
IN THE RIGHT MOOD, IN THE RIGHT PLACE: ON MOOD AND VERB PLACEMENT IN OLD GERMANIC SUBORDINATE CLAUSES*

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ABSTRACT The indicative/subjunctive mood alternations and differences in verb placement in Old Germanic subordinate clauses have received much attention in the literature and have been interpreted in different ways, for example as strategies for clause marking, for information structure, in order to fulfill semanto-pragmatic requirements of the clause, etc. This paper presents an empirical survey that sheds light on the interaction between mood alternations and verb placement in Old Germanic subordinate clauses. An innovative aspect is that the survey is conducted from a cross-linguistic perspective by comparing Old English and Old High German. The results show clearer interactions in the first language than in the latter, thus hinting at the possibility that the two languages reflect two different stages of one and the same process. These findings are discussed and accounted for theoretically in the last section of the paper.

* We would like to thank the organizers and the audience of the 20th Diachronic Generative Syntax Conference (DiGS 20, York, 21st June 2018) and the anonymous reviewers. We would also like to thank Erwin Komen and Tara Struik for helping us with the OE queries, and Katharina Paul for the OHG data.

1 INTRODUCTION

In older Germanic languages, subordinate clauses exhibit alternations between indicative/subjunctive mood and verb placement. This is exemplified by the following Old English (OE) and Old High German (OHG) sentences, in which the finite verb can be indicative or subjunctive and occur to the right or to the left of complements and adverbials:¹

- (1) (...) *þe ge on eowrum gereorde næfdon ær.* OE
 (...) that you on your speech not-had.IND before
 ‘that you did not have before in your tongue.’
 (copreflives.o3_+ALS_[Pref]:1.3)
- (2) *nænig man, þe in þære Godes swinglan mid fullre gife*
 not-any man, REL in the God’s afflictions with full grace
gestande [...] OE
 stand.SUBJ [...]
 ‘[...] none who faces God’s afflictions with full grace.’
 (cogregdc.o24]_GDPref_and_4_[C]:11.274.13.3994)
- (3) *Soso Krist gibuoza themo sancte Stephanes hrosse thaz*
 as Christ healed.IND the.DAT saint Stephen’s horse the
entphangana OHG
 horse.disease
 ‘as Christ healed Saint Stephen’s horse from the disease’
 (TS 367, 2)
- (4) *daz ih fora dinem augom unskamenti si* OHG
 that I in.front.of your eyes not-ashamed am.SUBJ
 ‘(so) that I do not feel ashamed in front of you.’
 (ABA 8,9)

Traditionally, mood alternations (MAs) are taken as indicators of the dependent or independent status of a clause in older Germanic, as discussed for example in Schrodts (1983), Petrova (2008), Coniglio (2017), and Coniglio, Hinterhölzl & Petrova (2018) for OHG, and in Traugott (1972), Faraci (1980),

¹ In the absence of further specifications, all OE examples are taken from the York Corpus of Old English Prose and all OHG examples from the *Referenzkorpus Altdeutsch* (see section 2 for references and more details about the two corpora). As for OE primary sources, the references are automatically generated by the corpus (for an explanation about the abbreviations and texts cf. <https://www-users.york.ac.uk/~lang22/YCOE/YcoeFiles.htm>). For the OHG texts cited from the corpus, we used the following abbreviations: ABA = (Alt-)Bairisches Gebet A, T = Tatian, TS = Trierer Spruch.

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and [Vezzosi \(1998\)](#) for OE. In a similar vein, analogous proposals have been put forward for (modern) Romance languages (cf. [Farkas 1985, 1992](#), [Giorgi & Pianesi 1997](#), [Quer 1998](#), [Poletto 2000](#), etc.), Modern Greek (cf. [Giannakidou 2009, 2013](#)) and further languages. Interestingly, verb placement in modern Germanic is claimed to compete for the function of marking (in)dependency (cf. [Vezzosi 1998](#), [Axel 2007](#), etc.). Thus, V2 and V-final (or V-medial) orders are assumed to be the reflex of the main or subordinate status of a sentence, respectively.

On the other hand, verb placement in older Germanic is also often considered as a reflex of information structure (IS) (cf. [Schlachter 2004, 2012](#), [Hinterhölzl, Petrova & Solf 2005](#), [Hinterhölzl & Petrova 2009](#), [Petrova 2009, 2011](#), [Petrova & Hinterhölzl 2010](#), [Axel-Tober 2012](#), [Hinterhölzl 2015](#), [Coniglio 2017](#), [Coniglio, Linde & Ruetz 2017](#), [Coniglio 2019](#) for OHG; cf. [Pintzuk 1991](#), [van Kemenade & Los 2006](#), [van Kemenade 2009](#), [Bech 2012](#), [Taylor & Pintzuk 2012](#), [De Bastiani 2017, 2019](#), [Struik & van Kemenade 2018](#), [van Kemenade & Los 2018](#) for OE; cf. [Walkden 2014](#) for Old Germanic in general, etc.). For example, the following OHG examples of subordinate clauses show that the verb precedes a predicative XP in order to focalize it, as is illustrated in (5), but follows an object that is part of the background (given information), as illustrated in (6).

