holmberg. 2017. *The Final-Over-Final Condition*. Cambridge: MIT Press.

Sigurðsson, Halldór Á. 2012. Minimalist C/case. *Linguistic Inquiry* 43(1), 191–227.

van der Sijs, Nicoline, Ans van Kemenade & Margit Rem. 2018. Corpus Laatmiddel- en Vroegnieuwnederlands (CLVN). Accessible through https://www.nederlab.nl/.

Sommerer, Lotte. 2015. The influence of constructions in grammaticalization: Revisiting category emergence and the development of the definite article in English. In Jóhanna Barðal, Elena Smirnova, Lotte Sommerer & Spike Gildea (eds.), *Diachronic construction grammar*, 107-133. Amsterdam: John Benjamins.

Somers, Katerina & Shannon Dubenion-Smith. 2014. The intersection between syntax and meter in the Old Saxon Hêliand. *Amsterdamer Beiträge zur älteren Germanistik* 72(1), 83-134.

Speyer, Augustin. 2015. Object order and the thematic hierarchy in older German. In Jost Gippert & Ralf Gehrke (eds.), *Historical Corpora: Challenges and Perspectives*, 101-124. Tübingen: Narr.

Speyer, Augustin. 2018a. Periphrastic verb forms. In Agnes Jäger, Gisella Ferraresi & Helmut Weiß (eds.), *Clause structure and word order in the history of German*, 289-301. Oxford: Oxford University Press.

Speyer, Augustin. 2018b. Serialization of full noun phrases in the history of German. In Agnes Jäger, Gisella Ferraresi & Helmut Weiß (eds.), *Clause structure and word order in the history of German*, 155-180. Oxford: Oxford University Press.

Stiles, Patrick V. 2013. The Pan-West Germanic isoglosses and the subrelationships of West-Germanic to other Branches. *NOWELE. North-Western European Language Evolution* 66(1), 5-38.

Stroop, Jan. 1970. Systeem in gesproken werkwoordsgroepen. In Jan Stroop (ed.), *Nederlands dialectonderzoek*, 247-264. Amsterdam: Huis aan de drie grachten.

Struckmeier, Volker. 2017. Against information structure heads: A relational analysis of German scrambling. *Glossa: a journal of general linguistics* 2(1), 1-29.

Struik, Tara. In press. OV/VO variation and information structure in Old Saxon and Middle Low German. *Journal of Historical Syntax*.

Struik, Tara & Chiara de Bastiani. 2018. Verb placement and discourse relations in OE clauses: VAux as a marker of subordination. Paper presented at the Discourse Grammar and Sentence Grammar Workshop, Georg-August-Universität Göttingen.

Struik, Tara & Gert-Jan Schoenmakers. 2021. When information structure exploits syntax: The relation between the loss of VO and scrambling in Dutch. Ms. Radboud University.

Struik, Tara, & Ans van Kemenade. 2020. On the givenness of OV word order: a (re)examination of OV/VO variation in Old English. *English Language and Linguistics* 24(1), 1-22.

Struik, Tara & Ans van Kemenade. 2022. Information structure and OV word order in Old and Middle English: A phase-based approach. *Journal of Comparative Germanic Linguistics* 25(1).

de Swart, Henriëtte & Helen de Hoop. 2000. Topic and focus. In Lisa Cheng & Rint Sybesma (eds.), *The first Glot international state-of-the-article book: The latest in linguistics*, 105–130. Berlin: de Gruyter Mouton.

Szczepaniak, Renata & Johanna Flick (eds.). 2020. *Walking on the grammaticalization path of the definite article*. Amsterdam: John Benjamins.

Szmrecsanyi, Benedikt. 2004. On operationalizing syntactic complexity. In Gérard Purnelle, Cédrick Fairon & Anne Dister (eds.), *Le poids des mots. Proceedings of the 7th International Conference on Textual Data Statistical Analysis*, 1032-9. Louvain-la-Neuve: Presses universitaires de Louvain.

Taylor, Ann. 2008. Contact effects of translation: Distinguishing two kinds of influence in Old English. *Language Variation and Change* 20, 341-365.

Taylor, Ann, Arja Nurmi, Anthony Warner, Susan Pintzuk, & Terrtu Nevalainen. 2006. Parsed Corpus of Early English Correspondence. University of York and University of Helsinki.

Taylor, Ann & Susan Pintzuk. 2011. The interaction of syntactic change and information status effects in the change from OV to VO in English. *Catalan Journal of Linguistics* 10, 71-94.

Taylor, Ann & Susan Pintzuk. 2012a. Rethinking the OV/VO alternation in Old English: The effect of complexity, grammatical weight and information status. In Terttu Nevalainen & Elizabeth Closs Traugott (eds.), *The Oxford Handbook of the History of English*. Oxford: Oxford University Press.

Taylor, Ann & Susan Pintzuk. 2012b. Verb order, object position and information status in Old English. *York Papers in Linguistics Series* 2(12a), 29-52.

Taylor, Ann & Susan Pintzuk. 2014. Testing the theory: Information structure in Old English. In Kristin Bech & Kristine Gunn Eide (eds.), *Information structure and syntactic change in Germanic and Romance languages*, 53-77. Amsterdam: John Benjamins.

Taylor, Ann, Anthony Warner, Susan Pintzuk & Frank Beths. 2003. The York-Toronto-Helsinki Parsed Corpus of Old English Prose. University of York.

Tiemann, Juliane. 2019. Syntactic variation in Old Norwegian and the role of information structure and prosodic weight. Paper presented at ICHL24, Australian National University.

Tomaselli, Alessandra. 1995. Cases of verb third in Old High German. In Allan Battye & Ian Roberts (eds.), *Clause Structure and Language Change*, 345-369. Oxford: Oxford University Press.

Unsworth, Sharon. 2005. *Child L2, Adult L2, Child L1: Differences and Similarities. A study on the acquisition of direct object scrambling in Dutch*. PhD dissertation, Utrecht University.

Vallduví, Enric. 1990. *The informational component*. PhD dissertation, University of Pennsylvania.

van de Velde, Freek. 2010. The emergence of the determiner in the Dutch NP. *Linguistics*, 48(2), 263-299. https://doi.org/10.1515/ling.2010.009

Vennemann, Theo. 1976. Categorical grammar and the order of meaningful elements. In Alphone Juilland (ed.), *Linguistics studies offered to Joseph Greenberg on the occassion of his sixtieth birthday*, 615-34. Saratoga: Anma Libri.

Verhagen, Arie. 1986. *Linguistic theory and the function of word order in Dutch: A study on interpretive aspects of the order of adverbials and noun phrases*. PhD dissertation, Vrije Universiteit Amsterdam.

Verheijen, Lieke, Bettelou Los & Pieter de Haan. 2013. Information Structure: The final hurdle? The development of syntactic structures in (very) advanced Dutch EFL writing. *Dutch Journal of Applied Linguistics* 2, 92-107.

Versloot, Arjen. 2004. Why Old Frisian is still quite old. *Folia Linguistics Historica* 25(1-2), 253-298.

Vikner, Sten. 1994. Scandinavian object shift and West Germanic scrambling. In Norbert Corver & Henk van Riemsdijk (eds.), *Studies on scrambling: Movement and non-movement approaches to free word-order phenomena*, 487–517. Berlin: Mouton de Gruyter.

Vikner, Sten. 2001. Verb movement variation in German and Optimality Theory. Ms. University of Tübingen

Vikner, Sten. 2005. Immobile complex verbs in Germanic. *Journal of Comparative Germanic Linguistics* 8(1), 83-115.

Vikner, Sten. 2006. Object shift. In Martin Everaert & Henk van Riemsdijk (eds.), *The Blackwell companion to syntax*, 392–436. Malden: Blackwell Publishing.

