



Luisa García García*

Lability and the rigidification of word order: evidence from Early Middle English

<https://doi.org/10.1515/ling-2022-0036>

Received March 3, 2022; accepted March 22, 2023; published online August 16, 2023

Abstract: This article analyzes quantitatively the effect of five linguistic features on the position of the object in Early Middle English. Four of them have long been explored in the literature: object type, object length, clause type and type of verbal cluster (\pm auxiliary). The fifth feature, lability, has so far been given less attention. Lability is the possibility that a given verb alternates between an unaccusative and transitive frame without morphological coding. This makes lability an instance of morphological syncretism. This study tests the hypothesis that, for disambiguation purposes, labile transitive verbs show a more consistent word order (VO in this case) than non-labile transitives. If confirmed, the hypothesis would point to a non-trivial connection between the increase of labile verbs and the move towards a fixed word order in Early Middle English. Such a connection has gone unnoticed in the existing literature, which, as far as the influence of morphological syncretism on word order is concerned, has focused almost exclusively on the effect of the loss of case marking. A total of 961 transitive clauses with labile and non-labile verbs were tagged for the above-mentioned five variables. Their effect on the choice between VO and OV is measured using statistical analysis. The conclusion is that verb lability is a significant predictor of VO in the period under scrutiny, with labile verbs thus spearheading the shift towards a stable word order pattern (VO) in English. The correlation between verb lability and word order rigidification demonstrated for Early Middle English in this article may be relevant for studies on word order from multiple perspectives: language-specific, typological, synchronic and diachronic.

Keywords: Early Middle English; functional explanations; lability; valency coding; word order

1 Introduction

Case marking, agreement and constituent order overlap in their function to disambiguate clausal arguments. For this reason, they correlate in several ways. For

*Corresponding author: Luisa García García, Departamento de Lengua Inglesa, Facultad de Filología, Universidad de Sevilla, C/Palos de la Frontera, s/n, 41004 Sevilla, Spain, E-mail: luisa@us.es

instance, there is a tendency for languages with free word order to make use of case marking (Butt 2009: 28), whereas the absence of morphological marking (case inflections and agreement) is linked to a more rigid word order typologically (Siewierska 1998: 507).¹

In diachronic terms, it has long been observed that the loss of case marking often goes hand in hand with a shift towards a fixed word order (Primus 2001: 855; Sims-Williams and Baerman 2021: 22). As is well known, Present-day English marks grammatical relations mainly by rigid SVO constituent order and case morphology is confined to (some) pronouns. In contrast, nominal paradigms did show case, as well as gender and number distinctions in Old English (the first attested stage of the language, c. 700–1100), and constituent order was then much more flexible. Noun morphology was severely impoverished during the Middle English period (c. 1100–1500), when word order variability was reduced. The possibility of a causal link between the two processes based on functional arguments has been often addressed in the literature.² Some scholars have proposed that the loss of case marking in Middle English called for the rigidification of word order patterns in order to distinguish clausal constituents (thus for instance, Fischer and van der Wurff 2006: 188; Marchand 1951; Pysz and Wiland 2012). Others have suggested that word order inflexibility made case marking redundant and hence prone to disappear (e.g., Lehnert 1957; Shores 1971: 217; implicitly Berndt 1989: 110–111). Traugott (1972: 111) affirmed that both processes feed into each other; so, too, Allen (2006: 220), who wrote that it “seems likely that the two developments worked hand in hand”. The functionalist proposal that there is a causal relationship at all between the loss of case marking and rigidification of word order in Old English has been questioned among others by Pintzuk (2002a, 2002b). She demonstrates that overt case morphology does not influence the position of the object in Old English.³

One of the main goals of this study is to assess the effects of a so far unexplored instance of morphological syncretism that may have favored the rigidification of word order patterns in English, namely the absence of the valency alternation marking, which leads to ‘S/P labile’ or ‘ambitransitive’ verbs (see a succinct description of valency alternations in Malchukov and The Leipzig Valency Classes Project Team 2015: 33–34). The term S/P labile, or ‘labile’ for short, designates here the

1 However, rigid word order does not exclude morphological marking (Butt 2009: 28; Primus 2001: 866).

2 Van Kemenade (1987: 203–205) comments extensively not only on the loss of case marking, but also on the loss of verbal morphology and hence lack of agreement in relation to word order changes, specifically, the loss of V2.

3 She does this by showing that clauses with unambiguous morphology, i.e., where the subject and object are made clear by case marking, do not show a freer word order than sentences where subject and object are morphologically ambiguous, i.e., are not distinguished by case marking.

quality of those verbs that can alternate between an intransitive (more specifically unaccusative) and a transitive frame without morphological change, whereby the subject of the intransitive corresponds to the object of the transitive reading. Compare the use of *burn* in (1) and (2):

- (1) *The shed was burning.*
- (2) *The children were burning the shed.*

Note that the alternation illustrated in (1) and (2) is one between a non-causal and causal sense of the verb *burn*. In some studies, it has been called the inchoative-causative alternation (Haspelmath 1993; Levin 1993; Malchukov and Comrie 2015), but Haspelmath et al. (2014) provide convincing arguments for rejecting this term. When used in reference to a labile verb, ‘intransitive’ and ‘transitive’ also imply ‘non-causal’ and ‘causal’ in this article.

The number of labile verbs greatly increases in Early Middle English (Ingham 2020; McMillion 2006). This is likewise the period in which there is still optionality between VO and OV, but the frequency of OV is in rapid decline, until it becomes strongly structurally restricted by 1400 (Fischer et al. 2017: 195). Therefore, Early Middle English prose texts are the obvious choice for a study that examines the connection between these two linguistic developments.

A second goal is to quantify the effect, in Early Middle English, of the most salient morphosyntactic variables that previous studies on early English have already shown to have an impact on word order.⁴ The new contribution of the present article is that it aims to measure statistically the conditioning force of each of these well-known variables in a substantial corpus of Early Middle English prose, as well as to place them on a hierarchical scale of predictive power and to establish possible correlations and interactions between them.⁵

The article is organized as follows: Section 2 introduces the main working hypothesis of the study: the possible relationship between verbal valency coding and syntax. Section 3 describes the corpus (Early Middle English prose) and presents all the variables whose effect on the position of objects has been assessed (object type, object length, clause type, type of verbal cluster and lability). Section 4 discusses the

4 Discursive factors have been left out of the study for reasons of feasibility. Their effect on the position of verb and object in Old and Middle English has been recently tackled by Taylor and Pintzuk (2012a, 2012b), Struik and van Kemenade (2020, 2022), and De Bastiani (2022).

5 The connection between lability and word order in early English and the (relative) strength of other variables have been tackled on a smaller scale in a prior study based on one of the texts that make up the corpus of the present research, the *First and Final Continuations of the Peterborough Chronicle* (ca. 1150). Due to similarities in the approach and methodology, some coincidences in the corresponding sections of the papers are unavoidable.

results and evaluates them qualitatively and quantitatively. Section 5 offers a summary and conclusion.