- (5) *liohtfaz thes lihhamen ist ouga / oba thin ouga uuirdit*
light of.the body is eye if your eye becomes
luttar / thanne ist al thin lihhamo liohter OHG
bright/simple, then is all your body bright
'The light of the body is the eye. If your eye becomes bright, then all your body is bright.'
Lat. *Lucerna corporis. est oculus. / si fuerit oculus tuus simplex. / totum corpus tuum lucidum erit.*
(T 69, 21ff, adapted from [Hinterhölzl 2009](#): 48)

- (6) *so hér then buoh int&a* OHG
when he this book opened
'as he opened the book'
Lat. *& ut reuoluit librum*
(T 53, 21, adapted from [Petrova 2009](#): 258)

In most modern Germanic languages, we find a different situation. On the one hand, MAs no longer reflect the different syntactic status of the clauses, but are rather used for other functions, for example to signal reported speech or counterfactuality. On the other hand, as already pointed out above, verb placement has become – with some exceptions – the most reliable indicator for

(in)dependency. Thus, most modern Germanic languages are configurational and make use of verb placement for signaling (in)dependency, whereas the Romance languages may resort to MAs for that (Meinunger 2004, 2006, but cf. Poletto 2000, Ledgeway 2012, etc. about verb placement in the Romance languages).

Starting from observations in the traditional literature, a recent theoretical investigation by Gärtner & Eythórsson (2020) sheds new light on the phenomena discussed here. They convincingly show that the Germanic languages reflect different stages of a more general diachronic change scenario (cf. Vezzosi 1998). These languages are claimed to move 1) from a system in which a) mood is used for purely syntactic functions and thus – according to Gärtner & Eythórsson’s (2020) terminology – is “recruited” for clause-combining (i.e. for marking (in)dependency) and b) verb placement is related to prosody and IS, 2) towards a system in which a) verb placement indicates clausal (in)dependency, while b) verbal mood acquires different types of more transparent semantico-pragmatic functions (“autonomous mood”), as represented in figure 1.

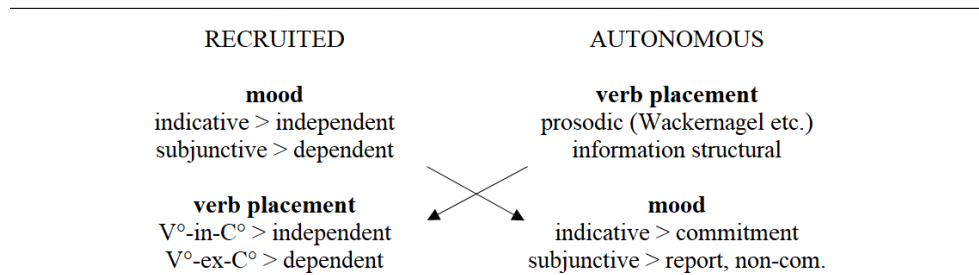


Figure 1 *Clausal (In)dependency Marking* (slightly adapted from Gärtner & Eythórsson 2020: 217)

Note that this is supposed to be a mere idealization of the underlying pattern which affects all Germanic languages, while none of these languages (nor other Indo-European languages) perfectly exhibit or have at some point exhibited such a perfect division of labor between mood and verb placement. If we adopt such an idealization, OE possibly reflects a transitory scenario in the diachronic change outlined above, since remains of mood as a marker for clausal (in)dependency can be found, while at the same time mood reflects the speaker’s attitude or is dependent on the mood in the main clause (Mitchell 1985). OHG, on the other hand, seems to reflect an older stage in the scenario sketched above, since mood is traditionally taken to signal clause (in)dependency (cf. Schrodtt 1983, Petrova 2008, *inter alia*).

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By considering OE and OHG as examples, in this paper, we intend to investigate the interactions between indicative/subjunctive MAs and verb placement in Germanic subordinate clauses. We intend to check whether there is empirical support for these traditional assumptions and whether differences can be observed between OE and OHG.

In section 2 we introduce our methodology and samples. Sections 3 and 4 present the results of the corpus study and an interpretation according to Gärtner & Eythórsson's (2020) proposals. The theoretical analysis is put forward in section 5.

2 METHODS

Considering that MAs in Old Germanic are traditionally viewed as indicating clausal (in)dependency, and that recent investigations have shown that verb placement is strongly determined by IS (cf. section 1), we would expect that MAs do not correlate with verb placement, since these languages are assumed to exhibit a higher degree of freedom in their word order with respect to their synchronic stages, probably due to information structural and/or prosodic requirements (cf. van Kemenade 2009 for OE, Hinterhölzl 2014, 2015, 2017, Hinterhölzl & Petrova 2018 for OHG, Walkden 2014, among others).

In order to test our null hypothesis, we perform an empirical investigation aiming to determine whether there is a clear division of labor between mood and verb placement; more specifically, we investigate whether OE and OHG reflect different stages in a diachronic scenario as sketched in Gärtner & Eythórsson (2020).²

To this end, all finite complement, adverbial and relative subordinate clauses were extracted from the York Corpus of Old English Prose (YCOE, Taylor, Warner, Pintzuk & Beths 2003) and from the *Referenzkorpus Altdeutsch* (Donhauser, Gippert & Lühr 2018, searchable via ANNIS, Krause & Zeldes 2016).