Viti, Carlotta. 2015. *Variation und Wandel in der Syntax der alten indogermanischen Sprachen*. Tübingen: Narr.

Wackernagel, Jacob. 1891. Über ein Gesetz der Indogermanischen Wortstellung. *Indogermanische Forschungen. Zeitschrift für Indogermanische Sprach- und Altertumskunde* 1, 333-436.

Walkden, George. 2014. Object position and Heavy NP Shift in Old Saxon and beyond. In Kristin Bech & Kristine M. Eide (eds.), *Information structure and word order change in Germanic and Romance languages*, 313-240. Amsterdam: John Benjamins Publishing Company.

Walkden, George. 2015. Verb-third in early West Germanic: A comparative perspective. In Theresa Biberauer & George Walkden (eds.), *Syntax over time: Lexical, morphological, and information-structural interactions*, 236-248. Oxford: Oxford University Press.

Walkden, George. 2016. The HeliPaD: A Parsed Corpus of Old Saxon. *International Journal of Corpus Linguistics* 24(1), 559-571.

Walkden, George. 2017. Language contact and V3 in Germanic varieties new and old. *Journal of Comparative Germanic Linguistics* 20(1), 49-81.

Wallage, Phillip W. 2017. *Negation in Early English*. Cambridge: Cambridge University Press.

Wallenberg, Joel C. 2009. *Antisymmetry and the conservation of c-command: Scrambling and phrase structure in synchronic and diachronic perspective*. PhD dissertation, University of Pennsylvania.

Wallenberg, Joel C. 2015. Antisymmetry and Heavy NP Shift across Germanic. In Theresa Biberauer & George Walkden (eds.), *Syntax over time: Lexical, morphological, and information-structural interactions*, 336-349. Oxford: Oxford University Press.

Ward, Gregory & Betty J. Birner. 2001. Discourse and information structure. In Deborah Schriffrin, Deborah Tannen & Heidi E. Hamilton (eds.), *The handbook of discourse analysis*, 119-137. Malden: Blackwell Publishing.

Warner, Anthony. 1993. *English auxiliaries: structure and history*. Cambridge: Cambridge University Press.

Wasow, Thomas. 1997. Remarks on grammatical weight. *Language Variation and Change* 9(1), 81–105.

Wasow, Thomas. 2002. *Postverbal behavior*. Stanford: CSLI Publications.

Wasow, Thomas & Jennifer Arnold. 2003. Post-verbal constituent ordering in English. In Günther Rohdenburg & Britta Mondford (eds.), *Determinants of Grammatical Variation in English*, 119–54. Berlin: Mouton de Gruyter.

Watanabe, Akira. 2009. A parametric shift in the D-system in Early Middle English: Relativization, articles, adjectival inflection, and indeterminates. In Paola Crisma & Giuseppe Longobardi (eds.), *Historical syntax and linguistic theory*, 358-74. Oxford: Oxford University Press.

Weerman, Fred. 1987. The change from OV to VO as a possible change. In Frits Beukema & Peter Coopmans (eds.), *Linguistics in the Netherlands 1987*, 223–232. Dordrecht: Foris.

Weerman, Fred. 1989. *The V2 conspiracy: A synchronic and a diachronic analysis*. Dordrecht: Foris.

Weil, Henri. 1844. *De l'ordre des mots dans les langues anciennes comparées aux langues modernes*. Paris: Didier Érudition.

Weiß, Helmut. 2006. Die rechte Satzperipherie im Althochdeutschen. Zur Verbstellung in *dass*-Sätzen. Ms., Frankfurt/Main.

Weiß, Helmut. 2018. The Wackernagel complex and pronoun raising. In Agnes Jäger, Gisella Ferraresi & Helmut Weiß (eds.), *Clause structure and word order in the history of German*, 132-154. Oxford: Oxford University Press.

West, Martin. 2011. *Old Avestan syntax and stylistics*. Berlin: de Gruyter.

Westergaard, Marit. 2010. Cue-based acquisition and information structure drift in diachronic language development. In Gisella Ferraresi & Rosemarie Lühr (eds.), *Diachronic studies on information structure: Language acquisition and change*, 87–116. Berlin: de Gruyter Mouton.

van der Wurff, Wim. 1997. Deriving object-verb order in Late Middle English. *Journal of Linguistics* 33, 485-509.

Wurmbrand, Susi. 2001. *Infinitives: restructuring and clause structure*. Berlin: Mouton de Gruyter.

Wurmbrand, Susi. 2004. West Germanic verb clusters: The empirical domain. In Katalin É. Kiss & Henk van Riemsdijk (eds.), *Verb clusters: A study of Hungarian, German and Dutch*. Amsterdam: John Benjamins.

Wurmbrand, Susi. 2006. Verb clusters, verb raising, and restructuring. In Martin Everaert & Henk van Riemsdijk (eds.), *The Blackwell Companion to Syntax*, 229-343. Malden: Blackwell Publishing.

Vanden Wyngaerd, Guido. 1989. Object shift as an A-movement rule. In Philip Branigan, Jill Gaulding, Miori Kubo, & Kumiko Murasugi (eds.), *MIT working papers in linguistics 11*, 256–271. Cambridge, MA: MIT.

Zeijlstra, Hedde. 2004. *Sentential Negation and Negative Concord*. PhD dissertation, University of Amsterdam.

Zeller, Jochen. 2008. The subject marker in Bantu as an antifocus marker. *Stellenbosch Papers in Linguistics* 38, 221-254.

Zubin, David A. & Klaus-Michael Köpcke. 1985. Cognitive constraints on the order of subject and object in German. *Studies in Language* 9, 77-107.

Zubizarreta, Maria Luisa. 1998. *Prosody, focus and word order*. Cambridge: MIT Press.

Zwart, Jan-Wouter 1993. *Dutch syntax: A Minimalist approach.* PhD dissertation, University of Groningen.

Zwart, Jan-Wouter. 1996. Clitics, scrambling, and head movement in Dutch. In Aaron Halpern & Arnold Zwicky (Eds.), *Approaching second: Second position clitics and related phenomena*, 579–611. Stanford, CA: CSLI Publications.

Zwart, Jan-Wouter. 1994. Dutch is head-initial. *The Linguistic Review* 11(3-4), 377-406.

Zwart, Jan-Wouter. 1997. *Morphosyntax of verb movement: A Minimalist approach to the syntax of Dutch*. Dordrecht: Springer.

Zwart, Jan-Wouter. 2011. *The Syntax of Dutch*. Cambridge: Cambridge University Press.

APPENDIX 1

This appendix serves as a materials and methodology section and contains a detailed elaboration of the data included in this study, our methodological choices, and the annotation scheme used. The data collected is an elaboration on Struik and van Kemenade (2020) and follows their methodology closely. The data selection and annotation procedure are the focus of section 1. Section 2 provides an overview of the texts included in the study and in section 3 we discuss our approach to the study of Latin translations. Section 4 contains a discussion of new preverbal objects.

1. Data selection and annotation

The data was automatically collected by querying XML versions of the texts section 2, Table 1, using CorpusStudio software (Komen 2011b). CorpusStudio generates a database of syntactically annotated clauses with user-customized features, which can be further annotated within Cesax (Komen 2011a). The data was collected based on the following selection criteria:

- Subclauses with a finite and non-finite verb, to abstract from verb movement to a position in the left periphery of the clause.
- Only full DP direct objects, hence excluding indirect objects and pronouns. Pronouns were excluded, as they are very dominantly preverbal (cf. Pintzuk 2005). We excluded indirect objects for two reasons: 1) their base-generated position is different and 2) their function is different from that of direct objects. Koopman (1990) shows that indirect object placement in OE is highly erratic.
- Quantified and negated objects were analyzed in a separate database, as their information structure is hard to determine and while these objects operate within the same syntactic framework, their behavior seems to be motivated differently, as we argue.

