

# Auxiliary selection in the Early New High German perfect tenses\*

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## 1. Introduction

In Modern German as in several Western European languages, the perfect tenses are formed with one of two auxiliaries, *haben* 'have' or *sein* 'be.' Transitive verbs uniformly select *haben* as the perfect auxiliary (1), while intransitives may select either auxiliary, depending on meaning. According to the ergative or unaccusative hypothesis, as spelled out for German by Grewendorf, intransitive verbs that select *haben* involve true subjects (2), but those selecting *sein* are ergative verbs (3), in which the overt subject is a semantic or deep-structure direct object (1989: 11).<sup>1</sup>

- |     |   |                       |
|-----|---|-----------------------|
| (1) | Jupp hat den Ball getroffen.<br>J. has the ball kicked<br>'Joseph (has) kicked the ball.'                 | Grewendorf (1989: 9)  |
| (2) | Der Student hat gearbeitet.<br>the student has worked<br>'The student (has) worked.'                      | Grewendorf (1989: 21) |
| (3) | Der Student ist eingeschlafen.<br>the student is fallen-asleep<br>'The student has fallen / fell asleep.' | Grewendorf (1989: 21) |

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<sup>1</sup> As indicated by the glosses in (1)-(3), the German present perfect is equivalent to both the preterite and the present perfect in English. In the rest of the paper, I gloss it with the preterite for brevity's sake.

However, it is evident that the distinction between *haben*-intransitives and *sein*-intransitives is not merely a lexical feature of particular verbs. Grewendorf notes that imperfective intransitives take *haben*, while perfective or resultative intransitives take *sein* as an auxiliary. Paul makes a similar observation: ‘Wurde die Bewegung nach ihrem Verlaufe vorgestellt, so war *haben* am Platze; wurde das Eintreten oder der Abschluss der Bewegung vorgestellt, *sein*’ (1902: 182). One can see this in cases like (4), where a verb of motion may take either auxiliary, depending on whether the motion is directional.<sup>2</sup>

- (4) (a) Hans hat in seinem Zimmer getanzt.  
H. has in his-DAT room danced  
‘Hans danced in his room.’  
(b) Hans ist in sein Zimmer getanzt.  
H. is in his-ACC room danced  
‘Hans danced into his room.’ Grewendorf (1989: 10)

Where the unaccusative/ergative hypothesis sees different positions in underlying syntax for the subjects of *sein*- vs. *haben*-intransitives, other linguists take a semantic approach. Shannon (1989, 1995) maintains that the key concepts are the *Aktionsart* of the verb and the degree of transitivity of the sentence. For Shannon, intransitives follow either a *haben*-prototype, in which the verb is a state or activity and the subject is agentive, or a *sein*-prototype, in which the verb is mutative and the subject is low in agentivity (1989: 255). This can be seen in many pairs of similar verbs in which the activity takes *haben* while the perfective version takes *sein* (5).

- (5) (a) Das Haus hat stundenlang gebrannt.  
the house has hours-long burned  
‘The house burned for hours.’  
(b) Das Haus ist in einer Stunde abgebrannt.  
the house is in an hour down-burned  
‘The house burned down in an hour.’ Shannon (1989: 256)

Shannon notes that this distinction can also capture the difference between directional and non-directional verbs of motion like (4), in that (4a) focuses on the action itself, while (4b) highlights the change of position and thus the affectedness of the subject (1989: 257).