² We assume, however, that in English, dependency was probably signalled by means of verb placement alternation until the loss of V2 and until the reanalysis from OV to VO word order is complete. We are aware of the fact that in OE there was a high degree of variation in both main and subordinate clauses, but it must be kept in mind that VO word order is established around 1200 (with notable exceptions until circa 1400, cf. Fischer, van Kemenade, Koopman & van der Wurff 2000, Taylor & Pintzuk 2006). The loss of V2 is dated towards the end of the ME period (cf. van Kemenade & Westergaard 2012, among others), so even though word order in OE was probably not as clear an indicator as in OHG, OE still featured structurally different word orders which are lost during ME.

2.1 Old English

The YCOE corpus was searched via the *Corpus Studio Web Application* (Komen 2017); the application makes it possible to produce a database, which is further processed with *Cesax* (Komen 2011).

We selected complement, adverbial and relative finite clauses containing a verb either in the indicative or in the subjunctive; in the YCOE corpus, the verbs with a clear indicative and subjunctive ending present the final tags -I and -S respectively. We did not include the verbal forms which do not feature an explicit mood encoding.³ We selected all categories of verbs for this pilot study, namely the auxiliaries *have* and *be*, the modal verbs, and the lexical verbs; in (7a), a complement clause with a lexical verb in the indicative is exemplified, while (7b) exemplifies a complement clause with a modal verb in the subjunctive:

- (7) a. *ðæt he deð ðæt yfel*
 that he does.IND that evil
 ‘that he performs that evil (deed)’
 (cocura.o2_CP:56.435.22.3092)
- b. *þæt he heofenlic fyr asendan mæge*
 that he heavenly fire send may.SUBJ
 ‘that he may send heavenly fire.’
 (coprefcath1.o3_+ACHom_I_[Pref]:176.104.38)

Relative clauses are exemplified in (8), where a modal verb in the indicative and a lexical verb in the subjunctive respectively can be found:

- (8) a. *þe eard sculon werian wiglice mid wæpnum*
 who country shall.IND defend by.fighting with weapons
 ‘who shall defend the country by fighting with weapons’
 (coinspold.o34_WPol_2.1.2_[Jost]:28.32)
- b. *þe hy sylfe mid rihte gehealde*
 who them selves with right hold.SUBJ
 ‘who hold themselves righteously’
 (colaw6atr.o3_LawVIAttr:26.63)

³ Notice, however, that there are some other sources of ambiguity. In fact, among the verbs encoded as unambiguously indicative or subjunctive, there are past tense plural endings which are ambiguous but were nevertheless coded as either indicative or subjunctive (Pintzuk, p.c.). We are aware that the data may still present some noise, but we believe that the size of the sample is large enough to eventually smooth possible disturbing factors. However, we leave further refinements of the data for future investigation.

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In (9a), we find the auxiliary *have* in the indicative in an adverbial clause, while (9b) presents an adverbial clause with the auxiliary *be* in the subjunctive:

- (9) a. *for þan ðe we oft habbað ymbe þis awriten*
 for then that we often have.IND about this written
mid maran andgite
 with great sense
 ‘since we have often written about this with great sense.’
 (colsigewz.o34_+ALet_4_[SigeweardZ]:161.57)
- b. *Gif þu sy Godes sunu, send þe nyper of þisse*
 if you be.SUBJ God’s son send you down of this
heanesse
 height
 ‘If you are God’s son, throw yourself down from this high ground’
 (coblick,HomS_10_ [BIHom_3]:27.8.361)

Furthermore, a separate search was produced in order to retrieve those sentences containing crisis of the verb and the negation, as in (10):

- (10) *Fulgeorne hy witan, þæt hy nagon mid rihte þurh*
 full-well they knew, that they not-have with right through
hæmedþing wifes gemanan. OE
 carnal intercourse woman’s society.
 ‘They knew very well that they did not righteously have the society of a woman through carnal intercourse.’
 (colaw5_atr, LawVAtr:9.27)

The search thus formulated obtains all sentences with a verb either in the indicative or in the subjunctive mood, which are either affirmative or negative. In table 1, the total amount of sentences is presented:

	complement	adverbial	relative
indicative	3003	7817	10168
subjunctive	3443	3828	819

Table 1 Mood in OE complement, adverbial and relative clauses

The database created with *Xquery* language in the *Corpus Studio Web* application was further processed in *Cesax*, where we performed automatic counting

of the number of constituents preceding and following the indicative and subjunctive finite verb, as well as the number of words preceding and following the finite verb. The data were then saved as Excel files, and processed with R for the statistics (R Core Team 2019; <https://www.R-project.org>). The counting excludes subordinators, but includes clauses which are coded as dependent on the CP under consideration.

2.2 Old High German

For OHG, we likewise selected complement, adverbial and relative finite clauses containing a verb in either the indicative or in the subjunctive. Given the heterogeneous corpus of OHG texts, we restricted our search to the *Kleinere althochdeutsche Sprachdenkmäler* “shorter Old High German texts”, which are annotated in the *Referenzkorpus* following von Steinmeyer’s (1971) edition. More specifically, we extracted sentences that were randomly selected from non-translated texts, or from translated texts whose syntax is relatively independent from the Latin source;⁴ the texts are mostly in prose.

