

Focus and verb order in Early New High German: Historical and contemporary evidence

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1. Introduction*

A well-known feature of Modern Standard German is the position of the verbs in subordinate clauses. Unlike in main clauses, where the finite verb occupies the second position of the clause, all verbs are clustered at the end of subordinate clauses with complementizers, and the order within the verbal complex is fixed. With two verbs, the only possible order is 2-1, i.e. the non-finite V followed by the finite V (1). With three verbs, the order is construction specific, with many constructions requiring the 3-2-1 order (2), some requiring the 1-3-2 order (3), and one syntagm, the future auxiliary *werden* plus a modal verb and infinitive, allowing both orders (4).

- (1) a. ... *dass Klaus heute das Buch lesen will.*
that K. today the book read₂ wants₁
'... that Klaus wants to read the book today.'
b. ... *dass Klaus gestern das Buch gelesen hat.*
that K. yesterday the book read-PPP₂ has₁
'... that Klaus read the book yesterday.'
- (2) ... *weil es gekauft werden muss.*
because it bought₃ AUX₂ must₁
'... because it must be bought.'
- (3) ... *weil er es hat kaufen müssen.*
because he it has₁ buy₃ must₂
'... because he had to buy it.'
- (4) a. ... *weil er es kaufen können wird.*
because he it buy₃ can₂ will₁
'... because he will be able to buy it.'
b. ... *weil er es wird₁ kaufen₃ können₂.*

However, earlier stages of German, as well as many contemporary dialects, show considerable variation in word order within the verbal complex. This paper deals with such variation in Early New High German (ENHG), arguing that the choice of orders within the verbal complex is sensitive to focus. Of course, determining information structure in an extinct language is problematic, since many cases of focus will be overlooked without intonational clues. Therefore, this paper uses different kinds of evidence to investigate the extent of the effect of focus on ENHG word order.

The next section presents data from a corpus study of ENHG, presenting direct and indirect evidence for focus effects. Section 3 provides supporting evidence from interviews with speakers of dialects that show variation similar to that in ENHG. Section 4 presents the results of a Magnitude Estimation study on the effect of information structure on the *werden*-modal-infinitive syntagm in Modern Standard German. The conclusion will be that the limited focus effects in contemporary varieties of German represent a residue of the more robust ENHG system.

2. Evidence from Early New High German

2.1. ENHG word order

ENHG, the stage of German from 1350 to 1650, is characterized by a great deal of phonological, morphological, and syntactic variation. This is also true for subordinate-clause word order, where the position of the verbs is quite free compared to Modern Standard German. In addition to the “modern”, 2-1 order, the 1-2 order is possible (5). Clusters of three verbs show even more variation: in addition to the 3-2-1 and 1-3-2 orders possible in Modern Standard German, ENHG allows 1-2-3 and 3-1-2 (6). Finally, the verbs are not necessarily clause-final: some constituent may appear extraposed to the right of the verbs, independently of the order within the verbal complex (7).¹

- (5) a. *das er in kainer sund verczweiffeln sol*
 that he in no sin despair₂ shall₁
 ‘that he should not despair in any sin’ (PM 161)
- b. *das der mensch alle sein lebttag nicht anders scholt thun*
 that the person all his life-days nothing else should₁ do₂
 ‘that man should do nothing else all the days of his life’ (PM 206)

- (6) a. *das so darvorgesetzt ist in fragweis verstanden werden soll*
 that REL before.set is in question understood₃ AUX₂ should₁
 ‘that what is set before should be understood as a question’ (Eu. 14)
- b. *als er des tages scholt begraben werden*
 as he the day should₁ buried₃ become₂
 ‘when he should be buried on that day’ (PM 212)
- c. *so er dan den menschen nicht hat mugen vberwinden*
 when he then the person not has₁ can₂ overcome₃
 ‘when he has not been able to overcome the person’ (PM 158)
- d. *dy er ... getan solt haben*
 REL he done₃ should₁ have₂
 ‘that he should have done ...’ (PM 159)
- (7) a. *Wye man fragen sol dy krancken*
 how one ask₂ shall₁ the sick
 ‘how one should ask the sick’ (PM 166)
- b. *daz ich damit sol pussen mein sund*
 that I therewith shall₁ atone₂ my sin
 ‘that I should atone for my sin with that’ (PM 163)

Several factors that favor the 1-2 order in ENHG have been identified in previous scholarship (e.g. Ebert 1981), including syntagm type, the presence of a stressed separable prefix, the phonological weight of the word preceding the verbs, and sociolinguistic factors. However, this paper concentrates on the effect of object focus on verb order, a new finding based on the following corpus study.