The databases contain the following relevant features:

- Word order:
  We included all possible word order combinations with a finite verb, a non-finite verb, and a direct object. V-O-Aux orders are unattested. The patterns are illustrated in (1).

(1) a. O-Aux-V
and gif hi **þone lofsang** *willað* æt þam
and if they that psalm want at those
wundrum singan
wonders sing
'and if they sing that psalm for the miracles…'
(ÆLS_[Swithun]:237.4375)

b. Aux-O-V
þurh þa heo *sceal* **hyre** **scippend**
through which it must its creator
understandan
understand
'through which it must understand its creator'
(ÆLS_[Christmas]:157.125)

c. Aux-V-O
þæt ic *mihte* geseon **þone scinendan** **engel**
that I might see that shining angel
'that I might see the shining angel'
(ÆLS_[Cecilia]:46.7137)

d. O-V-Aux
gif heo **þæt** **bysmor** forberan *wolde*
if she that disgrace tolerate would
'if she would tolerate that disgrace'
(ÆLS_[Eugenia]:185.305)

e. V-Aux-O
þæt he feccan *sceolde* **þæt** **feoh** mid reaflace
that he fetch should the goods with robbery
'that he should steal the goods'
(ÆLS_[Maccabees]:760.5327)

Note that our dataset differs in two ways from that in Taylor and Pintzuk (T&P, 2012a, 2012b) with regard to word order: 1) we include O-Aux-V orders. T&P exclude these orders, claiming that they are the result of factors other than information structure, without specifying any arguments. Petrova and Speyer (2011), in a study on

the influence of focus on OV/VO variation, do consider O-Aux-V orders. They find that all objects in O-Aux-V order are (contrastively) focused, which we take to mean that O-Aux-V orders can be – and in fact are – driven by information structural considerations. 2) we include the full range of AuxV orders, as we do not want to, a priori, assume that AuxV and AuxV orders are fundamentally different. T&P take only one-third of the AuxV orders to equal the number of VAux orders, apparently for comparison, because they consider AuxV and VAux orders to be the result of different grammars (T-initial or T-final).

- Weight:
  We measured weight in the log base 2 of the number of letters, including relative clauses. Using the log base 2 of the number of letters controls for the fact that an increase from, say, 4 to 5 letters will have a much larger impact on the perception of heaviness than an increase from 23 to 24 letters. The choice to use number of letters to operationalize weight is for reasons of practicality. However, nothing crucial hinges on this way of measuring constituent weight, as all continuous measures of weight are highly correlated (Szmrecsanyi 2004).

  Furthermore, since our main interest is the effect of information structure, weight was included as a control variable. Since Behaghel (1909) it has been assumed that heavier objects are more likely to be placed later in the sentence. This leads to the question if weight and information structure are not in fact the same variable, as constituents that are given tend to be shorter than constituents that are new. However, this is not the case. Wasow and Arnold (2003) show that for PDE, although highly correlated, weight and information structure are independent. Taylor and Pintzuk (2012a, 2012b) and Struik and van Kemenade (2020) demonstrate that weight and information structure are independent in OE as well.

- Information Structure
  Our coding scheme is based on the Pentaset annotation guidelines (Komen 2013), which can be used to label the full range of objects – referential as well as non-referential and is based on reference within a text. The Pentaset is divided into 5 categories: Identity, Inferred, Assumed, New and Inert, which are illustrated below. Since Inert objects are non-referential, they were excluded from the present analysis. To facilitate statistical processing of the data, we collated Identity, Inferred and Assumed objects into one category ‘Given’.

These objects are traditionally analyzed as given and did not show significant differences in our dataset (see also Taylor and Pintzuk 2014 for a more detailed analysis of the (limited) effect of using different annotation labels).

Given objects

Identity: Objects are in an Identity relation with an antecedent if the antecedent is identifiable antecedent in the text. In the case of (2), the relevant object is *þæt tempel* 'that temple', which is exactly the same temple as *Þæt anlipige Godes tempel* 'that single God's temple' which is mentioned in the preceding sentence.

(2) **Þæt** **anlipige** **Godes** **tempel** wæs wundorlice
that single God's temple was wondrously
gecræft þurh gastlicum gerynum;Dauid se
made through ghostly mysteries.David the
mæra cyning hæfde gemynt þæt he wolde **þæt**
great king had designed that he would that
tempel aræran đam ælmihtigan Gode to wurđmynte.
temple rear that almighty God to honor
'that single temple of God was wondrously contrived through ghostly mysteries. David, the great king, had designed that he would rear that temple to the honor of the almighty God.'
(ÆCHom_II,_45:335.10.7522-23)

Inferred: Inferred objects are elaborating inferables in the sense of Birner (2006), which means that a referent has not been mentioned before, but can be inferred from another, closely related constituent. These are frequently cases of inalienable possession. In (3), we can infer the existence of *ure heortan* 'our hearts' from the fact that the possessors introduced as *we* 'we', as a heart is an intrinsic part of a human.

(3) We magan ongytan þæt he forþon us gesette þæt we
We may perceive that he indeed us formed that we
hine biddan sceoldan, þy **we** sceolan þonne eac, in
him pray should so we should then also in
þa tid þæs gebedes, **ure** **heortan** geclænsian
that time of-that prayer our hearts cleanse
from oþrum geþohtum.
from other thoughts
'We may perceive that he has formed us that we should pray to him, so we must during our time of prayer cleanse our hearts from wayward desires.

(HomS_8_[BlHom_2]:21106.266)

Assumed: assumed objects do not have a textual referent, but are objects that are part of world/encyclopedic knowledge or are situationally evoked. In (4), the object *þas world* is part of world knowledge; it requires no new introduction to establish it as a discourse referent. The object in (5) is situationally evoked; it is part of the *Catholic Homilies*, which were written to be delivered to a Christian audience.

(4) þa þe God **þas** **world** to forlæten hæfþ
who the God this world to permit has
'to whom God has given this world'

(HomS_10_[BlHom_3]:37.208.500)

(5) þæt is þæt we sceolon **ða** **gecnyrdnysse** **ure**
that is that we should that fervency our
bene mid geearnunge godes weorces
prayer with merit good works
uparæran
heighten
'that we should heighten the fervency of our prayer with the merit of good works'

(ÆCHom_II,_9:76.131.1534)

New objects

New: objects that have not been mentioned before and introduce a new referent. The object in (6) introduces a new discourse referent; the Lord's prophet has not been mentioned before. This is emphasized by the introductory phrase *Samuhel gehaten, haliges lifes mann* 'who is called Samuhel, a man of holy life' that follows the object.

(6) Nu segð se wyrdwritere þæt seo wicce sceolde
Now says the historian that the witch should
aræran þa of deaþe **þone Drihtnes witegan**
raise then from death the Lord's prophet
Samuhel gehaten, haliges lifes mann,
Samuel called holy life's man
'… now says the historian that the witch should then raise from the dead the Lord's prophet, named Samuel, a man of holy life.'
(ÆHom_30:45.4103)

Bridging inferables in the sense of Birner (2006) were also annotated as new, because the inference cannot be made without the explicit link to an earlier referent (often in the form of a possessive), so the object itself is truly new. In (7), the existence of a hut cannot be inferred from the existence of the leper to which it belongs.

(7) … cwæð ðæt he wolde genealæcan **his hulce** gif
… said that he would reach his hut if
he mihte.
he might
'… [the leper] said that he wished to reach his hut, if he could'
(ÆCHom_I,_23:369.136.4634)

Inert

Inert objects do not participate in the discourse. They do not introduce a new referent,
nor can they be referred back to. A particularly large class is that of bare nouns which form a tight semantic unit with the verb, as in (8) and are in most cases collocations. These objects appear semantically incorporated with their verb and are frequently preverbal and adjacent to the verb, which suggests that they might also be syntactically incorporated (cf. Farkas and de Swart 2003 and sources cited there).