All categories of verbs were selected, namely auxiliaries, modal and lexical verbs; morphologically ambiguous cases were left aside. On the clause level, we discarded wrongly annotated sentences (for example, some sentences were incorrectly classified as relative clauses), whereas free relative clauses – which are misleadingly annotated as complement clauses in the corpus – were substituted by other complement clauses. For reasons of statistical comparability, we arranged our sample so as to have an approximately equal number of indicative and subjunctive sentences, so that, for each case, we took a similar number of indicative and subjunctive clauses (the latter being less frequent). The total number of clauses considered is given in table 2.

	complement	adverbial	relative
indicative	70	100	49
subjunctive	68	100	49

Table 2 Mood in OHG complement, adverbial and relative clauses

The corpus for OHG does not allow automatic counting of words and constituents. Thus, the number of words and constituents before and after the finite verb was counted manually; the data were prepared in Excel, to be later processed with R. As far as the counting procedure is concerned, we

⁴ In our queries, we added a metadata search that excluded all glossed texts, interlinear versions and translations (meta::relation_to_latin_original!="/(Glossierung|Interlinearversion|Übersetzung)/).

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excluded subordinators, as we did for OE; however, we could not include clauses that are complements of the clauses under examination in this pilot study, given that the OE and OHG corpora are constructed in different ways. We are aware that this might have effects on the comparability between OE and OHG, but intralinguistic comparability was preserved.

3 RESULTS

The null hypothesis to be tested on these two data sets is the same for both languages, i.e. that neither in OE nor in OHG is the position of the verb affected by mood. To test this hypothesis, we came up with a dependent variable that would allow us to gauge the sensitivity of the position to mood. We counted the number of constituents in the sentence after the finite verb, and divided it by the total number of constituents in the sentence, minus the verb and the complementizer or relativizer (an earlier analysis employing the number of words was discarded due to the criticism of an anonymous reviewer pointing out that this measure might be problematic). Below, we give an example of how the resulting variable *pos* is computed:

- (11) a. [that] [Peter] [**gave**] [Mary] [a flower]. $pos = 2/(5-2) = 0.67$
b. [dass] [Peter] [Maria] [eine Blume] [gegeben] [**hat**]. $pos = 0/(6-2) = 0$

In example (11 a), the number of constituents following the finite verb is 2, and the divisor, the total number of constituents in the clause, minus the complementizer *that* and the verb *gave*, is 3; thus, *pos* takes on the value 2/3. For example (11 b), we get a *pos* value of 0 because the finite verb is in final position. This means that the higher the *pos* value, the earlier the verb appears in the sentence. With the variable *pos* being defined, we can state the null hypothesis as follows:

$$pos(\text{indicative}) = pos(\text{subjunctive})$$

In what follows, we test this hypothesis by looking at the effect of MOOD on our dependent variable. The aim is not to actually falsify the hypothesis, but rather to establish whether there are effects of MOOD on the position of the verb in the two languages.

3.1 Old English

Since the cases in the indicative by far outnumber those in the subjunctive, we had to adjust the sample size of the indicative to that of the subjunctive. By iterated re-sampling, we made sure that the effects we see are not dependent on the adjusted indicative sample we have drawn. That is, we

bootstrapped from the larger indicative sample. We report the mean descriptive and inferential statistics based on a random sample from 10 iterated (re-)samplings.

Clause Type	Mood	mean(pos)	SD(pos)	N
complement	indicative	.42	.28	2932
	subjunctive	.33	.27	2931
adverbial	indicative	.31	.28	3740
	subjunctive	.23	.27	3740
relative	indicative	.26	.36	796
	subjunctive	.21	.34	788
TOTAL	indicative	.35	.29	7468
	subjunctive	.27	.28	7457

Table 3 Overall descriptive statistics by Clause Type and Mood

Inferential statistics: since the variable of choice, *pos*, has a binomial distribution, we computed logistic regressions with *MOOD* as a covariate for the dataset reported above. (The full details of the regression models can be found in the appendix.) For complement clauses, we found a significant effect of *MOOD*, $z = -7.01$, $p < .001$. This means that in *that*-complements, the verb is serialized reliably earlier in the indicative than in the subjunctive. For adverbial clauses, there was also a significant effect of *MOOD*, $z = -7.94$, $p < .001$. Thus, the verb is serialized earlier in the indicative than in the subjunctive in adverbial clauses, too. We found a somewhat weaker, though still significant effect of *MOOD* on verb positioning in the relative clauses, $z = -2.36$, $p < .05$, and this effect was in the same direction, indicating that the verb in relative clauses was serialized earlier in the indicative than in the subjunctive. In a final analysis, we lumped together all three clause types. As would be expected, we again found a significant effect of *MOOD*, $z = -10.72$, $p < .001$. This means that, overall, the verb is serialized earlier in the indicative than in the subjunctive mood. Figure 2 summarizes the reported data graphically; the inverted *x*-axis was chosen to accommodate the fact that the variable plotted on that axis is inversely correlated to the position of the verb in the sentence.