2.2. The corpus and methods

The ENHG study was conducted on a corpus of thirty texts from the *Bonner Frühneuhochdeutsch-Korpus*, representing ten dialects from the period 1350–1600. From this corpus, I created a database of 2,921 unambiguously subordinate clauses, each of which contains a finite verb and at least one dependent, non-finite verb. There are 2,752 tokens with clusters of two verbs and 169 with clusters of three or more verbs. As the *Bonner Frühneuhochdeutsch-Korpus* is not tagged for word order, all tokens in the database were selected and tagged by hand.

The database was analyzed using the statistics package *GoldVarb 2001* (Robinson et al. 2001). This program was developed for sociolinguistic

studies and allows the researcher to determine the extent of the effect of several independent variables (linguistic and sociolinguistic factors) on a dependent variable (in this study, verb order). The key statistical output of *GoldVerb 2001* that will be utilized in this study is the factor weight, which indicates the strength of the effect of a given factor on the dependent variable. The factor weight is expressed as a probability between 0 and 1; the further it is from 0.5, which indicates no effect, the greater that factor's effect on the dependent variable.

In addition to several factors that are not discussed in this paper (see Sapp 2006), clauses in the database were tagged for the following factor groups: focus, scrambling, and extraposition. Under focus, clauses were tagged "new" if an argument was new within the section of the text or new within one or two pages if the text was not divided into sections. Clauses were tagged "contrastive" if an argument could be interpreted as contrastive. If there were no new or contrastive arguments, the clause was tagged as "old".² In the factor group scrambling, clauses were marked "unscrambled" if an object appeared to the right of a negator or adverbial (i.e. immediately left of the verbs) and "scrambled" if an object was separated from the verbal complex by some constituent. Since pronouns obligatorily scramble, clauses with only a scrambled pronoun were not tagged as scrambled. Finally, under "extraposition", clauses were tagged as to whether they contained an extraposed argument, adjunct, or no extraposed constituent.

2.3. The effect of focus

First, let us examine the direct evidence for the effect of object focus on verb order in clusters of two verbs. In the corpus, the 2-1 order occurs 75% of the time, and the 1-2 order 24% of the time. Therefore, if the rate of the 1-2 order is significantly higher than 24% in a given context, that context favors 1-2.

As shown in Table 1, under contrastive focus, the rate of the 1-2 order is higher than 50%, well above the overall rate of 1-2. Thus contrastive focus has a strong favoring effect on the 1-2 order. With an object that represents new information, the 1-2 order occurs 31% of the time, which is also above the expected rate of 24%. The effect of new information focus is not as strong as that of contrastive focus, but is probably significant, as the factor weight is $< .04$. Finally, with neither contrastive nor new information focus on an argument, the 1-2 order is somewhat disfavored. The effect of this factor group on verb order is statistically significant ($p < 0.001$).³

Table 1. The effect of object focus on the 1-2 order⁴

Focus	2-1	1-2	Factor weight
Contrastive	15 (46%)	17 (53%)	0.263
New information	816 (68%)	369 (31%)	0.397
Old information	1237 (81%)	288 (18%)	0.586
Total	2068 (75%)	674 (24%)	

Thus there is direct evidence for the favoring effect of object focus on the 1-2 word order. However, I may have been influenced by the word order to incorrectly interpret some constituents as focused. Moreover, I have likely overlooked some instances of focus, lacking the intonation cues that accompany focus in a spoken language. Therefore, let us examine two additional factors as indirect evidence for the effect of focus: scrambling and extraposition.

There is a well-known correlation between focus and scrambling in German. An object is typically located adjacent to the non-finite verb when focused (*in situ* in the OV approach to German) but “scrambles” to the left when not focused (see e.g. Haider & Rosengren 2003). Thus if a focused object favors the 1-2 order in ENHG, we should expect a higher rate of 1-2 when the clause contains a non-scrambled object. As Table 2 shows, that is precisely what we find: with a non-scrambled object, the rate of 1-2 is 38%, well above the expected 24% and probably significantly so (factor weight < .04). On the other hand, in clauses with a scrambled argument, the rate of 1-2 is close to expected. This factor group has a statistically significant effect on verb order ($p < 0.015$).