(8) Gesælige hi wurdon geborene: þæt hi moston
blessed they are born that they must
for his intingan **deað** þrowian.
for his sake death suffer
'Blessed they were born that they might for his sake suffer death'
(ÆCHom_II,_45:344.293.7705)

Other inert objects are objects that are abstract such *ece reste* in (9) or objects which do not have a specific referent, as in (10).

(9) þæt we sceolan on þisse sceortan tide geearnian
that we should in this short period earn
ece ræste
eternal rest
'that we should earn eternal rest in this short period'
(HomS_21_[BlHom_6]:83.292.1030)

(10) þæt nan man ne sceal **sceattas** niman for
that no man not shall treasures take for
Godes cyrcan
God's church
'that no man shall take treasures for God's church'
(ÆCHom_II,_45:344.293.7705)

Note that we crucially depart from Taylor and Pintzuk (2012) with regard to objects as in (10); they treat these as short-term discourse referents (in the sense of Karttunen 1976) and annotate them as new.

2. Text selection

The data collected for this study are collected from the York-Toronto-Helsinki Corpus of Old English prose (henceforth YCOE, Taylor et al. 2003) for the Old English materials and the Penn-Helsinki Parsed Corpus of Middle English, second edition (PPCME2, Kroch et al. 2000) for the early Middle English materials. We excluded official documents and law texts, due to their formulaic nature, and the Ormulum from the M1 period, as this text is written in metrical verse. Next to data from Old English and early Middle English, we also collected all subclauses with two verbs and a direct object from late Middle English and early Modern English to illustrate the diachronic development from OV to VO, using the PPCME2 (Kroch et al. 2000), PPCEME (Kroch et al. 2004) and PCEEC (Taylor et al. 2006) corpora. We

did not annotate this material for information structure, as the numbers of OV are too low to reach significance. Since we did not exclude any texts from these corpora, it suffices to say that we included all material from the relevant periods. Table 1 gives an overview of the primary sources.

Corpus	File name	Full title
YCOE non-translated	coaelhom.o3	Ælfric's Homilies Supplemental
		Ælfric's Lives of Saints
	coaelive.o3	Blickling Homilies
	coblick.o23	Ælfric's Catholic Homilies I
	cocathom1.o3	Ælfric's Catholic Homilies I
	cocathom2.o3	Anglo-Saxon Chronicle A
	cochrona-1.o23	
	cochrona10.o23	
	cochrona2a.o23	
	cochrona2b.o23	
	cochrona2c.o23	Ælfric's Epilogue to Genesis
	coepigen.o3	Martyrology
	comart3.o23	Ælfric's Preface to Catholic
	coprefcath1.o3	Homilies I
		Ælfric's Preface to Catholic Homilies II
	coprefcath2.o3	Ælfric's Preface to Genesis
		Ælfric's Preface to Lives of
	coprefgen.o3	Saints
	copreflives.o3	
YCOE translated	cobede.o2	Bede's History of the English Church
	coboeth.o2	Boethius, Consolation of Philosophy
	cocura.o2	Cura Pastoralis
	coorosiu.o2	Orosius
PPCME2	Early Middle English (M1)	
	cmancriw-1.m1	Ancrene Riwle
	cmancriw-2.m1	
	cmhali	Hali Meidhad
	cmjulia	St. Juliana
	cmkathe	St. Katherine
	cmlamb1	Lambeth Homilies
	cmlambx1	
	cmmarga	St. Margaret

	cmpeterb	Peterborough Chronicle
	cmsawles	Sawles Warde
	cmtrinit	Trinity Homilies
	Late Middle English (M3/4)	
	cmastro	Treatise on the Astrolabe
	cmbenrul	The rule of St. Benet
	cmbrut3	The Brut or The Chronicles of England
	cmcapchr	Capgrave's Chronicle
	cmcapser	Capgrave's Sermon
	cmcloud	The Cloud of Unknowing
	cmedmund	The Life of St. Edmund
	cmedthor	Mirror of St. Edmund
	cmedvern	Mirror of St. Edmund
	cmequato	The Equatorie of the Planets
	cmfitzja	Richard Fitzjames' Sermo die Lune
	cmgaytry	Dan Jon Gaytryge's Sermon
	cmgregor	Gregory's Chronicle
	cmhilton	Hilton's Eight Chapters on Perfection
	cmhorses	A Late Middle English Treatise on Horses
	cminnoce	In Die Innocencium
	cmjulnor	Julian of Norwich's Revelations of Divine Love
	cmkempe	The Book of Margery Kempe
	cmmalory	Malory's Morte Darthur
	cmmirk	Mirk's Festial
	cmpurvey	Purvey's General Prologue to the Bible
	cmreynes	The Commonplace Book of Robert Reynes
	cmrollep	Richard Rolle, Epistles
	cmroyal	Middle English Sermons
	cmsiege	The Siege of Jerusalem
	cmwycser	English Wycliffite Sermons
PPCEME	All E1 texts	
PCEEC	All E1 texts	

Table 1. Primary sources

3. Latin translations

The present study explicitly differentiates between original OE material and material translated from Latin, so that any possible influence from Latin can be controlled for. However, comparing translated and non-translated texts can help us gain insight into the mechanics of OV/VO variation on the one hand, while it allows us to say something about the representativeness of the translation in the corpus on the other hand. If the translations show significant deviations from the original texts, especially when the information structure patterns observed in the native sample are disrupted, we can consider this additional evidence for our claim that OE is a VO language. This means furthermore that when studying the OE corpus as a whole, including the translations, the native OE patterns might be blurred by Latin influence. Possible influence of Latin in OE translations is often disregarded in syntactic studies, especially when it concerns native constructions, as the translations are generally of good quality: they go beyond glossing and ungrammaticality is avoided. However, this does not mean that Latin in no way influences the grammar, especially for such a delicate domain as information structure/pragmatics.

Since previous studies on OE OV/VO included Latin source material, the question arises if there is any identifiable evidence for Latin influence. We therefore queried the YCOE for subclauses with a finite verb, a non-finite verb, and a direct object in a sample of translated texts (which are also included in Taylor & Pintzuk 2012b's database). The first half of the clauses from each texts were manually matched with corresponding clause in the Latin source, if available. The OE objects of these clauses were annotated for information structure and weight, following the annotation scheme above. The following texts and their Latin original were included in the dataset:

1. Bede's *Ecclesiastical History of the English People*
   Latin edition used:
   Bede. Ecclesiastical History, Volume I: Books 1-3. Translated by J. E. King. Loeb Classical Library 246. Cambridge, MA: Harvard University Press, 1930. https://www.loebclassics.com/view/LCL246/1930/volume.xml

2. Orosius' *History Against the Pagans*
   Latin original: Sweet, H. (1883). King alfred's orosius (Vol. I, old-english text and Latin original, Early English text society. original series, 79). London: Trübner.

3. King Alfred's version of Gregory's *Cura Pastoralis*
   Latin original: Chadwyck-Healey Inc. (1996). *Regulae Pastoralis Liber, Ad Joannem Episcopum Civitatis Ravennae*. Patrologica Latina Database, vol 77. http://pld.chadwyck.co.uk/all/fulltext?ACTION=byid&ID=Z000024635&WARN=N&TOCHITS=N&ALL=Y&FILE=../session/1595407497_26042

4. Boethius' *Consolation of Philosophy*
   Latin original: Boethius. Theological Tractates. The Consolation of Philosophy. Translated by H. F. Stewart, E. K. Rand, S. J. Tester. Loeb Classical Library 74. Cambridge, MA: Harvard University Press, 1973. https://www.loebclassics.com/view/LCL074/1973/volume.xml

Our sample contains 267 Old English clauses, of which 171 (64.0%) have an identifiable Latin source sentence. Note that there is quite some variation among the texts in terms of literalness of the translation, as is illustrated in Table 2. Bede is very clearly a slavish translation with 97.4% of the clauses having a directly identifiable original. Cura Pastoralis is also very true to its source. Orosius deviates from the source text to some extent, but still over half of the clauses have an original. Boethius is a very free translation, and the clauses have no original in 75% of the cases.