2 Labile verbs and syntax

The following quote from Los (2015) summarizes one of the linguistic assumptions that suggest a connection between lability and word order:

Syntax creates slots for certain kinds of information and provides routines for lining this information up word by word. *The verbs are particularly helpful for the hearers or readers of the message because they show them what information to expect* [emphasis mine]: AGENTS, PATIENTS, attributes, etc. (Los 2015: 3)

That is, the valency of a verb, its combining power, creates expectations that are part of the communication process. The following examples let intuit rather plainly the workings of expectation and the conflicting expectations that labile verbs may generate:

- (3) *Susan was sleeping.*
- (4) *Frank was making*
- (5) *The children were burning (...).*

Example (3) is a complete sentence. The addressee does not necessarily expect anything after *was sleeping*. In (4) the verbal cluster *was making*, which can only be transitive, arouses expectations that are not fulfilled: the utterance is incomplete. However, (5) can be interpreted in two ways: (i). As an intransitive clause with *the children* as subject-patient and *were burning* as an unaccusative verb (alarming news in most cases), or (ii). As an incomplete utterance, where the subject, *the children*, is an agent and *were burning* a transitive causal verb. Labile verbs (*burn* in this case) are literally ambivalent, ambiguous with respect to their valency, and therefore create multiple expectations. This may interfere with communication and influence the way we use them in discourse, as the interpretation of their valency depends solely on contextual cues. In particular, lability might affect word order patterns. This connection can be glimpsed by comparing two English sentences with their German and Spanish translation in (6), (7) and (8); *the door* and its equivalent in German and Spanish is the subject in (6a), (7a) and (8a) and object in (6b), (7b) and (8b).

- (6) a. *Andrea got on the train and suddenly **the door closed**.*
- b. *Andrea got on the train and suddenly **closed the door**.*

- (7) a. *Andrea stieg in den Zug ein und plötzlich ging die Tür zu*
 Andrea rose in the Train into and suddenly went the door to
 ‘Andrea got on the train and suddenly the door closed’
- b. *Andrea stieg in den Zug ein und plötzlich machte sie die Tür zu*
 Andrea rose in the train into and suddenly made she the door to
 ‘Andrea got on the train and suddenly she closed the door’
- (8) a. *Andrea subió al tren y de pronto se cerró la puerta*
 Andrea got.on to.the train and suddenly itself closed the door
 ‘Andrea got on the train and suddenly the door closed’
- b. *Andrea subió al tren y de pronto cerró la puerta*
 Andrea got.on to.the train and suddenly closed the door
 ‘Andrea got on the train and suddenly she closed the door’

The English sentences contain a labile verb, *close*, which is unaccusative in (6a) and transitive in (6b). In these English sentences, word order alone shows whether *door* is object or subject, and hence whether *closed* is used in its unaccusative or transitive sense, which is the relevant point here. In contrast, the transitive and unaccusative senses are formally distinguished in the corresponding Spanish and German verbs. In Spanish, the unaccusative sense has a pseudo-reflexive pronoun *se*; in German two different verbs are used for the unaccusative and transitive senses (*ging zu* and *machte zu*). In both languages, the nouns *puerta* and *Tür* follow the verb, but can be correctly interpreted as subject or object because the verbs are unambiguous with respect to valency. In these examples, there seems to be a correlation between word order (in)flexibility and (un)ambiguous valency: ambiguous valency is associated with a fixed word order in (6) and unambiguous valency with flexible word order, at least in terms of argument placement, in (7) and (8). Whether this correlation can be detected in a specific language, English, at a particular stage, Early Middle English, is what this study sets out to discover.

2.1 Word order and lability in early English

Old English word order cannot be summarized without making inaccurate generalizations. Briefly, two main word order patterns co-existed: verb-second in main clauses and verb final in subordinate clauses, which is presumed to be the basic order from which the former is derived (thus van Kemenade 1987; Traugott 1992: 274–275 among many others). Exceptions abounded, as word order was flexible and affected by multiple factors, not all of them fully understood (see discussion in Fischer et al. 2017: 194–197 and a more detailed survey in Los 2015: 157–209). Parallel

to the two main word order patterns, objects could occur both in preverbal position, in verb final clauses (OV) and in postverbal position (VO), in verb-second clauses. In Old English and still in Early Middle English OV and VO seem to be genuine variants, that is, not subject to any identifiable *categorical* conditions (Fischer et al. 2017: 195; Kroch and Taylor 2000: 163; Pintzuk 1999, 2002a: 278).⁶

The order OV was in recession from Late Old English (Los 2015: 173; Pintzuk 2002b: 382). It ceased to be productive ca. 1400, when (S)V(O) became the norm (Fischer and van der Wurff 2006: 186; Fischer et al. 2017: 195; Van Kemenade 1987: 174; Los 2015: 180 move basic VO forward to ca. 1200). On the other hand, the number of labile verbs increases steadily since the Old English period due to both language internal processes of morphological loss and to external mechanisms of language contact. Among the former stands out the demise of the Germanic causative *jan*-formation as a valency-changing operation, which was already vanishing in Old English. By way of illustration of the process, Germanic distinguishes morphologically between the intransitive-noncausal (**melta*- ‘to melt’) and transitive-causal (**maltija*- ‘to cause to melt’) uses of *melt*, whereas the verb *myltan* ‘to melt’ can be used with both argument frames in Old English. In labile verbs such as Old English *myltan*, the formal distinction between different valency frames has disappeared. The link between the loss of the Germanic causative formation and the rise of lability in English is argued in detail in van Gelderen (2011) and García García (2020). The former highlights the role played by other internal factors, too, such as the disappearance of valency-changing verbal prefixes in Early Middle English. External influence has been extensively tackled by Ingham (2020), who underscores the impact of French lexical and structural borrowing on the rise of lability in Early Middle English.

In the light of Examples (6)–(8), it is plausible to put forth the hypothesis, rooted in functional grounds, that there might be a non-trivial relationship between the rigidification of word order and the high increase of labile verbs in English; more specifically, that transitive clauses with a labile verb have a more stable word order pattern (i.e., show VO more frequently) than transitive clauses with a non-labile verb in Early Middle English.⁷ The following fragment from the *Lambeth Homilies* (ca. 1200) illustrates the proposed correlation:

6 Kroch and Taylor (2000) and Pintzuk (1999, 2002a) analyze the synchronic variation between these two patterns (VO – OV) in terms of “grammatical competition”, that is, coexisting grammars that differ in that value. Fischer et al. (2000: 151–160) have a different take also within the generative framework.

7 Following the comment of one of the reviewers, it should be noted that disambiguating strategies might have started earlier. In fact, further work on word order in clauses with verbs like *myltan* ‘to melt’ in Old English could be worthwhile.

- (9) *and ure drihten [...] shedde of his halie eyene*
and our lord [...] shed from his holy eyes
hate teres and hore brother arerde [...] and iturnd
hot tears and their brother raised [...] and turned
hore horte and heore wope to muchele blisse
their heart and their weeping to great bliss
 ‘and our Lord shed hot tears from his holy eyes and resurrected their brother
 and turned their heart and their weeping to great bliss’
 (CMLAMB1,157.484–487)⁸

The verb *arerde* (*arēren* ‘raise’) is non-labile transitive in Early Middle English according to the definitions and early quotes in the *Middle English Dictionary* (Lewis 1952). It requires an object and *hore brother*, which is the only overt argument, needs to be interpreted as one. The omitted subject is *ure drihten* ‘our lord’, shared with the previous coordinated clause. On the other hand, *iturnd* (*turnen*) is labile, admitting both an unaccusative and transitive interpretation depending on whether *hore horte and heore wope* is to be understood as the subject or object of the clause. Both roles are conceptually possible, too. According to the above hypothesis, the placement of *hore horte and heore wope* after the verb is affected by the fact that *turnen* is ambiguous with respect to valency and the NP *hore horte and heore wope* would potentially be interpreted as its subject if preposed to the verb, whereas in fact a transitive reading of *turnen* is intended here.⁹ A fixed constituent order, which in the case of English is (S) VO, makes it possible to disambiguate the valency of labile verbs in contexts such as (9). Hence, it seems reasonable to assume that at a time when VO–OV are both possible variants in English, the dominant variant VO is more frequent in transitive clauses with labile verbs than with non-labile transitive verbs, which can alternate without ambivalence between VO and OV. Ultimately, the study assesses whether ease of processing (other than loss of case marking) can be invoked as one of the mechanisms involved in the fixing of word order patterns in Early Middle English.