Table 2. The effect of scrambling on the 1-2 order

Position of object	2-1	1-2	Factor weight
Not scrambled	45 (61%)	28 (38%)	0.371
Scrambled	115 (71%)	46 (28%)	0.568
Ambiguous	1908 (76%)	600 (23%)	0.499
Total	2068 (75%)	674 (24%)	

The second piece of indirect evidence comes from extraposition. Bies (1996) demonstrates that extraposed arguments tend to be either heavy or focused. Therefore, a higher frequency of extraposition with the 1-2 order would support the finding that focus favors the 1-2 order. As shown in Table

3, argument extraposition correlates to verb order: if an NP or argument PP is extraposed, the 1-2 order occurs significantly more often than expected at 36%. Note that extraposed adjuncts do not favor the 1-2 order, which can be taken as evidence that the effect of argument extraposition on verb order is due to focus, rather than extraposition in general. The effect of this factor group on word order is statistically significant ($p < 0.001$).

Table 3. The effect of extraposition on the 1-2 order

Extrapolated constituent	2-1	1-2	Factor weight
Extrapolated argument	163 (63%)	93 (36%)	0.359
Extrapolated adjunct PP	153 (72%)	58 (27%)	0.525
Nothing extrapolated	1751 (77%)	523 (22%)	0.502
Total	2067 (75%)	674 (24%)	

Finally, let us examine the effect of focus on the order within clusters of three verbs. Just as the lack of focus on an object favors the 2-1 order, it also favors the 3-2-1 order at 24%, which is higher than the expected rate of 3-2-1 (17%). New information and contrastive focus, on the other hand, slightly (but not significantly) favor each of the three other orders. This effect becomes stronger when the three orders are taken together: with object focus, the 1-3-2, 1-2-3, and 3-1-2 orders occur 87% of the time, which is probably significantly higher than the expected 83% (factor weight $< .04$). This analysis is statistically significant ($p < 0.041$). Because of the small number of tokens, it was not possible to support these findings with evidence from scrambling and extraposition.

Table 4. The effect of object focus on three-verb clusters

Focus	3-2-1	1-3-2/1-2-3/3-1-2	Factor weight
New info. / contrastive	11 (12%)	80 (87%)	0.387
Old information	19 (24%)	59 (76%)	0.631
Total	30 (17%)	139 (83%)	

2.4. Discussion

In this section, we have seen that new information and contrastive focus have a favoring effect in ENHG on the 1-2 order as well as on several or-

ders in three-verb clusters. The direct evidence for this effect has been supported by indirect evidence based on two focus-related phenomena: scrambling and extraposition. However, one important test is not available in a historical language: testing whether a given sentence is possible under more than one focus context. Therefore, in the next two sections, we will see whether variable word order in contemporary varieties of German is sensitive to object focus, as appears to be the case in ENHG.

3. Supporting evidence: Swabian and Austrian German

3.1. Design

Since Modern Standard German allows only the 2-1 order, we must examine dialectal evidence in order to determine the effect of focus on two-verb clusters in contemporary German. This section reports on interviews conducted with speakers of two dialects of German: Swabian and Austrian German.⁵ These dialects allow both the 2-1 and 1-2 orders, although most speakers seem to prefer the 2-1 order, perhaps under the influence of the standard language.

The same method was used for gathering judgments in both dialects. For each dialect, I asked the first subject to tell me the dialect equivalent of some Standard German words. These dialect words were entered into a computer, which was used to generate sentences in that dialect. From then on, the first subject saw only these dialect sentences on the computer screen. Subsequent subjects were shown a print out of the first subject's sentences and were allowed to write down phonological adjustments if necessary. This process was intended to minimize the effect of the standard language, by limiting the subjects' exposure to the Standard German equivalents of the sentences.

Each subject was asked to perform two tasks. First, he or she was shown a list of sentences and asked to judge their grammaticality, giving each sentence a score from 1 to 5. These sentences were the dialect translations of the Standard German sentences in (8), with each sentence appearing in fourteen different word orders.

- (8) a. *Ich glaube, dass Klaus heute das Buch lesen will.*
 I think that Klaus today the book read-INF₂ wants₁
 'I think that Klaus wants to read the book today.'

- b. *Ich glaube, dass Klaus gestern das Buch gelesen hat.*
 I think that Klaus yesterday the book read-PPP₂ has₁
 'I think that Klaus read the book yesterday.'