Another approach to this problem is inspired by the cross-linguistic differences between languages such as French, German, and Spanish. Where the unaccusative hypothesis tries to reduce the *haben/sein* distinction to syntax and Shannon attributes it to the interplay of several semantic properties, Sorace (2000) breaks intransitives up into smaller semantic categories, attempting to capture both cross-linguistic variation

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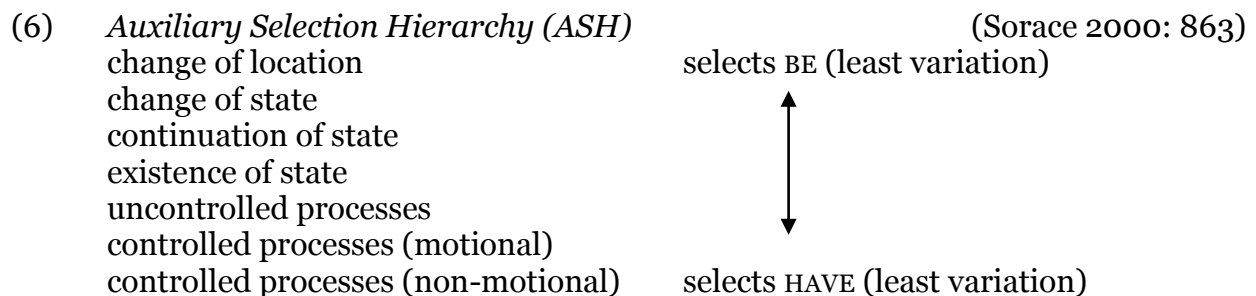
<sup>2</sup> Grewendorf (1989: 14) maintains that these two sentences differ in the underlying position of the subject, with *Hans* receiving a subject theta-role in (4a) but not in (4b).

and the ability of some verbs to select either auxiliary. Sorace proposes that these categories can be placed on an Auxiliary Selection Hierarchy (ASH), which will be described further in the next section. Sorace's approach will be adopted here, because the ASH offers more fine-grained descriptive distinctions between verbs and appears to apply both cross-linguistically and diachronically.

In this paper, I examine auxiliary selection in Early New High German (ENHG), the period of the language written between 1350 and 1650. This is accomplished by analyzing a database of past tense clauses from thirty texts of the *Bonner Frühneuhochdeutschkorpus*.<sup>3</sup> Of all the past tense clauses, over 6,000 are in the present perfect or pluperfect tense. By analyzing these ENHG clauses and comparing them to the distribution of *haben* and *sein* in Modern German, I will show that, although Modern German mostly preserves the earlier system, certain diachronic changes have occurred, and these changes largely behave as predicted by the ASH.

## 2. Auxiliary Selection Hierarchy

Sorace's ASH, illustrated in (6), is based on two aspectual poles, which show the least cross- and inner-linguistic variation. At one end are intransitives indicating telic change, which make up the 'core' BE verbs (Sorace 2000: 861). At the other end of the hierarchy are agentive processes, which make up the core HAVE verbs (2000: 862). In the middle of the hierarchy are intransitives which do not fit either pole, and it is these verbs that tend to show the most variation.<sup>4</sup>



<sup>3</sup> These thirty texts represent one text for each of three centuries and ten dialect areas. The database was compiled for another study (Sapp 2009) and also includes clauses in the preterite, which are irrelevant to the current study. Using the morphological tagging in the Bonn Corpus, a clause was determined to be perfect if it contained a PPP either preceded or immediately followed by *haben* or *sein*.

<sup>4</sup> This system looks similar to Shannon's (1989) notion of prototypical environments for *be* vs. *have* at the extremes, with some variation in the middle. However, where auxiliary selection in Shannon (1989) varies along two planes (*Aktionsart* and transitivity), the ASH collapses this into one plane, collapsing the activity-accomplishment-achievement distinction and expressing degrees of transitivity as e.g. controlled vs. uncontrolled processes.

The different classes of intransitives on the ASH are illustrated below using German examples and judgments from Keller & Sorace (2003). Example (7) shows a change-of-location verb *entkommen* ‘escape,’ and (8) contains the change-of-state verb *wachsen* ‘grow’ (intr.), both of which invariably select *sein*. In (9), we see that most continuation-of-state verbs prefer *haben* but may also allow *sein*. (The exception is *bleiben* ‘stay,’ which only allows *sein*.) Existence-of-state verbs also prefer *haben* (10), although those that indicate the maintenance of a physical position such as *sit* show some variation. (Again, there is one salient exception: the verb *sein*, which selects *sein* when forming the perfect.) Verbs indicating uncontrolled processes (which may involve motion), such as *tremble*, *stagger*, etc., tend to select *haben* (11). Motional, controlled processes include verbs which indicate non-directional movement and manner of motion, such as *swim* and *dance*, and according to Keller & Sorace these tend to select *sein* (12), although there is a great deal of variation. Finally, non-motional, controlled processes like *talk* or *work* strongly prefer *haben* (13).