	COBEDE	COBOETH	COCURA	COOROSIU	TOTAL
No	2 (3.1%)	64 (79,0%)	12 (15.6%)	18 (40.0%)	96 (36.0%)
Yes	62 (96.9%)	17 (21,0%)	65 (84.4%)	27 (60.0%)	171 (64.0%)
Total	**64**	**81**	**77**	**45**	**267**

Table 2. The presence of Latin originals in translated texts

A Latin original does not necessarily also have an object and a verb, for instance when the OE translator decided – for the sake of clarity – to repeat the object at issue, where the Latin original does not mention it again. It also happens in cases where the translator uses a verb+object construction to render the Latin verb, as in (11), where the verb *descendere* 'to descend' is translated by the OE phrase *þa eorðan secan wille* 'to seek the earth'. Another possibility is that the Latin uses a non-verbal structure that is translated to a verbal one, as in (12) where the prepositional structure *subditis ad correptionem* is rendered by means of a relative clause with a direct object in the OE

translation. This leaves us with 154 OE clauses that have a Latin original with both an object and two verbs, which were annotated according to the annotation scheme elaborated the previous section.

(11) þæt þu eft mid us þa eorđan secan wille for
that you also with us that earth seek want for
godra manna þearfe
good men's help
'[So would I have thee too, O Mind, come up to us if it please thee,] on condition of returning again with us to earth to help good men'

Ascende si placet, sed ea lege ne utique cum ludicri mei ratio poscet, descendere iniuriam pute
'Go up, if you will, but on this condition, that you do not really think it a wrong to have to go down again whenever the course of my sport demands'

(Bo:7.18.14.292)

(12) Ac đonne se lareow ieldende secđ đone timan đe
But when the teacher delaying seeks the time that
he his hieremenn sidelice on đreatigean mæge
he his subjects suitably on reprove may
'but when the teacher delays, and watches for a suitable opportunity of reproving his subjects'

Sed cum tempus subditis ad correptionem quaeritur
'When the time is sought for the rebuke of his subjects'

(CP:21.153.5.1039)

4. New OV objects

The hypothesis that we explore and the analysis that we pursue here cannot readily account for the 7 preverbal new objects that we find in our sample. We will here discuss each of these examples (some of these are also discussed in Struik and van Kemenade 2020).

There are three bare objects which we annotated as new illustrated in (13), (14) and (15):

(13) þæt he mid his munecum on his lande him munuclif
that he with his monks on his land to him monastery
aræran sceolde
build should
'that he with his monks on his land should establish a monastery'
(ÆCHom_II,_11:101.302.2131)

(14) for đon þe he wolde of þisre mægđe him moder
because he wanted of this race him mother
geceosan.
choose
because he would choose him a mother from this race'
(ÆCHom_I,_1:187.233.244)

(15) he sceolde be his ealdan wife sunu habban. Iohannem
he should by his old wife son have John
þone fulluhtere
the Baptist
'he should have a son by his aged wife: John the Baptist'
(ÆCHom_I,_13:286.162.2497)

(13) refers to the foundation of the Order of Saint Benedict. The establishment of this order is new at this point in the context and this is what *munuclif* is referring to. However, it is a bare object, so there is a possibility that the object is incorporated with the verb. Similarly, *moder* in (14) is a new referent in this discourse. The preceding passage deals with the description of the human race and continues by specifying who the woman selected by God to be the mother: Mary. In (15) the identity of the son is made specific by the apposition *Iohannem þone fulluhtere*. The preverbal position of these objects might be the result of incorporation, as they are bare object.

The example in (16) is a passage about the establishment of Saint Michael's church on mount Gargano:

(16) mid þy þe he wolde ðone fearr sceotan se
with that that he would that bull shoot which
stod on þæs scræfes dura
stood on that cave'sopening
'with which he would shoot the bull which stood in the opening of the cave'
(Mart_5_[Kotzor]:My8,A.1.770)

This small passage in the *Martyrology* refers to the story of a man who lost one of his bulls. When he went to look for it, he found it in a deserted cave. He shot an arrow at it, which turned around and hit the man instead. This mysterious event led to the establishment of Saint Michael's church. This particular bull was not mentioned before in the text, but the author might have assumed his audience to be familiar with the legend, which might be why the object is OV. The demonstrative determiner *ðone* preceding the noun is moved to Spec,DP, which makes the object visible to the EF on *v*P.

The example in (17) is similar to (16) in that it might be considered contextually given once you are familiar with the background story:

(17) forðæm þe he ne moste ane Godesfæmnan, þæt
because he not must one God's woman that
wæs an nunne, him to wife onfon
was a nun him to wife take
'He could not marry one woman of God, who was a nun, to him'

(Mart_5_[Kotzor]:Se21,A.14.1787)

The passage preceding (17) introduces the apostle Matthew, who, while he was preaching in front of God's altar, was stabbed from behind by King Hirtacus, because he was upset that Matthew could not marry him to a nun. The object is presented as if it refers to the general impossibility of marrying a nun, but it is likely that the author referred to a specific nun. We need to dig deeper into the story of Matthew and Hirtacus to know that Hirtacus was interested in one specific nun: Eufenisse, the wife of the previous king. Eufenisse is mentioned in the preceding context, so the object is, at least contextually, linked to the previous discourse. The Pentaset-Identity label would not be appropriate in this context, because *ane Godes fæmnan* is not truly identical to Eufenisse, nor can it be inferred from Eufenisse. We have to contextually derive it. This might make it eligible for the category Assumed. However, Assumed objects are objects that are either world-knowledge or situationally evoked, neither of which applies to *an nunne* in this example, because we need specific knowledge about Eufenisse. *An nunne* is referential, so the object must be new in terms of the Pentaset. However, the contextual link to Eufenisse, which might have been obvious for the author, might have resulted in preverbal word order. Furthermore, *ane* 'one/an' is ambiguous between an indefinite or cardinal reading. In our analysis, the cardinal would allow the object to raise to Spec,*v*P under the influence of the [uQuant] feature on T.

The object *ðæs folces lof* in (18) seems to be preverbal for stylistic reasons.

(18) Begann ða on mode. micclum smeagan. hu he
Began then on mind much consider how he
ðæs folces lof. forfleon mihte. þy læs ðe he
of that people's praise flee might lest he
wurde. to hlisful on worulde. and þæs
became too famous on world and of that
heofenlican lofes. fremde wære;
heavenly praise stranger were
'He then began to devise in his mind how he might flee
from the people's praise, lest he should be too famous
in the world and a stranger to heavenly praise'
(ÆCHom_II,_10:85.159.1721)

The excerpt is from the second instalment of the *Catholic Homilies* by Ælfric, who was very conscious about his writings. He is known for his alliterative prose writings and his use of stylistics, including parallelism (Clemoes 1966; Sato 2012). In this example, he contrasts the people's (i.e., earthly) praise with heavenly praise by using parallel grammatical structures with the object in preverbal position.

There is only one example which cannot be readily explained:

(19) þa ða he wolde his fæder lic bebyrian.
then when he would his father body bury
'when he would bury his father's corpse'
(ÆCHom_I,_33:460.46.6588)

The sentence is preceded by a passage in which Jesus and his apostles witness the funeral of a young man in the city of Nain. It is followed by a collection of quotes by Jesus about funeral rites. The sentence in (19) seems to recall a situation in which Jesus said something important to one of his apostles at his father's funeral, but neither his father nor his death is specifically mentioned. While the possessive pronoun establishes a link to an already established referent, the actual referent, the dead body of the father, cannot be inferred from the apostle, so the label Inferred is not appropriate in this context. This object is thus truly new. *His fæder lic* might be preverbal because it fits the general context of talking about the dead, even though the specific referent of the object has not been mentioned.