The word-order variations involved the two relative verb orders (2-1 and 1-2) with different placements of the adverb and object (scrambling, extraposition, and within the verb cluster). The six orders relevant to this paper will be illustrated in the next section. (For a complete discussion, see Sapp 2006).

The second task involved judging dialect versions of the same basic sentences in (8), with the only variation being verb order (2-1 versus 1-2). However, in this task each pair of sentences was given a context question to elicit focus on the object, verb, VP, or the entire clause. Subjects were asked to judge the naturalness of the sentences as a response to the question and rate the sentences on the same 5-point scale. These sentences will also be illustrated in the next section.

3.2. Swabian

For Swabian, a dialect of southwestern Germany, I interviewed two speakers, one male and one female. Both were students at the University of Tübingen and were approximately twenty-five years old. The first speaker was from a large suburb of Stuttgart, and the second was from a village just outside of Tübingen. The dialects are similar enough that the second interviewee did not need to make any phonological adjustments to the sentences generated by the first subject.

3.2.1. Task one

The following are the Swabian sentences in the present perfect that were judged in the first task, along with their judgments.⁶ Sentences (9a) and (9b) represent the 2-1 order with unscrambled and scrambled objects, respectively. Sentences (9c) and (9d) are in the 1-2 order (unscrambled and scrambled). Finally, (9e) and (9f) involve the 2-1 and 1-2 orders with an extraposed object.

- (9) a. *I glaub, dass Glaus geschdern des Buach glése had.*
 I think that Klaus yesterday the book read-PPP₂ has₁
 'I think that Klaus read the book yesterday.'

- b. *I glaub, dass Glaus des Buach geschdern glese had.*
- c. [?]*I glaub, dass Glaus geschdern des Buach had glese.*
- d. [?]*I glaub, dass Glaus des Buach geschdern had glese.*
- e. ^{??}*I glaub, dass Glaus geschdern glese had des Buach.*
- f. ^{??*}*I glaub, dass Glaus geschdern had glese des Buach.*

The subjects judged these same orders in the modal-infinitive syntagm:

- (10) a. *I glaub, dass Glaus heud des Buach lese mecht.*
 I think that Klaus today the book read-INF₂ wants₁
 'I think that Klaus read the book yesterday.'
- b. *I glaub, dass Glaus des Buach heud lese mecht.*
 - c. ^{??}*I glaub, dass Glaus heud des Buach mecht lese.*
 - d. ^{??*}*I glaub, dass Glaus des Buach heud mecht lese.*
 - e. ^{??}*I glaub, dass Glaus heud lese mecht des Buach.*
 - f. ^{??}*I glaub, dass Glaus heud mecht lese des Buach.*

Several observations can be made from these judgments. First of all, they confirm Steil's (1989) claims that the 2-1 order is preferred over 1-2 in Swabian, and that 1-2 is more grammatical with the perfect (9c) than with modals (10c).

Secondly, as in ENHG, there is a correlation between scrambling and the 1-2 order. Whereas there is no difference in grammaticality between the variants of the 2-1 clauses with and without scrambling, both subjects rated the 1-2 order with modals higher when the object was not scrambled (10c) than when it was scrambled (10d).

Finally, the clauses with extraposition showed a great deal of variation between subjects, so it is unclear how the data should be interpreted. However, to the extent that the average of the two subjects' scores is meaningful, it appears that extraposition does not favor the 1-2 order, but actually seems to make the clause worse: (9f) is worse than (9c-d).

3.2.2. Task two

In the second task, subjects judged the 2-1 and 1-2 orders in different focus conditions, which were elicited using context questions. The focus conditions tested were object focus (11), focus on the main verb (12), focus on the VP, i.e. the object and verb (13), and focus on the entire subordinate clause (14). Note that what is being tested here is focus in the syntactic

sense, rather than phonological stress, as all of the sentences except (12) have the sentential accent on the direct object. All of these sentences have both a present perfect and a modal-infinitive variant; they are illustrated here using the present perfect sentences.⁷