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|------|--|--|
| (7)  | Es sind stundenlang Gefangene entkommen.<br>it are for–hours prisoners escaped<br>‘Prisoners escaped for hours.’                   | change of location<br><br>Keller & Sorace (2003: 65)                         |
| (8)  | Das Kind ist schnell gewachsen.<br>the child is quick grown<br>‘The child grew quickly.’   | change of state<br><br>Keller & Sorace (2003: 65)                            |
| (9)  | Der Wanderer hat / ?ist kurz verweilt.<br>the hiker has is briefly stayed.<br>‘The hiker stayed briefly.’                          | continuation of state<br><br>Keller & Sorace (2003: 67)                      |
| (10) | Die Betende hat / ?ist würdevoll gekniet.<br>the praying has is with–dignity kneeled<br>‘The praying person kneeled with dignity.’ | existence of state<br><br>Keller & Sorace (2003: 68)                         |
| (11) | Die Frau hat angstvoll gezittert.<br>the woman has fearfully shivered<br>‘The woman shivered with fear.’                           | uncontrolled process<br><br>Keller & Sorace (2003: 69)                       |
| (12) | Die Tänzerin ist/ ?hat langsam getanzt.<br>the dancer is has slowly danced<br>‘The dancer danced slowly.’                          | controlled process (motional)<br><br>Keller & Sorace (2003: 70) <sup>5</sup> |

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<sup>5</sup> This judgment is based on a psycholinguistic study by Keller & Sorace (2003). This contrasts explicitly with example (10a) above, taken from Grewendorf (1989). Helbig & Buscha state that these verbs take *haben* unless they are telic, but concede that *sein* is becoming more generalized (2001: 125).

- (13) Die Lehrerin hat dauernd geredet. controlled process (non-mot.)  
 the teacher has continuously talked  
 ‘The teacher talked continuously.’ Keller & Sorace (2003: 71)

The cross-linguistic variation that the ASH seeks to capture is illustrated in (14). In French, German, and Italian, verbs indicating a change of state or location select BE. Variability starts with continuation of state, with French uniformly selecting HAVE, German preferring HAVE, and Italian preferring BE. Processes of various kinds tend to select HAVE in all three languages, with the most variability found with motional, controlled processes. An additional point of cross-linguistic variation, not illustrated here, is that reflexive verbs select HAVE in German but BE in French and Italian.

(14) Cross-linguistic variation on the ASH	French	German	Italian
change of location	<b>BE</b>	<b>BE</b>	<b>BE</b>
change of state	<b>BE</b>	<b>BE</b>	<b>BE</b>
continuation of state	HAVE	HAVE (BE)	<b>BE</b> (HAVE)
existence of state	HAVE	HAVE (BE)	<b>BE</b> (HAVE)
uncontrolled processes	HAVE	HAVE	HAVE (BE)
controlled processes (motional)	HAVE (BE)	HAVE / BE	HAVE (BE)
controlled processes (non-motional)	HAVE	HAVE	HAVE (BE)

(Based on Sorace 2000: 863–878)

The ASH also has some explanatory power regarding diachronic developments. Although Modern Spanish and Catalan, like Modern English, use only HAVE as a perfect auxiliary, prior stages of these languages showed the HAVE/BE alternation. According to Mateu (2009), in Old Catalan and Old Spanish, verbs of existence switched from HAVE to BE earliest, and change-of-state/location verbs retained BE longest. That is, the loss of BE as a perfect auxiliary in these languages began in the center of the ASH and moved up the hierarchy over time.