APPENDIX 2

Overview of Dutch source material

Our source material contains texts from the following corpora:

- **Corpus Gysseling (2021)**
  The online Corpus Gysseling contains 13th century official documents, originally collected by Ghent linguist Martin Gysseling between 1977-87, and is enriched with part of speech tagging and lemmatization. We included a selection of texts from the regions Flanders, Utrecht, and Holland.
  Total number of texts in subset: 336
  Total words in subset: 278038.

- **Corpus van Reenen-Mulder (CRM14) (van Reenen & Mulder 1993)**
  The CRM is a collection of 14th century official documents. The CRM contains over 3800 documents which are all dated and localized. We included a random selection of texts from the regions of Flanders, Utrecht, and Holland.
  Total number of texts in subset: 91
  Total words in subset: 54460

- **Corpus Laatmiddel- en Vroegnieuwnederlands (CLVN) (van der Sijs, van Kemenade & Rem 2018)**
  The CLVN contains over 2700 official documents from the 15th, 16th, and 17th century. The texts in this corpus frequently comprise several charters and hence appear longer in length than the texts from Gysseling or CRM. We included a random selection of texts from the regions of Flanders, Utrecht, and Holland. There is one exception; the corpus contains the diary of Christiaan Munsters, but this text is not localized. We included it to balance the predominantly official nature of the dataset.
  Total number of texts in subset: 66
  Total words in subset: 176543

- **Narrative section of the Compilatiecorpus Historisch Nederlands (CHN) (Coussé 2010)**
  The narrative subcorpus of the CHN contains a balanced selection of narrative prose texts written from the end of the 16th century onwards. The texts included in this subcorpus are all written in Holland.
  Total number of texts in subset: 63
  Total words in subset: 106274

We used material from three religious primary sources to supplement the official documents included in the corpora mentioned above:

- Sermon 1, 20, 39, 41 and 42 of *De Limburgsche Sermoenen* (Kern 1895). The *Limgbursche Sermoenen* are the oldest recorded sermons in the Dutch language and were written in the 13th century. They originate in the southeast of the Netherlands, but they were added to the text selection to balance the official treatises from Corpus Gysseling.
  Total words in subset: 15408
- Translations of the first 18 psalms (Bruin 1978). The psalms were translated at the end of the 14th Century. The author is unknown, so the text is not localized.
  Total words in subset: 5009
- *Den Tempel Onser Sielen* (Ampe 1968) and *Der Evangelische Peerle* (Ampe 1993) both written by the same beguine in the second half of the 16th century.
  Total words in subset: 10558

Total number of words in our dataset: 702.519. An overview of the distribution of material across time and region is given in Table 1.

	13TH CENTURY		14TH CENTURY			15TH CENTURY	16TH CENTURY			17TH CENTURY		18TH CENTURY	19TH CENTURY
Source **Region**	**Gysseling**	**Sermons**	**CRM**	**CLVN**	**Psalmen**	**CLVN**	**CHN**	**CLVN**	**Peerle &Tempel**	**CHN**	**CLVN**	**CHN**	**CHN**
Holland	58428		18577	2087		21216	12247	35699		48894	6284	45133	56229
East Flanders	77875		8917	1016		3426		552					
West Flanders	136505		9494	2318		31467		6941			1161		
Utrecht	5230		17472	4389		29806		7387					
Other		15408			5009			23894	10558				
Total	**278038**	**15408**	**54460**	**9810**	**5009**	**85915**	**12247**	**73373**	**10558**	**48894**	**7445**	**45133**	**56229**

Table 1. Distribution of material across time and region

SAMENVATTING

De West-Germaanse talen vertonen een opmerkelijk verschil in woordvolgorde. In de continentale varianten, onder andere het Nederlands en Duits, volgt het werkwoord typisch op het object, ook wel aangeduid als object-verb of OV volgorde. In het Engels is deze volgorde omgekeerd. Hier volgt het object typisch het werkwoord, ook wel aangeduid als verb-object of VO volgorde. Deze woordvolgordepatronen worden geïllustreerd in (1), waarbij het object dikgedrukt is, het niet-finiete werkwoord onderstreept is en het finiete werkwoord schuingedrukt is.

(1) **OV**

Nederlands	dat	hij	**een**	**appel**	gegeten	*heeft*
Duits	dass	er	**einen**	**Apfel**	gegessen	*hat*
VO						
Engels	that	he	*has*	eaten	**an apple**	

De voorbeeldzinnen in (1) illustreren duidelijk dat deze talen zeer aan elkaar verwant zijn; er zijn veel lexicale overeenkomsten, zoals *appel, Apfel* en *apple,* en er is duidelijke overlap in grammaticale structuur. Het is fascinerend dat talen die zo dicht aan elkaar verwant zijn zo'n ogenschijnlijk fundamenteel verschil in woordvolgorde vertonen. Dit wordt nog opmerkelijker wanneer we naar eerdere taalstadia kijken: daar laten alle drie de talen zowel OV als VO volgorde toe. Voorbeeld (2) laat zien dat de VO volgorde ook tot de grammaticale mogelijkheden behoorde in het 16e-eeuwse Nederlands, en voorbeeld (3) laat hetzelfde zien voor het 13e-eeuwse Duits.

(2) op dat hi *soude* beschamen **die wijsen deser werelt**
op dat hij zou beschamen de wijzen der wereld
'opdat hij de wijzen van deze wereld zou beschamen'
(Peerle_1537-38)

(3) daz er ime borge *wolte* **einen benanten ſchaz**
dat hij hem garanderen wilde een beloofde schat
'dat hij hem een beloofde schat wilde garanderen'
(Predigtfragmente, 9a20-21)

Het Engelse voorbeeld in (4) illustreert dat de OV volgorde ook een optie was in het 13e-eeuwse Engels.

(4) for þach þe engel Gabriel *hefde* **his** **burde** iboked
voor hoewel de engel Gabriel had zijn geboorte voorspeld
'hoewel de engel Gabriel zijn geboorte voorspeld had'
(cmancriw, II.124.1591)

Deze zogenaamde OV/VO verschillen roepen vele vragen op over de factoren die deze verschillen bepalen en hoe deze variatie syntactisch geanalyseerd moet worden – zowel synchroon als diachroon. Deze dissertatie is niet het eerste werk dat deze vragen probeert te antwoorden – er is al veel over OV/VO verschillen geschreven vanuit veel verschillende perspectieven. Er is echter één vraag die nog niet veel aandacht heeft gekregen en die de hoofdvraag van deze dissertatie vormt:

(5) Zijn deze talen structureel hetzelfde in hun vroegere stadia en zijn ze later uit elkaar gegroeid of waren de talen al verschillend en zijn ze nog verder uit elkaar gegroeid?

Deze vraag is moeilijk te beantwoorden op basis van de bestaande literatuur, omdat elke studie zijn eigen onderliggende assumpties en methodologieën heeft, waardoor de conclusies vaak niet met elkaar te vergelijken zijn. De vraag kan zowel empirisch als theoretisch worden beantwoord. Deze dissertatie streeft ernaar beiden te doen.