- (11) *Was had Glaus geschdern glese?*
 what has Klaus yesterday read
 ‘What did Klaus read yesterday?’
 a. *I glaub, dass Glaus [F des BUACH] glese had.*
 I believe that Klaus the book read has
 ‘I think that Klaus read the book.’
 b. *?I glaub, dass Glaus [F des BUACH] had glese.*
- (12) *Was had Glaus geschdern mit dem Buach gmacht?*
 what has Klaus yesterday with the book done
 ‘What did Klaus do with the book yesterday?’
 a. *I glaub, dass Glaus des Buach [F GLESE] had.*
 b. *?I glaub, dass Glaus des Buach had [F GLESE].*
- (13) *Was had Glaus geschdern gmacht?*
 what has Klaus yesterday done
 ‘What did Klaus do yesterday?’
 a. *I glaub, dass Glaus [F des BUACH] glese had.*
 b. *?I glaub, dass Glaus [F des BUACH] had glese.*
- (14) *Was isch geschdern bassierd?*
 what is yesterday happened
 ‘What happened yesterday?’
 a. *I glaub, dass [F Glaus des BUACH] glese had.*
 b. *?I glaub, dass [F Glaus des BUACH] had glese.*

In this task there was considerable inter-speaker variation, and within-speaker variation between the two syntagms. The only consistent result was that for both speakers, the 1-2 variants were clearly less acceptable than the 2-1 variants in all contexts and with both syntagms. One of the subjects, however, did find a difference between the grammaticality of the 1-2 order when the object was focused (11b), which was judged with 4 out of 5 points, versus the 1-2 order in all of the other conditions, which all received a 3. I followed up on this by asking if (11b) really was better than the others, and the subject confirmed the original judgment.

3.3. Austrian German

This study was conducted with five speakers from different regions of Austria, two male and three female, and all students at the University of Vienna in their mid-twenties. The same method was used as in the Swabian study: the first interviewee, from Lower Austria, translated the lexical items from Standard German into dialect and then was asked to judge dialect sentences generated from those lexical items.⁸ The remaining subjects, from small towns in Styria, Tyrol, and Vorarlberg, were shown the sentences in the Lower Austrian translations and were permitted to make phonological adjustments in addition to judging the word order. Despite the strong phonological differences between the dialects, the judgments in these tasks were largely similar.

3.3.1. Task one

The judgments for the sentences in task one are presented below. Unlike the Swabian study, the Austrian judgments showed very little difference by syntagm, so I have averaged the scores for the perfect and modal-infinitive syntagms. The sentences are illustrated using the perfect syntagm and are given in the Lower Austrian form:

- (15) a. *I glaub, dass da Klaus gestan des Buach glesn hot.*
 I think that the Klaus yesterday the book read₂ has₁
 'I think that Klaus read the book yesterday.'
- b. *I glaub, dass da Klaus des Buach gestan glesn hot.*
 c. *?I glaub, dass da Klaus gestan des Buach hot glesn.*
 d. *?*I glaub, dass da Klaus des Buach gestan hot glesn.*
 e. *?*I glaub, dass da Klaus gestan glesn hot des Buach.*
 f. **I glaub, dass da Klaus gestan hot glesn des Buach.*

There are a number of interesting results from this study. First of all, as in Swabian, the standard-like 2-1 order (15a–b) is clearly more grammatical than the 1-2 (15c–d), contrary to previous work on Austrian word order (Patočka 1997).

Secondly, as in the Swabian study, although the 1-2 order is not fully grammatical, it is better when the object is unscrambled (15c) than when it is scrambled (15d). For some speakers, this distinction was as strong as 5/5 (fully grammatical) with an unscrambled object to 1/5 (completely ungrammatical) with scrambling.

Finally, unlike ENHG but as in Swabian, extraposition does not make the 1-2 order more acceptable, but rather makes the sentence even more ungrammatical (15f).

3.3.2. Task two

As in the Swabian study, the Austrian informants were given a second task, in which they judged the 2-1 and 1-2 verb orders under different focus conditions. In this task, none of the four subjects showed any difference in acceptance of the 1-2 order based on focus (elicited in this manner). Nevertheless, one interesting point did arise from this task.

After completing the survey, the speaker from Styria mentioned that the 1-2 order sounds better when the object is stressed:

- (15) c. *ʔI glaub, dass da Klaus gestan des Buach hot glesn.*
 c' *ʔI glaub, dass da Klaus gestan des BUACH hot glesn.*

The fact that the subject mentioned this but did not show any difference in task two between the different focus conditions could mean one of two things. One possibility is that new information focus alone is not enough to make the 1-2 order more acceptable, but that contrastive focus is necessary. The second possibility is that the background question did not clearly elicit the intended focus interpretation.