Notice that this study does not make any predictions on whether OV or VO should be preferable with labile verbs.¹⁰ The claim is that a *fixed* word order carries

⁸ Early Middle English text references follow the *Penn-Helsinki Parsed Corpus of Middle English 2*.

⁹ One of the reviewers points out that this clause is susceptible to interpretation as unaccusative with VS order – a pattern which is not uncommon in Middle English. This observation suggests that the influence of lability on the position of the subject in Old and Middle English intransitive clauses might be a rewarding topic of research, as it raises the question whether postposition of the subject is rarer with labile than with non-labile intransitive verbs for the same reasons of ambiguity argued in reference to the position of the object in transitive clauses. Since the NP *hore horte and heore wope* is in fact an object here, the example is still illustrative of the order VO with a labile verb.

¹⁰ However, there is typological evidence that VO is favoured by labile verbs with inanimate objects (Nichols et al. 166, Table 7; they use the term ‘ambitransitive’). Hickey (2002: 270) expresses the view

functional weight in clauses with a labile verb, as it helps to identify their valency and participants. In contrast, unambiguously transitive verbs can afford more structural freedom without compromising successful communication.

3 Corpus and methodology

The Early Middle English period (conventionally 1150–1300) is pivotal for both the processes with which this article is concerned. At this stage of the language, the number of labile verbs was rapidly increasing (Ingham 2020), while the optionality between VO and OV was dwindling in favor of the first. The corpus for this study on Early Middle English is comprised of the earliest prose texts in the second edition of the *Penn-Helsinki Parsed Corpus of Middle English* (PPCME2, 2000), namely those composed or whose manuscript dates from between 1,150 and 1,250 (periods M1 and MX1 respectively in PPCME2). All the texts are from the South and Midlands areas, since no northern texts from this period have been preserved. Some philological information about the texts in the corpus is provided for descriptive purposes only.

The *Kentish Homilies* (MS Cotton Vespasian D xiv) are written in the Kentish dialect. The East Midlands (EM) texts are the *Peterborough Chronicle, First and Final Continuations*, in MS Laud Misc. 636 (MS. E of Anglo-Saxon Chronicle), the *Trinity Homilies* (MS Trinity 335, B.14.52) and *Vices and Virtues* (MS Stowe 34). Finally, three texts are from the West Midlands (WM): the *Ancrene Riwe* (MS Cotton Cleopatra C vi), the *Lambeth Homilies* (MS Lambeth 487) and the five texts assembled in the so-called Katherine Group (MS Bodley 34), *Hali Meidhad, St Julian, St Katherine, St Margaret and Sawles Warde*.

Table 1 below visualizes the texts that make up the corpus of the study, as they are named in PPCME2 (Text ID), with an indication of their date of composition (CDate) or the manuscript date (MDate), if the former is unknown, dialect and genre, all based on PPCME2. The total word count is 210,769 words.

The first main goal of the study is to assess the effect of a verb's valency (labile or non-labile transitive) on the position of the object with respect to the verb. Given that transitive instances of labile verbs in the corpus are not that numerous, it was deemed more effective to start by finding as many verbs which were labile in Early Middle English as possible and extract all the transitive clauses in which they appear in the corpus. After that, some non-labile transitive verbs were selected, and all their examples collected.

that SVO was furthered at a time when inflections were disappearing in English because it “allows the easiest recognition of objects”, which would lead to the assumption that VO is favoured by labile verbs, too, on account of its greater distinctiveness.

Table 1: Texts of the corpus with dialect, date, genre and sample size.

Text ID	Dialect	MDate	CDate	Genre	Wordcount
cmkenthom-m1	Kentish		a1150	Homily	4,287
cmpeterb-m1	EM		c1150	History	7,333
cmlamb1-m1	WM	a1225		Homily	6,462
cmlambx1-mx1	WM	a1225		Homily	20,653
cmtrinit-mx1	EM	a1225		Homily	41,571
cmvices1-m1	EM		a1225	Religious treatise	28,061
cmhali-m1	WM		c1225	Religious treatise	8,869
cmjulia-m1	WM		c1225	Life of Saint	7,180
cmkathe-m1	WM		c1225	Life of Saint	9,032
cmmarga-m1	WM		c1225	Life of Saint	8,523
cmsawles-m1	WM		c1225	Homily	4,304
cmancriw-1-m1	WM		c1230	Religious treatise	49,225
cmancriw-2-m1	WM		c1230	Religious treatise	15,269
Total					210,769

The identification of the labile verbs in the corpus was a complex undertaking, as determining a verb's valency at a particular stage in the past is not straightforward. Dictionaries and corpora of earlier stages of English, such as the *Dictionary of Old English* (Cameron et al. 2018), the *Middle English Dictionary* (MED) or PPCME2 do not provide that information at all, or not consistently. Moreover, the Early Middle English period is of course not dealt with separately in MED. Since the definition of lability is crucial in this study to ensure reliable results, it seemed reasonable to err on the side of caution and follow the most restrictive view of the term.

The selection of the labile verbs for the data sample was performed in two separate stages. First, a provisional list was drawn up based on existing secondary literature. In particular, the Middle English reflexes of the Old English labile verbs in García García (2020), Hermodsson (1952), and Visser (1963) were included, as well as the Middle English labile verbs in García García and Ingham (forthcoming) and Ingham (2020). The second step was to confirm that the verbs were in fact used as labile in the early decades of Middle English and not only later in the period. It was considered that a verb was labile in Early Middle English if attested more than once in both an intransitive and transitive sense in the relevant texts in PPMCE2 (M1 and MX1) or in quotes provided by the MED antedating 1,250. This condition wasn't met by some of the Middle English verbs listed as labile in the previously mentioned García García and Ingham (forthcoming) and Ingham (2020), such as *adilizen*, *biburien*, *setten*, *ripen*, *shrinken*, *sincken*, *strecchen*, *thauen*, *colen*, *dimmen*, *drien*, *narwen*, *shitten* or *souren*, which were therefore culled.

The following verbs were tagged as labile in Early Middle English and all their transitive instances in the corpus registered: *anginnen* ‘to begin’, *aquenchen* ‘to extinguish, to die out’, *awaken* ‘to wake (sb.) up, to be awake’, *baken* ‘to bake, to undergo baking’, *beien* ‘to bend’, *brennen* ‘to burn’, *breken* ‘to break’, *forbrennen* ‘to burn up’, *formelten* ‘to melt (sth.) completely’, *gladen* ‘to gladden, to be gladdened’, *goden* ‘to improve’, *hongen* ‘to hang’, *heien* ‘to raise, to go up’, *heten* ‘to heat, to become hot’, *lighten* ‘to light, to emit light’, *melten* ‘to melt’, *alighten* ‘to light, to emit light’, *openen* ‘to open’, *quenchen* ‘to extinguish, to die out’, *sheden* ‘to divide, to separate’, *stiren* ‘to set in motion, to move’, *tobreken* ‘to break into pieces’, *turnen* ‘to cause to rotate, to rotate’, *warmen* ‘to warm’, *wenden* ‘to turn’.