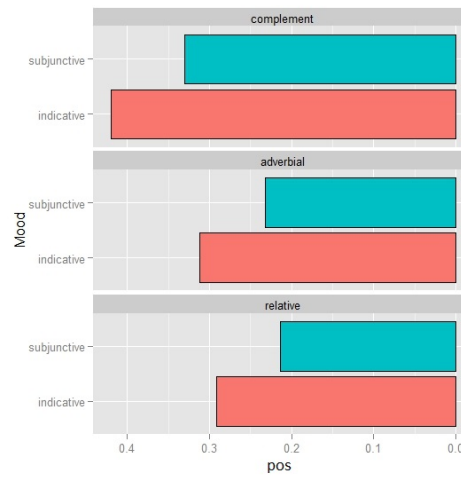


Figure 2 Adjusted means of verb position (*pos*) dependent on Mood and Clause Type in OE

3.2 Old High German

For OHG, the same analysis was carried out as for OE; all relevant details of the data treatment and statistical analysis were identical. However, the sample size in OHG is dramatically smaller and thus makes an inferential analysis in terms of logistic regression a somewhat dubious enterprise.

Clause Type	Mood	mean(pos)	SD(pos)	N
complement	indicative	.18	.29	70
	subjunctive	.27	.33	68
adverbial	indicative	.19	.26	100
	subjunctive	.13	.23	100
relative	indicative	.16	.26	49
	subjunctive	.17	.29	49
TOTAL	indicative	.17	.29	219
	subjunctive	.21	.28	217

Table 4 Overall descriptive statistics by Clause Type and Mood

Despite these worries, we again computed logistic regressions. However, there were no significant effects of MOOD on our dependent variable, *pos*, all $|z|s < 1.5$, all $ps > .10$. At this point, we are not sure whether this result should be attributed to the rather small sample size or to the lack of any effect in the population. Graphically, the OHG data are summarized by the

following plot:

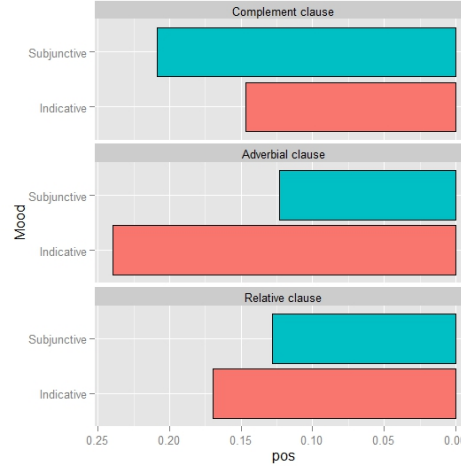


Figure 3 Adjusted means of verb position (*pos*) dependent on Mood and Clause Type for OHG

3.3 Summary of the Results

For the OE data, we found a statistically reliable effect of MOOD on the serial position of the verb. The sample size for OE is sufficiently large to reject the null hypothesis. This, however, is not the case for OHG: the sample is not sufficiently large, and, accordingly, the finding that there is no effect of MOOD on verb position in German has to be taken with a lot of caution, because this is a null effect: absence of evidence is not evidence of absence.

4 INTERPRETATION

Following Gärtner & Eythórsson (2020) and traditional assumptions in the literature, our empirical results seem to indicate that the two languages reflect different stages in the proposed diachronic scenario, as is schematically represented in figure 4.

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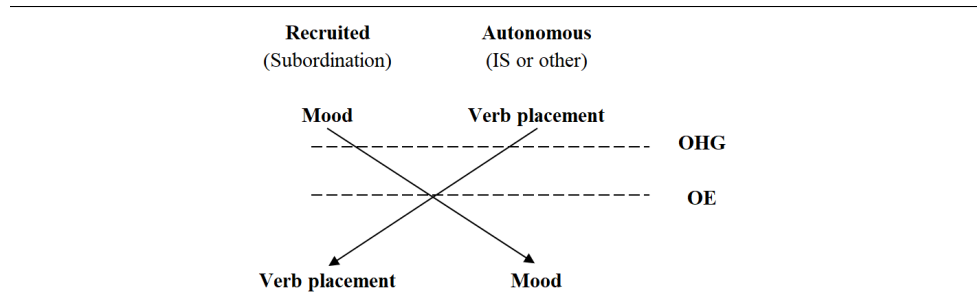


Figure 4 Clausal (In)dependency Marking in OE and OHG

We argue that, in this abstract scenario, OE is situated at an intermediate stage (at the point of intersection), in which mood and verb placement strongly interact because neither has the old system already been completely abandoned, nor has the new one completely prevailed (cf. [Vezzosi 1998](#)). In fact, after that point, English went a completely different way with respect to other Germanic languages, given that mood distinctions were mostly lost and verb placement alternations disappeared, with verb placement becoming rigid and identical for both main and subordinate clauses. In contrast, OHG is claimed to reflect a more conservative stage in which verb placement was still strongly dependent on IS (cf. [Schlachter 2004, 2012](#), [Hinterhölzl et al. 2005](#), [Hinterhölzl & Petrova 2009](#), [Petrova 2009, 2011](#), [Petrova & Hinterhölzl 2010](#), [Axel-Tober 2012](#), [Hinterhölzl 2015](#), [Coniglio et al. 2017 a.o.](#)), while clausal dependency was more frequently indicated by means of verb mood (cf. [Coniglio 2017](#), [Coniglio et al. 2018](#)). In fact, as shown in table 5 and figure 5 – taken from [Coniglio et al. \(2018: 20\)](#) – 31% of all OHG subordinate clauses exhibit a subjunctive verb, with – in particular – complement clauses scoring 44% (also cf. [Coniglio 2017](#)).