A similar development may have occurred in English. According to McFadden & Alexiadou, *be* was used as a perfect auxiliary into the nineteenth century, most typically with *come* and *go*, with just a few liturgical relics like *Christ is risen* surviving to the present day (2006: 237). This makes sense in light of the ASH, which predicts that if a language shows the HAVE/BE alternation, it should select BE at least with the core change-of-location verbs.

Since the ASH can be a key to understanding diachronic developments in the selection of the perfect auxiliary, the next section will examine auxiliary use in my database of ENHG clauses in the perfect tenses. This was accomplished by tagging verbs in the database as transitive, intransitive, or reflexive: intransitive verbs were additionally tagged according to their place on the ASH.

### 3. Results

#### 3.1 Transitives

In my database, there are over 4,000 clauses with transitive verbs.<sup>6</sup> The majority of these, as expected, have the auxiliary *haben*. However, there are also many instances (over 1,500) where the participle of an unambiguously transitive verb is used with the auxiliary *sein*. These cases appear to fall into two categories: some are *sein*-passives rather than perfects (15), and others are not auxiliary-participle syntagms at all, but just happen to contain an adjectival participle and the verb *sein* (16).

(15) so ist mir auch von meinem herrn nit geboten  
so is me also by my lord not asked  
'So neither is it asked of me by my lord, ...' (Buch von Troja 13)

(16) Die eyn was va marmelsteyn die and' va gebacken steynen  
the one was of marble-stone the other of baked-PPP stones  
'The one was of marble and the other was of bricks.' (Koelhoff Chronik 10)

If all of the co-occurrences of a transitive participle with *sein* are explainable this way and therefore not in the perfect tenses, then ENHG transitive verbs exclusively select *haben* as the perfect auxiliary.

As in modern German but unlike French and Italian (Keller & Sorace 2003: 68), reflexive verbs in ENHG take *haben* as the perfect auxiliary, even when motional (17). Therefore, transitive verbs in ENHG behave just as expected from the modern language.

(17) Als es nu<sup>o</sup>n umb den ymbiss ward /hat man sich zu<sup>o</sup> tisch gesetzt ...  
when it now about the meal was has one REFL to table set  
'Now, when it was about mealtime, they sat down at the table ...' (Nachbarn 42)

#### 3.2 Core HAVE intransitives

As predicted by the ASH, intransitive verbs at the bottom of the hierarchy occur exclusively with *haben*. These are the core HAVE verbs, namely controlled and uncontrolled processes. There are four instances of uncontrolled processes, one of which has the verb *träumen* 'to dream' and the other three involving *regnen* 'rain'.<sup>7</sup>

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<sup>6</sup> Transitivity was determined not only by the presence of an object, but by the semantics of the verb. Thus semantically transitive verbs for which an overt object is optional, such as *eat*, *speak*, *think*, and *write*, were tagged as transitive regardless of the presence of an object. On the other hand, verbs like *boil* that can be either transitive (*she boiled the herbs*) or perfective (*the water boiled*), were examined carefully and tagged as either transitive or intransitive depending on the meaning within that particular clause.

<sup>7</sup> There is one exception, in which a weather verb has been metaphorically extended to become a verb of motion and is thus used with *sein*:

(i) da das Manna ... von oben herab geregnet ist (Denkwürdigkeiten 11r)

There are twelve instances of verbs representing controlled processes: five sentences with *arbeiten* ‘work’ as in (18) and seven with *sünd(ig)en* ‘sin’ (19).

(18) Ander leute haben gearbait  
other peoplehave worked  
‘Other people worked’ (Namen 12rA)

(19) Jch hab in Gott vnd wider dich gesu<sup>e</sup>ndet  
I have in God and against you sinned  
‘I have sinned against God and you.’ (Moscovia 1v)

All of these are all non-motional controlled processes, with no examples of motional controlled processes like *dance*, *swim*, *row*, etc. Recall from (14) that in Modern German, the motional controlled processes exhibit some variation in the selection of the auxiliary. Because there are no such examples in my ENHG data, we can only draw conclusions about uncontrolled processes and non-motional controlled processes, which appear to behave in ENHG just as in Modern German.