The fragments below illustrate the intransitive (a) and transitive (b) argument frames of some of *openen*, *quenchen* and *breken*:

- (10) a. *alle þeo in heouene schule beon ase swifte [...] as þe echze*
all those in heaven should be as swift [...] as the eyes

Opened

Open

- b. *Ivliene þe eadie **openede** hire ehnen*
Juliana the blessed opened her eyes

‘Juliana the blessed opened her eyes’

(CMJULIA,123.501)

- (11) a. & *þe haligastes fur cwencheð hwen þe brondes þurch wraðð*
and the holy.ghost’s fire quenches when the flames through anger
beð isundred

are scattered

‘and the holy ghost’s fire dies out when the flames are scattered by anger’

(CMANCRIW-2,II.313.1105)

- b. *for alse water **quencheð** fur alse almes quencheð sinne*
for as water quenches fire as alms quench sin
‘for just as water quenches fire, so do alms quench sin’

(CMTRINIT,157.2123)

- (12) a. *and zif ðu **brekst** , scilde ðe godd*
and if you break , protect you god

‘and if you break, may god protect you’

(CMVICES1,89.1039)

- b. *alse me **brekeð** þe nute for to habbene þene curnel*
as man breaks the nut for to have the kernel

‘in the same manner, one breaks the nut in order to get the kernel’

(CMLAMB1,79.114)

All the clauses in the corpus in which one of the above listed verbs was used with a direct object, as in (10b), (11b) and (12b) were collected for the database.

Further, several non-labile transitive verbs were selected, and the clauses in which they are embedded included in the data sample. The verbs chosen were *don*, *finden*, *maken*, *nimen*, *quellen*, *taken*, *slen*, *sechen*, *thurhsechen*, *underfon*, *undernimen*. Notice that all of them are mono-transitive verbs. With ditransitive verbs such as *bringen* or *given* the presence of a second object might affect the position of the first and interfere with the results of the study. To which extent this might be the case is not elucidated in recent literature on the position of objects in double-object constructions, as it focuses on the position of the arguments in relation to each other, and not to the verb (e.g., Allen 2006; Koopman and van der Wurff 2000; Yáñez-Bouza 2016). Therefore, to avoid unpredictable interferences, no ditransitive verbs were included in the data sample.

Examples had to be extracted manually using an external search engine, as verbs are not tagged for valency and the corpus is not lemmatized. The relevant fragments were loosely translated and the parsing in PPCME2 was examined and occasionally modified. For instance, the argument in bold in (13) is tagged as direct object in my data sample, but not in PPCME2:

- (13) & for þi ne secheð **nouðer leche** *neleche creft*
 and for that not seeks neither physician nor medicine
 ‘and for that reason does not seek neither a physician nor a medicine’
 (CMANCRIW-1,II.136.1811)

Quite a large number of the initially selected clauses had to be removed from the sample. For example, relative clauses with an object relative pronoun had to be discarded. They are obviously not diagnostic of word order, since the relative pronoun (in bold in [14]) must be the first clausal constituent. An example is:

- (14) *and sume mid boges þe hie breken of þe trewes*
 and some with branches that they broke off the trees
 ‘and some with branches that they broke off the trees’
 (CMTRINIT,91.1218)

Imperative clauses were also excluded, as they almost never show OV order in the corpus, and given their abundance, their inclusion would have inflated the number VO instances out of proportion. One of the very scarce examples of an object (in bold) preceding the imperative is:

- (15) *Make seihte betwen Milce and Rih[t]wisnesse,*
 make harmony between forgiveness and righteousness
and Dom and Rewðe *make wel to-gedere*
 and justice and compassion make well together
 ‘make harmony between forgiveness and righteousness, and make justice
 and compassion go well together’
 CMVICES1,115.1408–1409

The total number of tokens is 961, 212 of them with labile-transitive and 749 with non-labile-transitive verbs. The clauses containing the verbs were collected in a spreadsheet and tagged for six variables: (i) object type (pronoun, NP or quantified); (ii) object length (short objects consisting of three words or less, long objects with more than three words); (iii) clause type (main, subordinate, conjunct and infinitive); (iv) type of verbal cluster (with or without an auxiliary); (v) valency of the verb (labile or non-labile transitive) and (vi) object-verb order (VO or OV), which is the independent variable in this study.

Unlike variable (v), the effect of variables (i) to (iv) on the position of objects relative to the verb in the early stages of English (Old and Middle English) has been examined in numerous previous works. As has been pointed out in the Introduction, the reason to include them in the present analysis is threefold: to quantify their effect in the selected corpus of Early Middle English prose, to determine whether there are any interactions among them or between them and lability (for example, whether the effect of lability on the position of the object is canceled with object pronouns) and to establish a hierarchy of conditioning power among them, including the fifth one, lability.

Regarding variable (i), it has long been acknowledged that OV is much more likely with pronominal than with nominal objects in early English (see Denison 1993: 40; Fischer et al. 2000: 141–142, 2017: 195; Los 2015: 173; Mitchell 1985: II, 965–966; Traugott 1992: 276).¹¹ The following example illustrates the frequent OV pattern with a personal pronoun as object, in bold:

- (16) *On ða halize write we **hit** findeð*
 On the holy writings we it find
 ‘We find it in the Holy Scriptures’
 (CMVICES1,85.989)

Example (17) records the postverbal position favored by NP objects:

- (17) *and al þat man doð for sunderlepes to quemmen gode. alle hie*
 and all that one does for specially to please god, all they
*quencheð **Sinne***
 extinguish Sin
 ‘and all the things that one does specially to please God, all of them
 extinguish sin’
 (CMTRINIT,159.2133)

¹¹ According to Koopman (1991–1993) pronominal objects are only found after the non-finite verb (in clauses with an auxiliary) in texts after 950.

Among nominal objects, quantified NPs have been shown to precede the verb more frequently than non-quantified ones in Late Middle English (van der Wurff 1999). The trend seems to be operative in Early Middle English, too, according to Pintzuk et al. (2000) and Kroch and Taylor (2000: 156), who deduce from an admittedly small database of clauses with two objects, one of which is a postverbal pronominal object, that “non-quantificational noun phrases [unlike quantificational ones] do not prepose in Early Middle English [from their assumed position in underlying structure]”. The sentence below shows a quantified preverbal object in our sample:

- (18) *Alle synfulle men þe heuedsynnes don habbeð. and nelleð*
 All sinful men who head.sins done have and not.will
þerof no shrift Nimen
 thereof no penance take
 ‘all sinful men who have committed deadly sins and won’t accept penance for them’
 (CMTRINIT,41.554)

With respect to variable (ii), VO is more frequent with long objects for reasons of processing ease (see for instance Kohonen 1978: 123–132; Pintzuk 2002b: 384; Pintzuk and Taylor 2006: 252, 254). Weight may overlap with object type (variable i), as pronouns are usually shorter than NPs, but not fully, as will be argued in Section 3.¹² In the following example, a long NP object follows the verb, as expected:

- (19) *& tis ferliche fur schal lihten in ow þe halwende lei*
 and this wonderful fire shall light in you the healing flame
of þe hali gastþe
 of the holy ghost
 ‘and this wonderful fire shall light in you the healing flame of the Holy Ghost’
 (CMKATHE,35.253)

Variable (iii), clause type, clearly affected the position of verb and object in Old English, as main clauses had a tendency to verb second, whereas verb-final was favored in subordinate clauses (see e.g., Denison 1993: 29–30; Fischer et al. 2017: 188–189; Mitchell 1985: II, 958–959). It logically follows that OV is more frequent in the latter than in the former.¹³ On the other hand, conjunct clauses – those introduced by *and* or *ac* ‘but’ – have been tagged separately because of their special behavior in Old English, where they may display verb-late and verb-final order (and hence OV), even when coordinated to a main clause (Bean 1983: 88; Bech 2017; Los 2015: 167; Mitchell

¹² Length can also correlate with information structure, which has been left out of this study. See Denison (1993: 40) for a discussion of the correlation between weight and “givenness”.

¹³ The trend is by no means without exceptions (see e.g., Fischer et al. 2017: 194–195).