	main		subordinate	
indicative	15902	92%	7600	69%
subjunctive	1475	8%	3410	31%

Table 5 Mood in main and subordinate clauses in ReA (from [Coniglio et al. 2018: 20](#))

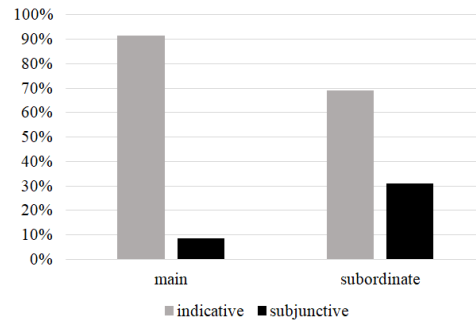


Figure 5 Mood in main and subordinate clauses in ReA (from [Coniglio et al. 2018: 20](#))

5 MOOD AND VERB POSITION IN GERMANIC

In this section, we will try to give a grammatical explanation for the differences in MA and verb placement in OHG and OE. For the syntactic analysis, we propose that morphological marking of mood on the verb, which is traditionally considered responsible for signaling (in)dependency, was independent from verb movement in the earliest stages of Germanic languages, as assumed in the diachronic scenario in section 4.

This implies that the mood features on the verb in OHG are interpretable features indicating the degree of embedding of the dependent clause. This leaves verb placement free for signaling other differences in grammar in OHG. As mentioned above, there is a wealth of observations showing that verb placement in Older German was used for indicating information-structural distinctions, with constituents representing given information preceding the finite verb and constituents representing new information following it, a system that only began to change in the MHG period, when the clause-final position became the unmarked position in all types of embedded clauses.

Almost in parallel to this development, MAs were weakened in embedded clauses after the OHG period. The reasons for this process are not entirely clear. The loss of morphological distinctions (due to final syllable weakening) is partially held responsible for this process. This account, however, is not very convincing, since the subjunctive with its morphological forms survived until the modern language and has only been reduced in its use.

An alternative account is needed that explains the pertinent changes by means of changes in the licensing of subjunctive forms in German. The fact is that the subjunctive mood has been replaced in complement clauses with infinitives with unrealized tense and finite clauses marked with the indicative mood and an epistemic modal verb.

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In order to capture the changes in the mood systems of German (where verb placement configurationally determines whether a clause is (in)dependent) and English (where verb placement does not determine whether a clause is (in)dependent), we argue for an analysis in which mood features on the verb are licensed syntactically via special complementizers and/or verb movement.

Giorgi (2009) points out that complement clauses in the subjunctive in Italian allow for complementizer deletion, while complement clauses in the indicative do not. Giorgi (2009) proposes that this fact indicates that the complementizer occupies different positions in the C-domain of complement clauses marked with the subjunctive and indicative mood, assuming that the clause containing a verb marked in the indicative involves additional structure that is absent in clauses marked with the subjunctive. Giorgi (2009) thereby follows Roussou's (2000) analysis of the complementizer system of modern Greek, in which *oti* (+ IND) occupies a higher C-head than *na* (+ SUB).

In line with these proposals, it is possible to interpret the linear differences between indicative- and subjunctive-marked finite verbs in Germanic, in particular in OE, as indicating that the verb marked with the indicative occupies a higher position in the C-domain (as a consequence of moving to a higher complementizer position) that serves to anchor the embedded clause to the index of the utterance context, with the subjunctive mood indicating that the embedded clause is anchored to the index of a context introduced by the matrix verb. This anchoring is mediated via a lower complementizer position in the C-domain (Lohnstein 2000, 2004, Gärtner 2001, 2002, Catasso & Hinterhölzl 2016, Hinterhölzl 2020). The difference between mood marking and verb position in OHG and OE follows then from the assumption that the mood features on the verb were interpretable features in OHG but constituted [-interpretable] features in OE. The latter required checking via movement of the verb into the local domain of the relevant complementizer position. In this analysis, verbs marked with the indicative mood can then be taken to move into the C-domain, while verbs marked with the subjunctive mood are taken to be only moved into the T-domain, under the assumption that T is local enough for the lower complementizer. Obviously, this claim is subject to empirical validation, which is, however, beyond the scope of this paper.⁵

⁵ An anonymous reviewer suggests that this could be checked with the help of higher adverbs. Unfortunately, the data that we have found are inconclusive, since the great majority of adverb(ial)s in our corpus comprises temporals and locatives which are probably interpreted as frame adverbials and precede both verbs with the subjunctive and the indicative. Adverbs that mark the border of the I-domain and C-domain, like epistemic, evidential, evaluative and speech-act-oriented adverbs, are not to be found in sufficient numbers to warrant a statistically significant answer.

In this scenario, we can then assume that what has been lost in the history of German is a [+finite] complementizer that introduces an alternative world with respect to which a clause embedded under an intensional verb is to be evaluated, leaving two alternative strategies: a) a non-finite clause in which the embedded verb is marked for unrealized tense in the sense of [Stowell \(1982\)](#) or b) a regular finite *that*-clause that is anchored with respect to the utterance context but in which a modal verb introduces an alternative world variable with respect to which the embedded main verb is evaluated, as is illustrated in (12) below.