3.4. Discussion

There are two results of these studies that indicate that object focus continues to have an effect on word order. First of all, although for most subjects there was no clear pattern in the second task, one Swabian clearly indicated that the 1-2 order is better under object focus than other focus types, and one Austrian accepted 1-2 with a strongly stressed object. Secondly, results from the first task in both dialects show that the 1-2 order is more acceptable when the object is not scrambled. Since an object that fails to scramble is usually focused, this observation confirms the effect of object focus on the 1-2 order.

However, the 1-2 order is clearly marginal in these dialects. It appears that this word order is so marked that it is no longer an acceptable way to indicate object focus. Thus the correlation between object focus and the 1-2

order in these dialects today is merely a remnant of the situation in ENHG, when this effect was much more robust.

Note that these results can only be considered preliminary, since the studies did not follow the usual practices to ensure reliable results in experimental linguistics, such as filler sentences, lexical variation, randomized presentation, and tests for statistical significance. On the other hand, it is not clear how feasible it would be to use a controlled experiment to investigate dialect phenomena. One would need to find large numbers of speakers of the same (micro-)dialect and create sentences in that variety, and it is not clear how subjects would react to seeing their spoken dialect in printed form. Therefore, the next section reports on an experiment testing the effect of focus on verb order in Standard German.

4. Supporting evidence: Modern Standard German

Recall from section 1 above that there is only one construction in Modern Standard German that allows any variation within the verbal complex. When the future auxiliary *werden* governs two infinitives, both the 3-2-1 and 1-3-2 orders are possible, and the 3-1-2 order is possible in some varieties of the standard, especially in Austria and southern Germany:

- (16) a. *weil er es kaufen können wird*
 because he it buy₃ can₂ will₁
 ‘because he will be able to buy it’
 b. *weil er es wird₁ kaufen₃ können₂*
 c. *%weil er es kaufen₃ wird₁ können₂*

Schmid & Vogel (2004) find that the word orders in this construction are influenced by stress. This section presents a Magnitude Estimation study that tests whether focus, rather than stress, is the crucial factor for determining word order.

4.1. Design

In the Magnitude Estimation method of eliciting grammaticality judgments (Bard et al. 1996), subjects are presented with a number of sentences and asked to rate them relative to a reference sentence on a scale of the sub-

ject's own choosing. This method has a number of benefits. First of all, many sentences are tested, helping to abstract away from the possible effects of individual lexical items. Secondly, the study involves multiple subjects, abstracting away from the possibly idiosyncratic judgments of individuals. Thirdly, rather than eliciting absolute grammaticality judgments, the judgments are relative and often fine-grained.

In order to elicit different focus interpretations, a correction format was used. In the instructions, subjects were asked to imagine that they are speaking with a friend who always misunderstands everything, so that they have to constantly repeat themselves. Subjects were instructed to judge only the answer.

Five focus conditions were tested: subject focus (17a), object focus (17b), VP focus (17c), focus on the main verb (17d), and focus on the modal (17e).⁹

- (17) a. *Was? Maria wird einen Roman schreiben müssen?*

what M. will a novel write must
'What? Maria will have to write a novel?'

*Nein! Ich habe gesagt, dass [Foc Klaus] einen Roman schreiben
no I have said that K. a novel write
müssen wird.
must will*

'No! I said that Klaus will have to write a novel.'

- b. *Was? Klaus wird eine Geschichte schreiben müssen?*

what K. will a story write must
'What? Klaus will have to write a story?'

... dass Klaus [Foc einen Roman] schreiben müssen wird.

- c. *Was? Klaus wird eine Geschichte lesen müssen?*

what K. will a story read must
'What? Klaus will have to read a story?'

... dass Klaus [Foc einen Roman schreiben] müssen wird.

- d. *Was? Klaus wird einen Roman lesen müssen?*

what K. will a novel read must
'What? Klaus will have to read a novel?'

... dass Klaus einen Roman [Foc schreiben] müssen wird.

- e. *Was? Klaus wird einen Roman schreiben können?*

what K. will a novel write can
'What? Klaus will be able to write a novel?'

... dass Klaus einen Roman schreiben [Foc müssen] wird.

Each focus condition was tested twice for the three word orders that were expected to be fully to partially grammatical (3-2-1, 1-3-2, and 3-1-2) and just once for a word order expected to be ungrammatical (1-2-3). The result was thirty-five experimental sentences. Additionally, there were five filler sentences ranging from grammatical to ungrammatical.