1985: Vol. I, 694, II 958). Infinitive clauses were also included with an independent tag, as they show distinctive word order patterns in the *Continuations of the Peterborough Chronicle* (henceforth PeterCont). The category includes infinitival purpose clauses and infinitival complements to non-auxiliary verbs, as in (20) and (21) respectively:

(20) & heo schal habbe leaue to gladien hire fere
 and she shall have leave to gladden her companion
 ‘and she shall have leave to entertain her companion’
 (CMANCRIW-1,II.57.552)

(21) and hat hem me nemen,
 and commanded them me take
 ‘and [he] commanded them to take me’
 CMVICES1,17.203

Variable (iv) distinguishes between clauses with verbal clusters consisting of a finite auxiliary verb and a non-finite main verb and those with a single finite verb. In the tagging for this work, the category auxiliary verb includes (pre)modal verbs (*connen, moten, mouen, ouen, shulen, willen*), as well as *let* + infinitive and *have* and *be* + past participle. An example with *willen* is:

(22) Ich þochte quod he ofte þt ich walde awakien þe
 I thought said he often that I would awake you
 ‘I thought he often said that I would awaken you’
 CMANCRIW-1,II.175.2445

This variable is crucial for much of the recent research on verb-object placement in Old English and Early Middle English, such as Kohonen (1978), Kroch and Taylor (2000), Pintzuk (1999, 2002a, 2002b), and Pintzuk and Taylor (2006). The authors of the three latter studies restrict their corpus to clauses with a verb phrase containing an auxiliary and an infinitive complement “where the order of the (non-finite) main verb and its complements is not affected by finite verb movement” (Pintzuk 2002b). They exclude from their database clauses with a single tensed verb as not diagnostic of VO because they assume that their element order is affected by such movement (see further the explanation in Kroch and Taylor 2000: 144–145). Whether this is the case is immaterial to the present study, whose main goal is to assess the effect of lability on word order and is based solely on surface phenomena. Nevertheless, clauses with and without an auxiliary have been tagged differently to quantify the divergence from one another.

Variable v) addresses the valency of the main verb in the clause. Its effect on word order has not been taken into consideration in the literature so far, except in

the aforementioned study on the *Continuations of the Peterborough Chronicle*. Example (9) above illustrates the assumed workings of this variable.

Once the tagging was completed, the impact of variables i) to v) (object type, object length, clause type, type of verb phrase and lability) on the position of the object relative to the verb was assessed. First, Pearson's chi-squared test (Pearson 1900) was performed on each factor separately in order to measure the significance of their effect. Further, some of the factors were cross-tabulated for statistical independence. Finally, a step-down logistic regression analysis was conducted using Rbrul (Johnson 2009) with the aim to find out which multivariate model accounts for the data in the most effective way. The *alpha* value in this study is 0.05 (this is the most usual significance level). This means that *p*-values < 0.05 are statistically significant, whereas those >0.05 are not. The data and the results of the tests are presented and discussed next.

4 Quantitative analysis of the variables that affect the position of verb and object in Early Middle English

4.1 Quantitative discussion of each independent variable

This section presents a quantitative analysis of each of the five variables described above, with tables that reproduce number and proportion of instances of OV and VO per variable, followed by a discussion of the results that include an assessment of their statistical significance applying Pearson's chi-squared test. The section ends with the main conclusions resulting from the crosstabulation of the factors most likely to interact (Table 2).

In agreement with previous research, OV is found much more frequently with pronouns than with NPs, both quantified and not. The difference between object pronouns and the other two categories combined is statistically significant at $p < 0.05$,

Table 2: OV–VO by object type in Early Middle English.

Object type	OV	%	VO	%	Total
Pronoun	131	51.8 %	122	48.2 %	253
NP	114	20.3 %	448	79.7 %	562
Quantified NP	45	30.8 %	101	69.2 %	146
Total	290	30.2 %	671	69.8 %	961

Table 3: OV – VO in Early Middle English, by object length.

Object length	OV	%	VO	%	Total
Short ≤ 3	282	34.4 %	537	66.4 %	819
Long > 3	8	5.6 %	134	94.4 %	142
Total	290	30.2 %	671	69.8 %	961

with a chi-square statistic of 76.0528 and p -value < 0.00001 . Quantified objects show OV more often than non-quantified ones (30.8 vs. 20.3 %); the contrast, although less stark, is also statistically significant at $p < 0.05$. These results are in line with previous research, including Kroch and Taylor's data on the frequency of OV for quantified and non-quantified NPs in Early Middle English, namely 41 versus 30 % (Kroch and Taylor 2000: 158, Table 6.11) (Table 3).

As explained above, objects with three words or fewer are tagged as short; long objects are those with more than three words. The strong effect of length on the position of the object does not come as a surprise. It has an extremely low p -value (< 0.00001) and is therefore very statistically significant. Only eight objects comprising more than three words precede the verb in the corpus and all of them except one are quantified, as in (23) below:

- (23) *swa me ma, mang alles kennes liues menn, sume gode and
so one may, among all kind's lives men, some good and
sume euele finden
some evil find
'so one can find, among men of all kinds of lives, some goodness and some
evil'
(CMVICES1,75.845)*

It has been already mentioned that this variable might correlate with two of the values of the variable 'object type', pronoun and NP, as the former are generally shorter than the latter. However, the two variables have different effect strength: short NPs follow the verb much more frequently than pronouns do (66.4 vs. 48.2 %). That is, the effect of object type is stronger than that of object length. The strength of each variable will be measured with Rbrul, as pointed out above.

Table 4 shows that VO is much more frequent in all four clause types. Conjunct clauses (those introduced by *and* or *ac* 'but') stand out because of the low incidence of OV and will be discussed last. Main, subordinate and infinitive clauses show a similar object order; even the difference between main and subordinate clauses, the two more distant groups of the three, is not statistically significant (p -value = 0.173153). This is a remarkable innovation with respect to Old English, where the influence of clause type on word order is crucial, as mentioned above: the basic word order for

Table 4: OV – VO in Early Middle English, by clause type.

Clause type	OV	%	VO	%	Total
Conjunct	35	18.9 %	150	81.1 %	185
Main	75	29.5 %	179	70.5 %	254
Infinitive	36	34 %	70	66 %	106
Subordinate	144	34.6 %	272	65.4 %	416

subordinate clauses is verb final, and hence OV, whereas main clauses are rather typically verb-second – presumably because of finite verb fronting to second position – and therefore show VO more often than subordinate clauses (cf. the brief discussion in Fischer et al. 2017: 194–195 and a more detailed survey in Los 2015: 157–181). The data agree with previous analyses on Early Middle English word order, such as Kroch and Taylor (2000: 134–135), who also note the same word order pattern in main and subordinate clauses.

Conjunct clauses show the lowest proportion of OV of all clause types in Early Middle English prose. The difference with the closest group, main clauses, is statistically significant (p -value = 0.011316, significant at $p < 0.05$). In contrast, Old English conjunct clauses were frequently verb-final, and hence OV. The disproportionate frequency of the order VO found in our corpus of Early Middle English prose might be related to the fact that subjects are often elided under conjunction and hence preverbal objects could easily be interpreted as subjects and are thus avoided. Notice for example the following excerpt:

- (24) *ach ha wes war þer of & turnde alþe meistrīe to godes*
 but he was aware there of and turned all.the prestige to god's
Strengðe
 Strength
 'but he was aware thereof and turned all the prestige to god's strength'
 (CMANCRIW-1,II.173.2423–2424)

If the object *alþe meistrīe* 'all the prestige' was placed before the verb, no linguistic clue would prevent its mistaken interpretation as the subject of *turnde*.

The results on clause type just discussed differ mainly in one respect from those obtained from the analysis of PeterCont. In that text, infinitive clauses stand out for their higher proportion of OV (66.7 vs. 33.8 % in main clauses, the closest following type). Further, conjunct clauses have a lower percentage of OV in PeterCont than main and subordinate clauses, but the difference was found not statistically significant applying Fisher's exact test.