- (12) a. ??*Er befahl uns, dass wir zurückkommen.*
 he ordered us that we back-come
 b. *Er befahl uns PRO zurückzukommen.*
 he ordered us back-to-come
 c. *Er befahl uns, dass wir zurückkommen sollen.*⁶
 he ordered us that we back-come should

In modern German the alternation between the indicative and the present subjunctive only signals a difference in the source of evidence on the basis of which a claim represented by an embedded clause is made, but not a difference in the world variable. While the subjunctive indicates that the content of the embedded clause is anchored to an individual that is not the speaker but the subject of the matrix predicate, the indicative allows a so-called double-anchoring: to the matrix subject but also the speaker of the utterance context. If the clause is to be unambiguously anchored to the speaker, a V2-clause has to be used.

For instance, in (13b) the speaker reports a claim made by *Hans* which is not endorsed by the speaker as well, while (13a) is ambiguous in this respect. The meaning of the indicative can be disambiguated by applying V2, as in (14b) and (15b): in this case the embedded clause is anchored with respect to the speaker of the utterance context and henceforth is interpreted as being asserted by the speaker (cf. [Gärtner 2001, 2002](#), [Catasso & Hinterhölzl 2016](#), [Hinterhölzl 2020](#)).

6 An anonymous reviewer asks about the nature of the V2 alternatives of (12c), as given in (i). (ia) and (ib) are acceptable when interpreted as quoting the words of the order: *Er befahl: Ihr sollt bald zurückkommen* (He ordered: you should come back soon).

- (i) a. *Er befahl uns, wir sollen bald zurückkommen.*
 b. *Er befahl, wir sollen bald zurückkommen.*
 He ordered (us) we should return soon

In the right mood, in the right place

- (13) a. *Hans sagte, dass er Glück gehabt **hat*** MG
John said that he luck had had.IND
b. *Hans sagte, dass er Glück gehabt **habe***
John said that he luck had had.SUB
- (14) a. *Ich habe nichts gekocht, weil ich ja noch*
I have nothing cooked because I well still
*was gehabt **habe** vom Sonntagsbraten.* MG
something had have of-the roast
b. *Ich habe nichts gekocht, weil ich **hab** ja noch*
I have nothing cooked, because I have well still
was gehabt vom Sonntagsbraten. MG
something had of-the roast
- (15) a. *Das Blatt hat eine Seite, die ganz schwarz **ist**.* MG
b. *Das Blatt hat eine Seite, die **ist** ganz schwarz*
This sheet has a side that (is) completely black (is)
(based on [Gärtner 2001](#): 113)

That embedded clauses marked with the indicative mood exhibit this type of double-anchoring is also evident from double-access readings which are required by the indicative but not allowed by the subjunctive (cf. [Giorgi 2009](#)). In (16a), the visiting event must be situated following both the matrix event and the speech event, excluding a temporal adverb like *yesterday* (assuming its attachment to the VP of the embedded sentence), while in (16b) the visiting event accompanied with a subjunctive-marked verb must only be situated in the future with respect to the matrix event, allowing for a temporal adverb like *yesterday*.

- (16) a. John said that Mary will visit Sue (*yesterday) ME
b. John said that Mary would visit Sue (yesterday)

These data indicate that the development of MAs is more complicated in the history of English than in the history of German. While English, like German, has replaced finite complement clauses in the subjunctive with infinitivals, it also has fixed word order both in main and embedded clauses, and possibly for this reason it has restored or preserved some of the major effects of MAs, as is evidenced in (17).

- (17) John ordered... / It is essential that she leave

A new strand of work starting with [Biberauer & Roberts \(2010\)](#) proposes that tense/mood/aspect distinctions rather than subject-verb agreement are correlated with the loss of verb movement in the history of English. [Haeberli & Ihsane \(2016\)](#) investigated verb movement in Middle English and Early Modern English in great detail and show that V-to-T-movement was lost in two steps. In the first step, between 1400 and 1600, V-to-T-movement was lost, evidenced mainly by the positioning of the verb with respect to sentence-medial adjuncts. In the second step, between 1500 and 1800, verb movement past negation was lost. The first step could be correlated with the loss of mood distinctions, given that the synthetic tense system did not change from OE to Modern English, and the second step could be correlated with the loss of aspectual distinctions, assuming that movement past negation involves movement to an aspectual head below T (cf. the argumentation in [Cowper & Hall 2012](#)).

In this respect, it is important to point out, also in view of the data in (17), that [Roberts \(1985: 40–42\)](#) argues that the modern subjunctive construction should be understood in terms of an unpronounced modal element with the lexical verb representing simply the infinitive form. If [Roberts \(1985\)](#) is correct, then the English development would not differ categorically from the German development. But the question remains why it should be the case that a finite verb can be deleted/remains phonologically null exactly in this context and in no other context in modern English. An in-depth study of this development is in order, but far beyond the scope of this paper, which has the much more modest goal of opening up these and related questions to the scientific community.