### 3.3 Core BE intransitives

At the other end of the ASH, the core BE intransitives, which indicate a change of state or of location, overwhelmingly select *sein* in ENHG. Of the 467 intransitive change-of-location verbs in my ENHG database, all but ten have the auxiliary *sein*. Verbs indicating a change of location include *fahren* ‘travel,’ *fliehen* ‘flee,’ *gehen* ‘go’ (20), *kommen* ‘come,’ *laufen* ‘run,’ *reisen* ‘travel,’ and *reiten* ‘ride’.

(20) die uss der archen mit uch gegangen synt  
REL out the ark with you gone are  
‘which went with you out of the ark’ (Rothe Chronik 24)

Of 141 intransitive change-of-state verbs, all but one have the auxiliary *sein*. This category of intransitive verbs includes *veralten* ‘age,’ *dörren* ‘dry,’ *entschlafen* ‘fall asleep’ (21), *genesen* ‘recover,’ and *sterben* ‘die’.

(21) das er am Tisch entschlaffen ist  
that he at–the table fell–asleep is  
‘so that he fell asleep at the table’ (Moscovia 2v)

In addition, there are 245 instances of the verb *werden*, which indicates a change of state in its lexical meaning ‘become’ (22) but may also be used as an auxiliary to form the passive (23). Both uses of *werden* exclusively occur with *sein* in the perfect tenses.

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because the manna from above down rained is  
‘because the manna rained down from above’

- (22) der von dem hailigē vater was gesunt worden  
REL from the holy father was healthy become-PPP  
'who had become healthy through the holy father' (Altväter 79)
- (23) czu der zeit der czwelifpoten ist mess gesungen warden  
at the time of-the twelve-apostles is mass sung AUX-PPP  
'At the time of Apostles, mass has been sung ...' (Rationale 9)

This leaves eleven exceptions, in which change-of-location or change-of-state verbs select *haben* rather than *sein*. There is only one such exception with a change of state verb, for which I have no good explanation:

- (24) das dieser Zweig ... gezweigelt vnd gegrundet habe  
that this branch branched and greened has  
'that this branch has grown and become green ...' (Passionale 48r)

The exceptions for the change-of-location verbs, on the other hand, are easier to explain. These fall into two groups: sentences in which the duration of time is specified (25) and verbs that indicate manner of motion (26) such as *treten* 'step'.

- (25) (a) wie wir also drey Stundt vngefehr hatten gefahren  
as we thus three hours circa had traveled  
'when we had traveled about three hours' (Amerika 23)
- (b) do derselue man alsus eyne wile vp der straisen gegangen hadde  
when the-same man so a while on the street gone had  
'when that man had thus walked on the street a while' (Buch Köln 426)
- (c) nach dem sye ein gantzest Jahr schier an diesem Wasser hatten gereyset  
after that they a whole year almost on this water had traveled  
'after they had traveled almost an entire year on this water' (Amerika 12)



- (26) (a) habe mithin an das ander gstad geylt  
 have therefore on the other shore hurried  
 ‘[I] hurried therefore to the other shore’ (Gespenster 40)
- (b) Robertus hatt auch mit sundrem Ernst haim geeylet.  
 R. has also with special earnestness home hurried  
 ‘Robertus hurried home with special earnestness.’ (Nachbarn 26)
- (c) Sy hedden by yn getreden vnd nyet by dat banner.  
 they had to him stepped and not to the banner  
 ‘They had stepped over to him and not to the banner.’ (Buch Köln 441)
- (d) daz ich von gotes leichnamen getreten han auf gotes mine  
 that I from God’s body stepped have on God’s love  
 ‘that I have gone from God’s body onto God’s love’ (Namen 8vA)
- (e) der erst mit ganzen willen vser der welte getretten het  
 REL first with whole will from the world stepped has  
 ‘who first departed from the world completely willingly’ (Mannen 6)
- (f) wann ... zu der stund hat Christus gestigen ans chrewcz  
 for at the time has Christ climbed on-the cross  
 ‘for ... at that time Christ rose onto the cross’ (Rationale 14–15)