Het empirische doel is om een vergelijkend en diachroon beeld te krijgen hoe OV/VO gemotiveerd is, gebaseerd op een uniforme kwantitatieve analyse van de individuele talen. De centrale hypothese is dat informatiestructuur een veel belangrijke rol speelde dan in de hedendaagse West-Germaanse talen, waarbij informatiestructuur ruwweg gedefinieerd kan worden als het organiseren van een zin volgens het *given-before-new* principe (Gundel et al. 1993): uit de context bekende informatie wordt eerder in de zin geplaatst dan nieuwe informatie. Hieruit volgen de volgende twee onderzoeksvragen:

(6) Wat is de relatie tussen informatie structuur en object positie in de vroegere stadia van het Nederlands, Nederduits, Hoogduits en Engels?

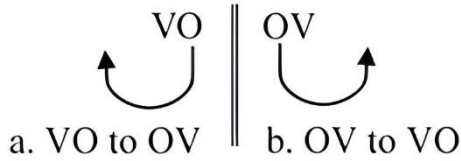
(7) Hoe verandert de relatie tussen informatie structuur en object positie?

Het theoretische doel van deze dissertatie is het ontwikkelen van een syntactisch kader waarin de variatie voor elke taal afgeleid kan worden, maar die flexibel genoeg is om individuele verschillen te accommoderen.

Na een algemene introductie focust elk hoofdstuk in deze dissertatie op één van de West-Germaanse talen: hoofdstukken 2 en 3 gaan in op het Oud- en Middelengels, hoofdstuk 4 focust op het Middel- en Vroegnieuwnederlands, hoofdstuk 5 behandelt het Oudsaksisch en het Middelnederduits en hoofdstuk 6 het Oud- en Middelhoogduits. In hoofdstuk 7 bespreek ik de resultaten vanuit een vergelijkend perspectief besproken en ontwikkel ik een uniforme syntactische analyse.

Het startpunt voor dit onderzoek is het Oud- en Middelengels, aangezien de discussie over de status van OV/VO variatie al lang woedt in de eerdere literatuur over deze taalstadia. Er zijn in theorie drie manieren om de woordvolgorde van het object en werkwoord structureel af te leiden. Deze zijn samengevat in (8).

(8)



Er is allereerst voorgesteld om VO volgordes te analyseren als rechtswaartse verplaatsing van de basisvolgorde OV (bijvoorbeeld van Kemenade 1987 en Pintzuk & Kroch 1989), zoals in (8b). Een tweede theorie is dat OV het resultaat is van linkswaartse verplaatsing vanuit de basisvolgorde VO (Fischer et al. 2000, Biberauer & Roberts 2005, Elenbaas & van Kemenade 2014), zoals in (8a). Een derde en invloedrijke theorie is dat het Oudengels zowel een VO grammatica als een OV grammatica heeft met respectievelijk linksverplaatsing en rechtsverplaatsing: de Double Base Hypothesis (Pintzuk 1999, Taylor & Pintzuk 2012). Deze theorie omvat dus zowel mogelijkheid (8a) als (8b).

In **hoofdstuk 2** neem ik deze eerdere voorstellen voor het Oudengels onder de loep en ontwikkel ik een methodologie om het effect van informatie structuur op de woordvolgorde zo nauwkeurig mogelijk te testen om vanuit daar tot een conclusie te komen wat betreft de basisvolgorde van het Oudengels. Hierbij ga ik uit van de hypothese dat uit de context bekende objecten vaker in OV volgorde voorkomen, en onbekende of nieuwe objecten vaker in VO volgorde. Hoewel de studie voortbouwt op de bevindingen van Taylor en Pintzuk (2012) neem ik expliciet afstand van een aantal van hun a priori aannames. Door niet op voorhand uit te gaan van een bepaalde structurele analyse (OV, VO of een double base) ontstaat de mogelijkheid om de taal vanuit een neutraal perspectief te bestuderen. Uit het *York-Toronto-Helsinki Parsed Corpus of Old English Prose* (Taylor et al. 2003) verzamel ik

alle bijzinnen met een direct object (met uitzondering van pronomina en gekwantificeerde of negatieve objecten), een finiet werkwoord en een niet-finiet werkwoord (met uitzondering van *to* 'te' infinitieven) die voorkomen in niet-vertaalde teksten. De objecten annoteer ik vervolgens voor informatiestructuur. Hierbij maak ik gebruik van een binair *given vs. new* annotatieschema gebaseerd op de verwijzende kenmerken van het object volgens de Pentaset richtlijnen (Komen 2013). De resultaten laten zien dat *new* objecten bijna alleen in VO volgorde voorkomen. *Given* objecten komen wel vrij in OV volgorde voor, hoewel niet exclusief. De resultaten worden bevestigd door een logistische regressieanalyse waarbij ook het effect van *weight* in acht wordt geworden: langere objecten hebben een hogere kans om in VO volgorde geplaatst te worden. Ik beargumenteer dat mijn methodologie geen bewijs levert voor de Double Base Hypothesis, maar in plaats daarvan wijst op een analyse zoals in (8a), waarbij een *given* object naar links verplaatst wordt vanaf een VO basis.

In **hoofdstuk 3** diep ik de bevindingen uit hoofdstuk 2 verder uit, pas ik dezelfde methodologie toe op het Vroegmiddelengels en ontwikkel ik een syntactische analyse om de variatie af te leiden. Ik laat specifiek zien dat Taylor & Pintzuks's keuze om geen onderscheid te maken tussen oorspronkelijk Oudengelse, en uit het Latijn vertaalde teksten kan leiden tot een vertroebeld beeld. Om de invloed van het Latijn op de woordvolgorde van de Oudengelse vertalingen te laten zien analyseer ik een selectie van zinnen uit vertaalde teksten en vergelijk deze met de corresponderende Latijnse zin. De resultaten laten zien dat het effect van informatiestructuur minder duidelijk is in de vertaalde teksten: *new* objecten komen vaker voor in OV volgorde dan verwacht en dit komt veelal doordat het Latijnse origineel ook OV volgorde laat zien. Ik laat ook zien, op basis van de M1 teksten uit de tweede editie van het *Penn-Helsinki Parsed Corpus of Middle English* (Kroch et al. 2000) dat het aantal OV objecten aan het afnemen is. Echter, de OV objecten die er nog zijn, zijn áltijd *given*. Ik ontwikkel een antisymmetrische analyse waarbij ik ervanuit ga dat het object altijd in VO positie wordt gegenereerd. Het object komt in de OV positie terecht door verplaatsing naar Spec,*v*P als het een extra featurelaag heeft die de verwijzing naar de context signaleert. Ik beargumenteer dat deze verplaatsing en het uiteindelijke verval hiervan gerelateerd is aan de grammaticalisatie van de demonstratieve pronomina tot het lidwoord *the*. Doordat naamval- en gendermarkering verdwijnt, signaleert het lidwoord geen verwijzing meer en vervalt de mogelijkheid tot het verplaatsen van het object.

Hoofdstuk 4 focust op de situatie in het Middelnederlands tot het Vroegnieuwnederlands. Ik verzamel handmatig geschikte zinnen uit teksten in het online *Corpus Gysseling* (2021), het *Corpus van Reenen-Mulder* (van Reenen & Mulder 1993), het *Corpus Laatmiddel- en Vroegnieuwnederlands*

(van der Sijs, van Kemenade & Rem 2018) en het *Compilatiecorpus Historisch Nederlands* (Coussé 2010). Deze worden geannoteerd als in hoofdstuk 2 voor informatiestructuur. De literatuur over het Middelnederlands suggereert dat OV/VO variatie anders gemotiveerd is dan in het Engels. Daar waar in het Engels OV gemotiveerd wordt door *givennes* van het object, wordt in het Middelnederlands VO gemotiveerd door *newness*. Echter, tot op heden ontbrak een gedetailleerde kwantitatieve studie (maar zie Coussé 2009). De resultaten, geanalyseerd door middel van logistische regressie, laten zien dat objecten in VO volgorde bijna altijd *new* zijn, hoewel door het effect van *weight* ook lange *given* objecten in VO voorkomen. In OV volgorde komen zowel *new* als *given* objecten voor. De diachrone trend is dat VO vervalt. Dit relateer dit in het hoofdstuk expliciet aan een tweede type woordvolgorde variatie: *scrambling* in het middenveld, waarbij een OV object zowel voor of na een adverbium geplaatst kan worden. Een voorbeeld hiervan is (9), waar *het boek* zowel voor of na het adverbium *waarschijnlijk* grammaticaal is.