Table 5: OV – VO in Early Middle English, by type of verb phrase (\pm auxiliary).

Type of V phrase	OV		VO		Total
+aux	97	47.1 %	109	52.9 %	206
–aux	193	25.6 %	562	74.4 %	755

The data of this study indicate that the effect of clause type on word order had almost completely disappeared in Early Middle English. It is to be expected that its erosion was underway in late Old English, which might be worth researching.

The data in Table 5 suggest that the presence of an auxiliary does affect the position of verb and object in Early Middle English, with verb phrases with an auxiliary favoring OV to a higher degree than those without an auxiliary. The difference is very statistically significant (the chi-square statistic is 35.5862; p -value < 0.00001). (25) illustrates the object (in bold) preceding the main verb in the presence of an auxiliary:

- (25) *Ne ec ne scule ze nefre ufe! don*
 Not but not shall you never evil do
 ‘But you shall never do evil’
 (CMLAMBX1,41.516)

The sequence inflected verb (*scule*) – object (*ufe!*) – uninflected verb (*don*), known as brace construction, is a reflex of Old English and is still found in other Germanic languages (cf. German *Ich habe dich nicht gesehen* ‘I haven’t seen you’, lit. ‘I have you not seen’).

As noted in the section on methodology, an important part of the research on verb-object order changes in early English in the last decades is restricted to clauses with a verb phrase consisting of an auxiliary verb and a main verb because of alleged theoretical constraints on the diagnostic power of single tensed verb clauses. The dataset in this study supports a differential treatment of the two types of verbal cluster, as found in preceding studies, and contradicts the results obtained from PeterCont, where the presence of an auxiliary did not come up as a conditioning factor on the position of the object.

Table 6 shows that clauses with labile-transitive and non-labile-transitive verbs differ with respect to the element order in the verbal clause. In both cases VO

Table 6: OV – VO in Early Middle English by valency of the main verb.

Valency	OV	%	VO	%	Total
Labile trans	43	20.3 %	169	79.7	212
Transitive	247	33 %	502	67 %	749

outnumbers OV, but VO is more frequent in clauses with a labile-transitive than in those with a non-labile-transitive verb. The difference, although not very large, is statistically significant: the chi-square statistic is 12.6368 and p -value = 0.000378, significant at $p < 0.05$ (incidentally, the results are also significant at a lower p -value, which indicates that the evidence in favor of the proposed hypothesis is stronger).

The data support the main hypothesis of this research, namely that labile-transitive verbs allow less word order variability than non-labile-transitive verbs. There are larger margins of variation in the position of verb and object in clauses with non-labile-transitive verbs, in which the less expected word order pattern OV occurs more frequently than in clauses with labile-transitive verbs. Lability then seems to influence the rigidification of word order patterns in English. Labile clauses anticipate the trend to *invariable* VO that will become almost exceptionless in 1400.

The figures confirm the results obtained from the analysis of PeterCont. In that text, the divergence between the two valency types was even more pronounced: transitive instances of labile verbs showed OV in 13.3 % of the cases, as opposed to 29.7 % of transitive-only verbs.

Once each of the independent variables was assessed quantitatively, some of them were cross-tabulated to identify likely interactions between them. Following the initial hypothesis that clauses with labile verbs tend to have a more stable VO pattern because of the need for disambiguation, one could predict an interaction between lability and object type, as that need would be more compelling when the function of the participants is not morphologically coded, as is largely the case with NPs in Early Middle English, than when it is coded, as with pronominal objects. The cross-tabulation of the variables lability and object type yields the results shown in Table 7 (the category NP includes quantified and non-quantified NPs; percentages are in bold).

Pronominal objects in general tend to precede the verb much more often than NPs (see Table 2). However, they do so in varying proportions with labile-transitive and non-labile-transitive verbs. The difference in the placement of the object between labile-transitive and non-labile-transitive verbs is much greater with NP

Table 7: OV–VO by object type and lability in Early Middle English.

Object type	Lability	OV	%	VO	%	Total
Pro-objects	+Lab	26	41.3	37	58.7	63
	–Lab	105	55.3	85	44.7	190
NP-objects	+Lab	17	11.4	132	88.6	149
	–Lab	142	25.4	417	74.6	559
Total		290	30.2	671	69.8	961

objects than with pronominal objects. Only 11.4 % of NP objects precede the verb in clauses with a labile-transitive verb, as opposed to 25.4 % with a non-labile-transitive. The difference is statistically significant at $p < 0.05$. On the contrary, the effect of lability with pronominal objects is not statistically significant ($p = 0.054073$). As predicted, the effect of lability is stronger with NP-objects, which are ambiguous with respect to their function in the clause, than with pronouns, which display distinctive case. The interaction between object type and lability gives further support to the main hypothesis of this article, namely that lability has an effect on word order in Early Middle English.

4.2 Stepwise logistic regression analysis of the variables

A stepwise logistic regression analysis was conducted on the data using Rbrul (Johnson 2009) in order to assess the strength of each variable and whether any of them are dispensable to cover the data. The results are displayed in Table 8.

The table shows the best model, which is the one that incorporates all the variables discussed above as predictors. The set response was VO. If the logg odds are positive, the factor has a favoring effect on VO and a disfavoring effect if the logg odds are negative. The variables are presented in order of strength, with object type having the strongest conditioning force on the position of verb and object, followed

Table 8: VO–OV in Early Middle English. Multivariate logistic regression analysis.

Variable	Factor	Logg odds
Object type	NP	0.739
	Quantified	−0.046
	Pro	−0.692
Object length	Long > 3	1.096
	Short ≤ 3	−1.096
Auxiliary	−Aux.	0.539
	+Aux.	−0.539
Clause type	Conj.	0.768
	Mat.	0.063
	Sub.	−0.313
	Inf.	−0.518
Verb valency	Labile-trans.	0.405
	Non-labile-trans.	−0.405

Table 9: V–OV in Early Middle English. Multivariate logistic regression analysis without conjunctive clauses.

Variable	Factor	Logg odds
Object type	NP	0.711
	Quantified	0.091
	Pro	−0.802
Object length	Long > 3	1.005
	Short ≤ 3	−1.005
Verb valency	Labile-trans.	0.502
	Non-labile-trans.	−0.502
Auxiliary	−Aux.	0.424
	+Aux.	−0.424

by object length, the presence or not of an auxiliary, clause type and finally lability. The multivariate regressive analysis that includes verb valency marking is more effective at covering the data than the one that does not. It demonstrates that the type of valency coding had an effect on word order in Early Middle English prose texts.

A second run was conducted excluding conjunctive clauses from the data sample. The reason is that conjunctive clauses present word order idiosyncrasies that might not be immanent to clause type, but related to the frequent elision of the subject in this type of clauses (see Table 4 above with comments). Table 9 reproduces the results of the second run; the variables are ordered by strength.

As Table 9 shows, if conjunctive clauses are excluded from the date sample, the data are best covered *without* the variable clause type as a predictor. This doesn't come as a surprise, since the differences between the remaining three values, infinitive, main and subordinate clauses, are insignificant (see Table 4 above). The strength of the variables also varies in this new model without conjunctive clauses. Lability emerges as slightly more relevant than the presence or absence of an auxiliary as a predictor of the position of the object.