However, these exceptions represent only tendencies rather than rules. Only three of the six instances of intransitive *treten* occur with *haben* (26c–e). The verb *steigen* ‘climb,’ although seemingly a manner-of-motion verb, appears with *haben* in only one of four cases (26f). Durative verbs of motion with a specified length of time may also appear with *sein*:

- (27) also bin ich sibenzehen iar irrende geloffen  
 thus am I seventeen years erring run  
 ‘thus I have run in error seventeen years’ (Mannen 28)

How can one account for the fact that these verbs, which supposedly form the core BE intransitives on the ASH, may occur with HAVE in these cases? For (25)–(26), we may assume that the telic interpretation of these verbs is secondary to the duration or manner of the action. In terms of the ASH, the actions are perceived as motional, controlled processes rather than changes of location. As noted by Shannon, the same kind of variation occurs in Modern German with these verbs, when the manner or duration of motion is emphasized (1990: 481):

- (28) (a) Er hat schlecht gefahren.  
 he has badly driven  
 ‘He drove badly.’
- (b) Sie hat fünf Kilometer gefahren.  
 she has five km driven  
 ‘She drove five kilometers.’ Shannon (1990: 481)

To sum up this section: as in Modern German, ENHG verbs indicating a change of location or state strongly favor *sein*, although even these core *sein* verbs may select *haben* when the semantics of the sentence point toward a controlled-process interpretation rather than a telic one.

### 3.4 *Statal intransitives*

The verbs in the middle of the ASH display the most cross- and intra-linguistic variation, selecting only HAVE in French, preferring HAVE in German but with variation, and preferring BE in Italian (14). Unsurprisingly, these verbs, representing the existence or continuation of a state, also show the most variation in ENHG.

With verbs that indicate the continuation of a state, the choice of auxiliary seems to be lexical in ENHG. As in Modern German, the main verbs *sein* ‘to be’ (29) and *bleiben* ‘to stay,’ although indicating the continuation of a state, exclusively select *sein* as the perfect auxiliary. However, the two other continuation-of-state verbs, *schlafen* ‘sleep’ (30) and *schweigen* ‘be silent,’ select only *haben*.

(29) do er czwelif jar alt gewesen ist  
when he twelve years old been is  
‘when he was twelve years old’ (Rationale 22)

(30) ich het all mein tag nie vor geslauffen  
I had all my days never before slept  
‘(it seemed) I had never slept before in all my life’ (Troja 47)

The greatest variation is found with verbs indicating the existence of a state, especially the verbs referring to physical position: *liegen* ‘to lie,’ *sitzen* ‘to sit,’ and *stehen* ‘to stand.’ (A fourth verb in this category, *hängen* ‘hang,’ selects only *sein* in the database.) In Middle High German (MHG), the choice of auxiliary indicates a perfective/imperfective distinction: with *haben*, the verbs mean ‘remain lying/sitting/standing,’ but with *sein* the verbs are perfective, meaning ‘lie down, sit down, stand up’ (Paul 1905: 172). According to Reichmann & Wegera (1993: 387), these verbs can still have the perfective meaning in ENHG. In my ENHG corpus there are no clear perfective cases, and yet these verbs strongly prefer *sein*. The frequent use of *sein* with these verbs can be explained as a relic of their earlier semantics: even though they are mostly imperfective by ENHG, they may still select the auxiliary that is associated with the older perfective meaning.