Returning to the case of German, the only instance in which a (past) subjunctive can be said to introduce an alternative world is its counterfactual use, where the past subjunctive is licensed in a matrix clause and in a clause introduced by the conditional conjunction *wenn* ‘if’ in modern German, as is illustrated in (18). We will leave the exact analysis of cases like (18) for future research, but following standard analyses of the semantics of conditionals, we assume that the *if*-clause introduces a set of worlds/situations with respect to which the content of the matrix clause is evaluated (cf. [Ebert, Ebert & Hinterwimmer 2014](#)).

- (18) *Wenn du gekommen wärest, hätte ich noch ein Bier*
 if you come were.SUB, had.SUB I another beer
 aufgemacht.
 open-made

6 CONCLUSION

We have presented a pilot study on the interactions between indicative/subjunctive MAs and verb placement in Germanic; in our study, we investigated this interaction in an exemplary fashion by looking at the verb position in OE and OHG subordinate clauses.

The results of the corpus study indicate a different situation for OE and OHG, suggesting that they occupy different stages in a more general diachronic scenario like the one sketched by Gärtner & Eythórsson (2020). The results of this pilot study need further investigations that consolidate them and provide further detail on, and explanations for, the differences found in this study.

In particular, as far as the OHG and OE stage is concerned, the role of IS has to be investigated in more detail in order to determine whether and how definiteness and givenness interact with verb placement and mood.

As far as the historical scenario is concerned, the specific diachronic changes of English and German need to be analyzed in further detail. In the course of time, mood marking on simple (finite) verbs was replaced with complex forms due to the rise of modal verbs and auxiliaries. In particular, the change in the mood system, or the lack of it, has to be correlated with the rise of non-finite complementation (Los 2005, Biberauer & Roberts 2008) and the loss of inflection (van Gelderen 1997) in both languages. Moreover, the different dialects of Middle English may display diachronic differences with respect to verb position (cf. Kroch & Taylor 2000) and the roles of sentence-medial adverbs and of negation for the analysis of verb positions in the history of English need to be investigated in correlation with data on the loss of mood morphology. And, last but not least, it must be acknowledged and factored into the historical scenario that verb positioning in English went through a different development with respect to all the other Germanic languages (cf. Kiparsky 1996).

Although the interplay of these and other factors is admittedly fairly complex, we believe that the current contribution provides a first step towards disentangling these matters with the help of quantitative data.

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APPENDIX

Logistic regression models and sample model outputs for the OE data: we show just one run of the 10 iterated re-runs on the re-sampled data:

Complement clauses:

```
Call:
glm(formula = pos.c ~ Cat, family = binomial(link = "logit"),
data = d.that)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-1.0439  -0.8970   0.1440   0.4966   1.4866

Coefficients:
              Estimate Std. Error z value Pr(>|z|)
(Intercept)  -0.70275    0.03925  -17.906 < 0.0000000000000002 ***
Catindicative  0.38027    0.05422    7.013  0.000000000000233 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 2407.9  on 5862  degrees of freedom
Residual deviance: 2358.4  on 5861  degrees of freedom
(1 observation deleted due to missingness)
AIC: 7104.5

Number of Fisher Scoring iterations: 3
```

Adverbial clauses:

```
Call:
glm(formula = pos.c ~ Cat, family = binomial(link = "logit"),
data = d.adv)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-0.86736  -0.72561   0.04251   0.38705   1.71077

Coefficients:
              Estimate Std. Error z value Pr(>|z|)
(Intercept)  -0.78379    0.03525  -22.237 < 0.0000000000000002 ***
```

```
Catsubjunctive -0.41632    0.05240    -7.944    0.000000000000000195 ***
---

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 3550.8  on 7477  degrees of freedom
Residual deviance: 3487.1  on 7476  degrees of freedom
(2 observations deleted due to missingness)
AIC: 7035.2

Number of Fisher Scoring iterations: 4
```

Relative clauses:

```
Call:
glm(formula = pos.c ~ Cat, family = binomial(link = "logit"),
    data = d.rc)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-0.7834  -0.7834  -0.6930   0.5015   1.7575

Coefficients:
              Estimate Std. Error z value Pr(>|z|)
(Intercept)  -1.02406   0.08038  -12.740 <0.0000000000000002 ***
Catsubjunctive -0.28019   0.11840   -2.366    0.018 *
---

Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 1211.9  on 1583  degrees of freedom
Residual deviance: 1206.3  on 1582  degrees of freedom
(18 observations deleted due to missingness)
AIC: 1470.3

Number of Fisher Scoring iterations: 3
```

In the right mood, in the right place

TOTAL (independent of Clause Type):

```
Call:
glm(formula = pos.c ~ Cat, family = binomial(link = "logit"),
data = d.all)

Deviance Residuals:
Min       1Q   Median       3Q      Max
-0.92836  -0.79122  -0.03527   0.49057   1.62107

Coefficients:
              Estimate Std. Error z value Pr(>|z|)
(Intercept)  -0.61863    0.02426  -25.50  <0.0000000000000002 ***
Catsubjunctive -0.38229    0.03565  -10.72  <0.0000000000000002 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 7374.3  on 14924  degrees of freedom
Residual deviance: 7258.5  on 14923  degrees of freedom
(21 observations deleted due to missingness)
AIC: 15874

Number of Fisher Scoring iterations: 3
```

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