Whether conjunctive clauses are included in the data sample or not, the multivariate logistic regression analysis of the data indicates that lability is a conditioning factor of the placement of the object in Early Middle English. Further, the interaction between lability and object type supports the functional arguments on which the hypothesis of the study is based. The possible connection between the spread of lability on the rigidification of word order has not been explored in diachronic studies of English so far, so the results presented above open new and

promising possibilities in the field. Correlations between valency types and word order patterns have enjoyed attention in typological studies, such as the already mentioned Nichols et al. (2004) or the *Valency Patterns Leipzig online database* (Hartmann et al. 2013).¹⁴ These studies, as far as I can see, seek and register correlations between a certain word order pattern, say VO, SV or Verb-final, with certain valency coding types, say ambitransitive (i.e., labile), leaving aside the synchronic correlation between lability and word order (in)flexibility and the diachronic association between the expansion of lability and a move towards a fixed word order. The results of this study encourage typological research on both these issues.

5 Summary and conclusion

This investigation has analyzed quantitatively the impact of five morphosyntactic variables on the position of the object with respect to the verb in Early Middle English prose (ca. 1150–1250), when variation between VO – OV was still possible. The corpus comprises all prose texts marked as M1 and MX1 in *The Penn-Helsinki Parsed Corpus of Middle English* (210,769 words). Four of those variables have been the subject of previous research on word order: object type, object length, clause type and type of verbal cluster (\pm auxiliary). However, their effect in relation to each other has not been quantified before. One of the main results of this article has been to establish a hierarchy of the factors influencing the placement of the object in Early Middle English. The analysis concludes that the first two variables, object type and object length, have the strongest conditioning force on the choice between VO and OV in our sample, which only confirms the results of preceding studies. With respect to clause type, there is no significant difference in the position of the object in main, subordinate and infinitive clauses in our data sample of Early Middle English prose. Only conjunctive clauses diverge significantly by favoring OV out of proportion, although this may well be a function of the frequent omission of the subject in this type of clause and merits further research. The type of verbal cluster unequivocally emerge as a significant predictor of the position of the object in Early Middle English prose, with verb phrases with an auxiliary exhibiting OV more frequently than those without one. This supports the differential treatment of the two types of verb phrase in recent research, if not necessarily their authors' assumption that clauses without an auxiliary are not diagnostic of word order.

The central achievement of this paper has been to introduce lability – the fifth variable under consideration – as a possible contributor to the rigidification of word

¹⁴ Constituent order is an *optional* feature in the questionnaire for the *Valency Pattern Leipzig* project (Haspelmath and Hartmann 2015: 64).

order. Lability is an instance of morphological syncretism which, contrary to the loss of case marking, has not been associated with word order changes in scholarly discussions in the past. Labile verbs are ambiguous with respect to their valency. This study has argued for the hypothesis that they might favor a fixed word order pattern because of its disambiguating function. From that hypothesis follows that labile verbs, when used in a transitive sense, favor the expected order VO, or what is the same, that the receding variant OV is significantly more exceptional in Early Middle English clauses with *labile* transitive verbs than in clauses with *non-labile* transitive verbs. The hypothesis was tentatively tested in one single Early Middle English text, the *First and Final Continuations of the Peterborough Chronicle*, with promising results. The data of the present study provide robust proof that lability is a reliable predictor of VO in Early Middle English. A multiple logistic regression analysis with Rbrul shows that a model including lability as a predictor is more consistent with the data than one without. This implies that labile verbs anticipate the trend towards a fixed (S)VVO order, which will be the norm for all verb types by 1400. The study shows further that lability interacts with object type, with NPs (largely unmarked for case) showing OV much more frequently than PROs (with case generally unambiguous) in transitive clauses with a labile main verb than in those with a non-labile verb. This interaction provides additional support to the functional arguments in which the main hypothesis of the study is grounded, namely that lability plays a role in the move to a more rigid constituent order in English. The results of this study may have relevance beyond the scope of English and inspire further language-specific and typological studies on word order.

Acknowledgments: This research was funded by MCIN/AEI/10.13039/501100011033, grant PID2020-119200GB-I00. I thank three anonymous reviewers for their comments and suggestions. I would also like to thank Esaúl Ruiz Narbona for his help with the implementation of Rbrul and, last but definitely not least, Francisco García Valero, who designed and elaborated the tables with the aggregated data and tested the soundness of the statistical analysis.

Data availability statement: The tables with the aggregated data for this article can be found at <https://doi.org/10.5281/zenodo.8029805>.

References

- Allen, Cynthia L. 2006. Case syncretism and word order change. In Ans van Kemenade & Bettelou Los (eds.), *The handbook of the history of English* (Blackwell Handbooks in Linguistics), 201–223. Oxford: Blackwell.
- Bean, Marian C. 1983. *The development of word order patterns in Old English* (Croom Helm Linguistics Series). London & Canberra: Croom Helm.

- Bech, Kristin. 2017. Old 'truths', new corpora: Revisiting the word order of conjunct clauses in Old English. *English Language and Linguistics* 21(1). 1–25.
- Berndt, Rolf. 1989. *A history of the English language*. Leipzig: VEB Verlag Enzyklopädie Leipzig.
- Butt, Miriam. 2009. Modern approaches to case: An overview. In Andrej L. Malchukov & Andrew Spencer (eds.), *The Oxford handbook of case*, 27–43. Oxford: Oxford University Press.
- De Bastiani, Chiara. 2022. The reanalysis of VO in the history of English. In Bettelou Los, Claire Cowie, Patrick Honeybone & Graeme Trousdale (eds.), *English historical linguistics: Change in structure and meaning* (Papers from the XXth ICEHL), 115–136. Amsterdam & Philadelphia: John Benjamins.
- Cameron, Angus, Ashley Crandell Amos & Antonette diPaolo Healey. (eds.). 2018. *Dictionary of Old English: A to I* online. Toronto: Dictionary of Old English Project. <https://doe.artsci.utoronto.ca/> (accessed 25 December 2021).
- Fischer, Olga, Ans van Kemenade, Willem Koopman & Wim van der Wurff. 2000. *The syntax of early English*. Cambridge: Cambridge University Press.
- Denison, David. 1993. *English historical syntax: verbal constructions*. London & New York: Longman.
- Fischer, Olga, Hendrik de Smet & Wim van der Wurff. 2017. *A brief history of English syntax*. Cambridge: Cambridge University Press.
- Fischer, Olga & Wim van der Wurff. 2006. Syntax. In Richard M. Hogg & David Denison (eds.), *A history of the English language*, 109–198. Cambridge: Cambridge University Press.
- García García, Luisa. 2020. The basic valency orientation of Old English and the causative *ja*-formation. A synchronic and diachronic approach. *English Language and Linguistics* 24(1). 153–177.
- García García, Luisa & Richard Ingham. forthcoming. Language contact effects on verbs semantic classes: Labiality in early English and Old French. In Sara M. Pons Sanz & Louise Silvester (eds.), *Medieval English in a multilingual context*. London: Palgrave.
- van Gelderen, Elly. 2011. Valency changes in the history of English. *Journal of Historical Linguistics* 1(1). 106–143.
- Hartmann, Iren, Martin Haspelmath & Bradley Taylor (eds.). 2013. *Valency patterns Leipzig*. Leipzig: Max Planck Institute for Evolutionary Anthropology. <http://valpal.info> (accessed 17 February 2022).
- Haspelmath, Martin. 1993. More on the typology of inchoative/causative verb alternations. In Bernard Comrie & Maria Polinsky (eds.), *Causatives and transitivity*, 87–120. Amsterdam & Philadelphia: John Benjamins.
- Haspelmath, Martin, Andreea Calude, Michael Spagnol, Heiko Narrog & Elif Bamyaci. 2014. Coding causal–noncausal verb alternations: A form–frequency correspondence explanation. *Journal of Linguistics* 50(3). 587–625.
- Haspelmath, Martin & Iren Hartmann. 2015. Comparing verbal valency across languages. In Andrej Malchukov & Bernd Comrie (eds.), *Introducing the framework and case studies from Africa and Eurasia* (Valency Classes in the World's Languages 1/1), 41–71. Berlin & Boston: De Gruyter Mouton. <https://ebookcentral-proquest-com.us.debiblio.com/lib/uses/reader.action?docID=4001496> (accessed 17 February 2022).
- Hermodsson, Lars. 1952. *Reflexive und intransitive Verba im aelteren Westgermanischen*. Uppsala: Almqvist & Wiksell.
- Hickey, Raymond. 2002. Internal and external forces again: Changes in word order in Old English and Old Irish. *Language Sciences* 24. 261–283.
- Ingham, Richard. 2020. How contact with French drove patient-labiality in English. *Transactions of the Philological Society* 118(3). 447–467.
- Johnson, Daniel E. 2009. Getting off the GoldVarb standard: Introducing Rbrul for mixed-effects variable rule analysis. *Language and Linguistics Compass* 3(1). 359–383.