The reference sentence also used the correction format:

(18) *Was? Richard tanzt gern Tango?*

what R. dances gladly tango
'What? Richard likes to dance Tango?'

Nein! Ich habe gesagt, dass Edith gern Walzer tanzt.

no I have said that E. gladly waltz dances
'No! I said, that Edith likes to dance waltz.'

Using the correction format for the reference and filler sentences was intended to result in better comparison with the experimental sentences. Note, however, that neither the fillers nor the reference sentence contained verb clusters and that the focus condition in the reference sentence (multiple focus on the subject and object) was not tested in the experiment. Thus despite the similar format, these sentences should not have any effect on the judgments of the word orders under consideration.

The experiment was conducted on paper. The first two pages consisted of the instructions and a practice activity, and the experiment itself occupied the remaining two pages. There were twenty different sets of lexical items, such that no subject saw any set of lexical items more than twice.¹⁰ Each subject saw a different version of the experiment, with the twenty combinations of focus and word order represented by different sets of lexical items in each version.

There were a total of twenty participants in the experiment, seventeen women and three men, with a mean age of 23.6. All were native speakers of Austrian German, and thirteen were from Vienna and its suburbs. Thirteen of the surveys were administered in an introductory course on German grammar at the University of Vienna. The seven remaining surveys were completed by acquaintances of the experimenter. All of the subjects were university-educated and thus proficient in Standard German, but none of the subjects had any coursework in syntax.

4.2. Results

Figure 1 illustrates the results for this experiment.¹¹ The word orders that should be grammatical (3-2-1 and 1-3-2) were judged to be grammatical: they score in about the same range as the grammatical fillers. The more marginal word order 3-1-2 scores below the two grammatical orders. As expected, the ungrammatical 1-2-3 order scored far below these orders, in the same range as the completely ungrammatical fillers (not shown in Figure 1).

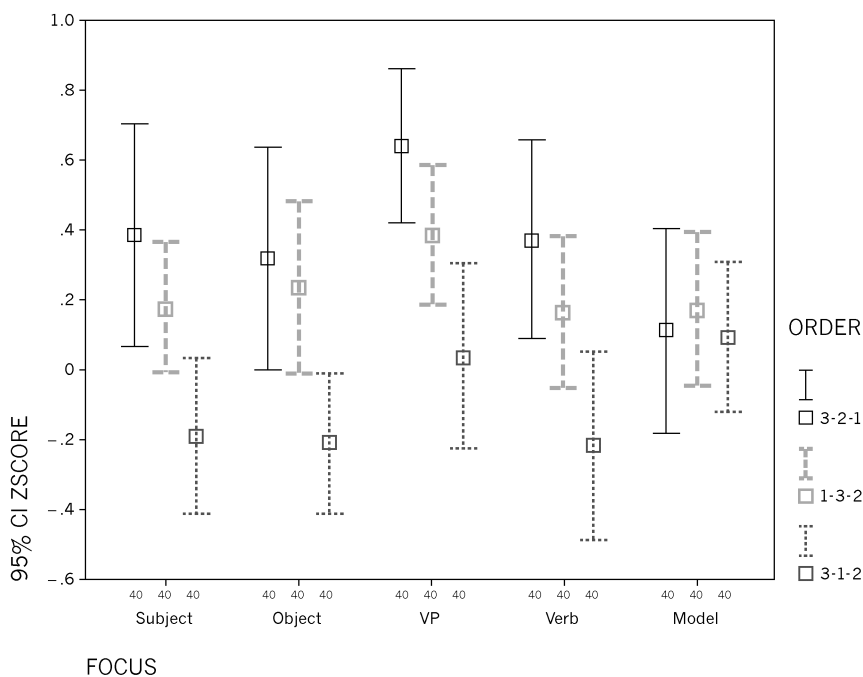


Figure 1. Acceptance of word order by focus context

Recall from section 2 that in ENHG, focus on the object has a favoring effect on the 1-2 order and probably on the 1-3-2 order as well. In this experiment, with focus on the VP, the 3-2-1 order is considerably better than the 1-3-2 order; however, under object focus, 3-2-1 and 1-3-2 are scored about equal. The improved acceptability of the 1-3-2 order appears to confirm the favoring effect of object focus on the 1-3-2 order in Modern Standard German as well as in ENHG.