(9) dat Jan (**het boek**) waarschijnlijk (**het boek**) las.

De literatuur over het hedendaags Nederlands stelt dat ook deze variatie door informatiestructuur is gemotiveerd: een object vóór het adverbium is *given*, een object ná het adverbium is *new* (zie Schoenmakers et al. 2021 voor een overzicht). Ik test in het hoofdstuk de hypothese of er een relatie is tussen het verval van VO en de opkomst van *scrambling*, bepaald door informatiestructuur. De resultaten laten zien dat zolang VO productief is nagenoeg alle objecten in een positie vóór het adverbium geplaatst worden en dat informatiestructuur hier geen invloed op heeft. Pas wanneer er méér objecten in OV voorkomen, begint het effect van informatiestructuur op de positie van een object ten opzichte van het adverbium zichtbaar te worden. De syntactische analyse die ik ontwikkel bouwt voort op Broekhuis (2008) en de analyse ontwikkeld in hoofdstuk 3. Ik stel dat, in tegenstelling tot het Oudengels, de verplaatsing naar Spec,*v*P verplicht is en voeg hieraan toe dat dit in twee stappen, via Spec,VP, gebeurt, waarbij bij elke stap een kopie van het object wordt achtergelaten. Wanneer de gegeneerde structuur naar de interfaces gestuurd wordt, wordt bepaald in welke positie het object terecht komt.

In **hoofdstuk 5** staat het Nederduits centraal, om precies te zijn het Oudsaksisch en het Middelnederduits. Deze taal heeft tot op heden weinig aandacht genoten in de literatuur. Walkden (2014) is een uitzondering – hij analyseert OV/VO variatie in het Oudsaksisch volgens de methodologie en assumpties die ook gebruikt zijn door Taylor en Pintzuk (2012). Hij concludeert dat het Oudsaksisch veel op het Oudengels lijkt, maar dat de effecten minder sterk zijn. Omdat ik in hoofdstuk 2 en 3 op basis van een

andere methodologie tot radicaal andere conclusies kom wat betreft de structuur van het Oudengels, is het de vraag hoe Walkden's resultaten geïnterpreteerd moeten worden. Op basis van een analyse van de Oudsaksische tekst *Hêliand* – beschikbaar in geannoteerde vorm (in de *HeLiPaD*, Walkden 2016) kom ik tot een verfijning van Walkden's resultaten en de conclusie dat, net als in het Nederlands, *given* objecten een sterke voorkeur geven aan OV, terwijl *new* objecten vrij in VO voorkomen. Voor het Middelnederduits maak ik gebruik van het recent verschenen en syntactisch geannoteerde *Corpus of Historical Low German* (Booth et al. 2021). De resultaten laten een voortzetting van het patroon uit het Oudsaksisch zien: *given* objecten geven een sterke voorkeur aan OV, terwijl *new* objecten vrij in VO voorkomen. Hoewel deze resultaten misschien suggereren dat de variatie geanalyseerd moet worden door middel van rechtswaartse verplaatsing vanaf OV volgorde, zoals in (8b), beargumenteer ik in dit hoofdstuk dat dit vanuit een theoretisch perspectief onaantrekkelijk is, en dat de variatie beter geanalyseerd kan worden in een antisymmetrisch model gebaseerd op de analyses in de hoofdstukken 3 en 4.

Als laatste behandel ik in **hoofdstuk 6** OV/VO variatie in de geschiedenis van het Hoogduits. Eerdere analyses van het Oudhoogduits concluderen dat het Hoogduits al in het vroegste taalstadium OV was, hoewel VO ook tot de mogelijkheden behoorde (Lenerz 1984, Axel 2007, Sapp 2016). Recente studies naar de invloed van informatiestructuur op OV/VO variatie zijn veelal gedaan op basis van een *focus-background* annotatieschema en hoewel deze veel overlap vertoont met het *given-new* annotatieschema, zijn ze niet één-op-één vergelijkbaar. De resultaten van vorige studies suggereren echter dat ook in het Oudhoogduits en Middelhoogduits *given* objecten in OV positie staan, terwijl *new* objecten ook in VO volgorde voorkomen. Ik test deze hypothese door middel van het handmatig verzamelen van relevante zinnen uit het *Referentzkorpus Altdeutsch* (Donhauser et al. 2017) voor het Oudhoogduits en het *Referenzkorpus Mittelhochdeutsch* (Petran et al. 2016). Het materiaal voor het Oudhoogduits blijkt te beperkt om tot eenduidige conclusies te komen. - er zijn relatief weinig voorbeelden met twee werkwoorden. Bovendien is de kwaliteit van het Oudhoogduitse materiaal voor syntactisch onderzoek beperkt: er is weinig niet-vertaalde proza en veel van de teksten zijn betrekkelijk slaafs uit het Latijn vertaald. Er komt dan ook geen effect van informatiestructuur op OV/VO variatie naar voren. De Middelhoogduitse data suggereren dat het uitblijven van een effect in de Oudhoogduitse data inderdaad komt door de kwaliteit van de data. In het Middelhoogduits zijn *given* objecten overwegend OV, terwijl nieuwe objecten vrijer in VO voorkomen. Ik beargumenteer dat ook in het geval van Middelhoogduits de variatie het best vanuit een linksverplaatsingsanalyse zoals (8a) geduid kan worden.

In **hoofdstuk 7** worden de resultaten uit de voorgaande hoofdstukken vanuit een vergelijkend perspectief beschouwd, om zo antwoord te kunnen op de hoofdvraag van deze dissertatie. De analyses van de individuele talen laten allereerst een sterke overeenkomst in structurele variatie zien. Echter, de resultaten van de verschillende corpusstudies laten zien dat de invloed van informatie structuur op de uiteindelijke woordvolgorde in tegengestelde richting werkt voor het Engels ten opzichte van het Nederlands, Duits en Nederduits. Daar waar in het Engels OV gemotiveerd wordt door de *givenness* van het object, wordt in het Nederlands, Duits en Nederduits VO gemotiveerd door *newness*. Dit wordt geïllustreerd in (10).

(10)

Het onderscheid tussen het Engels als een VO taal en het Nederlands, Duits en Nederduits als OV talen lijkt dus al aanwezig te zijn in de vroegste taalstadia. Dit betekent echter niet dat de talen ook twee totaal verschillende analyses vereisen. Ik beargumenteer dat dit onwenselijk is, gezien de dichte genetische verwantschap van de talen en de vele structurele overeenkomsten in de vroegere taalstadia. Ik laat zien dat het mogelijk is om binnen een antisymmetrisch kader zowel de structurele overeenkomsten als de individuele verschillen te analyseren en ook ruimte te bieden aan een verklaring voor andere (diachrone) ontwikkelingen die binnen de individuele talen plaatsvinden.

CURRICULUM VITAE

Tara Struik was born in Deventer, the Netherlands in 1992. After completing her secondary education at the Gertrudis College in 2010, she started her studies at Radboud University Nijmegen. She obtained her Bachelor's degree in English Language and Culture with minors in linguistics and the history of English in 2013 (*bene meritum*) and her Research Master's degree in Language and Communication with a specialization in historical syntax in 2015 (cum laude). After teac hing for one year, she started her PhD at Radboud University, funded by the Centre for Language Studies. Tara has continued to work as a lecturer at Radboud University after completing her PhD and recently accepted a postdoctoral position within the SILPAC project at the University of Mannheim.