- Kohonen, Viljo. 1978. *On the development of English word order in religious prose around 1000 and 1200 AD: A quantitative study of word order in context*. (Publications of the Research Institute of the Åbo Akademi Foundation 38). Turku: Åbo Akademi.
- Koopman, Willem F. 1991–1993. The order of dative and accusative objects in Old English. *Studia Anglica Posnaniensia: An International Review of English Studies* 25/27. 109–121.
- Koopman, Willem F. & Wim van der Wurff. 2000. Two word order patterns in the history of English: Stability, variation, change. In Rosanna Sornicola, Erich Poppe & Ariel Shisha-Halevy (eds.), *Stability, variation and change of word-order patterns over time*, 259–283. Amsterdam & Philadelphia: John Benjamins.
- 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.
- Lehnert, Martin. 1957. The interrelation between form and function in the development of the English language. *Zeitschrift für Anglistik und Amerikanistik* 5. 43–56.
- Levin, Beth. 1993. *English verb classes and alternations: A preliminary investigation*. Chicago: University of Chicago Press.
- Lewis, Robert E. (ed.). 1952–2001. *Middle English dictionary*. Ann Arbor, MI: University of Michigan Press. Online edition in *Middle English compendium*. 2000–2018. Frances McSparran, et al. (eds.). Ann Arbor, MI: University of Michigan Library. <http://quod.lib.umich.edu/m/middle-english-dictionary> (accessed 15 February 2022).
- Los, Bettelou. 2015. *A historical syntax of English*. Edinburgh: Edinburgh University Press.
- Malchukov, Andrej & Bernd Comrie (eds.). 2015. *Introducing the framework and case studies from Africa and Eurasia* (Valency Classes in the World's Languages 1/1). Berlin & Boston: De Gruyter Mouton.
- Malchukov, Andrej & The Leipzig Valency Classes Project Team. 2015. Leipzig Questionnaire on valency classes. In Andrej Malchukov & Bernd Comrie (eds.), *Introducing the framework and case studies from Africa and Eurasia* (Valency Classes in the World's Languages 1/1), 27–39. Berlin & Boston: De Gruyter Mouton.
- Marchand, Hans. 1951. The syntactical change from inflectional to word order system and some effects of this change on the relation verb-object in English. *Anglia* 70. 70–89.
- McMillion, Alan. 2006. *Labile verbs in English: Their meaning, behavior and structure*. Stockholm: Department of English, Stockholm University.
- Mitchell, Bruce. 1985. *Old English syntax*, vol. 2. Oxford: Clarendon.
- Nichols, Johanna, David A. Peterson & Jonathan Barnes. 2004. Transitivity and detransitivizing languages. *Linguistic Typology* 8(2). 149–211.
- Pearson, Karl. 1900. X: On the criterion that a given system of deviations from the probable in the case of a correlated system of variables is such that it can be reasonably supposed to have arisen from random sampling. *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science* 50(302). 157–175.
- Pintzuk, Susan. 1999. *Phrase structures in competition: Variation and change in Old English word order*. New York: Garland.
- Pintzuk, Susan. 2002a. Verb-object order in Old English: Variation as grammatical competition. In David W. Lightfoot (ed.), *Syntactic effects of morphological change*, 276–299. Oxford: Oxford University Press.
- Pintzuk, Susan. 2002b. Morphological case and word order in Old English. *Language Sciences* 24. 381–395.
- Pintzuk, Susan & Ann Taylor. 2006. The loss of OV order in the history of English. In Ans van Kemenade & Bettelou Los (eds.), *The handbook of the history of English* (Blackwell Handbooks in Linguistics), 249–278. Oxford: Blackwell.

- Pintzuk, Susan, George Tsoulas & Anthony Warner (eds.). 2000. *Diachronic syntax. Models and mechanisms*. Oxford: Oxford University Press.
- Primus, Beatrice. 2001. Word order typology. In Martin Haspelmath, Ekkehard König, Wulf Oesterreicher & Wolfgang Reible (eds.), *Language typology and language universals. Sprachtypologie und sprachliche Universalien. La typologie des langues et les universaux linguistics. An international handbook/Ein internationales Handbuch/Manuel international*, vol. 2, 855–872. Berlin & New York: Walter de Gruyter.
- Pysz, Agnieszka & Bartosz Wiland. 2012. The shift to strict VO in English at the PF-interface. In Peter Ackema, Rhona Alcorn, Caroline Heycock, Dany Jaspers, Jeroen van Craenenbroeck & Guido J. van den Wyngaerd (eds.), *Comparative Germanic syntax: The state of the art*, 311–352. Amsterdam & Philadelphia: John Benjamins.
- Shores, David L. 1971. *A descriptive syntax of the Peterborough Chronicle from 1122 to 1154* (Janua Linguarum. Series Practica 103). The Hague: Mouton.
- Siewierska, Anna. 1998. Variation in major constituent order: A global and a European perspective. In Anna Siewierska (ed.), *Constituent order in the languages of Europe* (Empirical approaches to language typology, Eurotyp 20–1), 475–551. Berlin & New York: Mouton de Gruyter.
- Sims-Williams, Helen & Matthew Baerman. 2021. A typological perspective on the loss of inflection. In Svenja Kranich & Tine Breban (eds.), *Lost in change: Causes and processes in the loss of grammatical elements and constructions* (Studies in Language Companion Series 218), 21–49. Amsterdam & Philadelphia: John Benjamins.
- 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. *The Journal of Comparative Germanic Linguistics* 25(1). 79–114.
- 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*, 1199–1213. 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 (YPL2)* 12a. 29–52.
- Traugott, Elizabeth Closs. 1972. *The history of English syntax: A transformational approach to the history of English sentence structure*. New York: Holt, Rinehart & Winston.
- Traugott, Elizabeth Closs. 1992. Syntax. In Richard M. Hogg (ed.), *The Cambridge history of the English language, vol. 1: The beginnings to 1066*, 168–289. Cambridge: Cambridge University Press.
- Visser, Frederik Theodor. 1963. *An historical syntax of the English language*, vol. 1. Leiden: Brill.
- Van Kemenade, Ans. 1987. *Syntactic case and morphological case in the history of English*. Dordrecht: Foris.
- van der Wurff, Wim. 1999. Objects and verbs in modern Icelandic and fifteenth-century English: A word order parallel and its causes. *Lingua* 109. 237–265.
- Yáñez-Bouza, Nuria. 2016. “May depend on me sending it you”: Double objects in early grammars. *Journal of English Linguistics* 44(2). 138–161.
- Kroch, Anthony, Ann Taylor & Beatrice Santorini. 2000–. *The Penn-Helsinki parsed corpus of Middle English (PPCME2)*, 2nd edn., release 4. Department of Linguistics, University of Pennsylvania (Philadelphia). CD-ROM. Available at: <http://www.ling.upenn.edu/ppche/ppche-release-2016/PPCME2-RELEASE-4>.