4.3. Discussion

Schmid & Vogel (2004) find that stress has an effect on the order of the verbs in this construction. However, object stress is compatible with a number of focus interpretations, including object focus and VP focus. Thus if stress alone were the most important factor in determining word order in this construction, we would expect to find that object focus and VP focus show similar word-order preferences. However, Figure 1 shows that object focus and VP focus show differing preferences, especially with respect to the 1-3-2 order. Therefore, this experiment shows that the effect of focus on word order within the verb cluster is independent of the effect of stress.

To sum up this section, in the Modern Standard German *werden*-modal-infinitive construction, focus has an effect on word order within the verb cluster. Generally speaking, this supports my findings from ENHG. Unfortunately, however, the Modern German data cannot be directly compared to ENHG, as there is only one instance of this construction in my ENHG corpus.

5. Conclusions

This paper has demonstrated that focus on an object has a favoring effect on the 1-2 order and similar orders in Early New High German. Based on a corpus of ENHG subordinate clauses, direct evidence for this effect was found, as well as indirect evidence from the effects of scrambling and extraposition on verb order. This was supported by evidence from contemporary varieties of German. Some contemporary Swabian and Austrian speakers more readily accept the 1-2 order when preceded by a focused, stressed, or non-scrambled object. A Magnitude Estimation study of Modern Standard German found that focus has some effect on word order in the *werden*-modal-infinitive construction.

As a final note, this paper has shown the usefulness for historical linguistics of comparing different types of evidence. This is especially important when attempting to establish the effect of subtle phenomena such as focus.

Acknowledgements

Parts of this research were generously funded by Deutscher Akademischer Austauschdienst and the Fulbright Program. I would like to thank Marga Reis and the SFB 441 for their welcome during my year in Tübingen, to Sam Featherston for help with Magnitude Estimation, and to Richard Schrodtr and Wolfgang Dressler for putting me in contact with students in Vienna. Finally, thanks to the audiences of the workshop on verb clusters at the University of Tübingen and the 2006 conference on *Linguistic Evidence* for their helpful comments.

Notes

1. In addition, some constituent may come between the verbs in the 1-2 and similar orders (e.g. 1-X-2). See Sapp (2006) for discussion.
2. Although focus on a verb is of course possible, there were not enough clear cases of this to test for statistical significance. However, focus on a verb very likely has an effect on verb order in ENHG, as in contemporary German (Schmid & Vogel 2004).
3. It is well-known that information structure is related to definiteness: indefinite NPs tend to be new to the discourse. However, neither the definite vs. indefinite distinction ($p > 0.602$) nor the non-pronominal NP vs. pronoun distinction ($p > 0.101$) was statistically significant (see Sapp 2006 for details).
4. *GoldVerb 2001* does not round up percentages, so they often add up to 99% rather than 100%. I report the statistics here exactly as outputted by *GoldVerb*, except that I have changed $p = 0.000$ to $p < 0.001$.
5. I gathered the Swabian data while on a DAAD grant at the University of Tübingen and the Austrian data on a Fulbright grant at the University of Vienna. This research was conducted with the approval of the Indiana University Bloomington Human Subjects Committee (#03-8702).
6. The sentences seen by the subjects followed Standard German punctuation and capitalization rules. The superscripts were determined by averaging the subjects' numerical judgments and rounding up to the nearest whole number (5 indicated with no mark, 4 with [?], 3 with ^{??}, 2 with ^{?*}, and 1 with *).
7. Capitals letters mark the accented word (focus exponent), and brackets indicate the focus projection. The sentences seen by the subjects used conventional German punctuation and capitalization. The judgments here are for the present perfect sentences only, with the modal + infinitive sentences showing slightly different results. The judgments were calculated as in task one.
8. This speaker rejected all clauses with the 1-2 order; therefore, this speaker's judgments are not included in the discussion below.

9. The focus conditions are illustrated using only one word order and one set of lexical items. In the experiment, the sentences appeared in standard orthography and punctuation.
10. Subjects were ten male and ten female first names, 4–8 characters long and with a mean frequency of 2.9 million hits on www.google.de (German-language sites only). The objects were 4–11 characters long with a mean frequency of 468.6 in the *CELEX* corpus (Baayen et al. 1995), and the verbs were 5–10 characters with a mean frequency of 1081.88 in *CELEX*.
11. 95% confidence interval of the normalized z-scores of the grammaticality judgments calculated with the program SPSS. Outliers were removed using the box-plot test.

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