Because the continuation-of-state verbs show the most variation in the database, it is possible to use statistics to establish the factors with the strongest influence on auxiliary selection. The data were analyzed using the sociolinguistics program *GoldVarb X* (Sankoff et al. 2005). With the choice of *sein* vs. *haben* as the dependent variable, I tested the effect of several independent variables, including the lexical verb, the

presence of a time expression, the presence of an NP accusative of time, dialect, and century.<sup>8</sup> The results are presented in Table 1:

Factor group	Factor	<i>sein</i>	<i>haben</i>	Factor weight
lexeme $p = 0.001$	<i>liegen</i>	41 (95.3%)	2 (4.7%)	0.952
	<i>stehen</i>	14 (63.6%)	8 (36.4%)	0.082
	<i>sitzen</i>	10 (62.5%)	6 (37.5%)	0.009
durative (time NP/PP/Adv) $p < 0.001$	yes	9 (47.4%)	10 (52.6%)	0.322
	no or unclear	56 (90.3%)	6 (9.7%)	0.557
NP accusative of time $p < 0.001$	yes	2 (20.0%)	8 (80.0%)	0.089
	no	63 (88.7%)	8 (11.3%)	0.581
dialect $p < 0.001$	Middle Germ.	13 (46.4%)	5 (53.6%)	0.010
	Upper Germ.	52 (98.1%)	1 (1.9%)	0.917
century $p = 0.610$	14 <sup>th</sup> cent.	15 (75.0%)	5 (25.0%)	0.419
	15 <sup>th</sup> cent.	21 (77.8%)	6 (22.2%)	0.457
	16 <sup>th</sup> cent.	29 (85.3%)	5 (14.7%)	0.582
Total		65 (80.2%)	16 (19.8%)	

Table 1: *GoldVarb* analysis of auxiliary choice with ENHG continuation-of-state verbs

The first factor, lexeme, shows highly significant differences in auxiliary choice, with the verb *liegen* strongly preferring *sein* (95%). The distribution is more even for *stehen* and *sitzen*, but still these verbs occur most frequently with *sein*. The second factor group is also very significant: when any expression of time is present, indicating durative semantics, *haben* is favored at about 53%, much higher than the total frequency of *haben* (19.8%) in the database. This semantic difference is clearest with the verb *stehen*: in nine out of the ten instances in which this verb selects *haben*, it refers not to bodily position, but instead means ‘exist,’ as in (31). If the time expression is an accusative NP, as in (31), the favoring effect on *haben* is especially strong (80%). Perhaps the strong preference for *haben* when a time NP is present is that these accusative NPs are reanalyzed as objects, thus the auxiliary that is typical of transitive verbs is selected.

- (31) Do die werlet gestanden hatte fünfzen jar  
 when the world stood had fifteen years  
 ‘when the word had existed fifteen years’ (Rothe Chronik 17)

<sup>8</sup> Other factors were tested but found insignificant: mood, person, number, and tense (present perfect vs. pluperfect), as well as the genre of the text and the gender and social class of the author. Note that in a *GoldVarb* analysis, the  $p$  value indicates statistical significance of the factor group (e.g. lexeme) on the dependent variable. The strength of the effect of each factor on the dependent variable is indicated by the factor weight. A factor weight of 0.5 indicates no effect, and the further the weight is from 0.5 the stronger the effect.

In addition to semantic factors, there is regional variation in auxiliary choice with these verbs. Middle German texts slightly prefer *haben* (53.6%), but Upper German almost exclusively select *sein*. This roughly mirrors the contemporary distribution: these three verbs select mostly *haben* in northern Germany but *sein* in the southern German-speaking areas (Helbig & Buscha 2001: 126; Keller & Sorace 2003: 86). There is a diachronic development (although not statistically significant): the use of *sein* with these verbs becomes stronger over time, from 75% of the time in the fourteenth century to 85% in the sixteenth.

According to *GoldVarb*'s step-up/step-down function, which tests all possible combinations of factor groups to determine which combination results in the most statistically significant model, the most significant combination of factor groups is lexeme plus dialect. The inclusion of the semantic factors does not improve the model, which is surprising in light of the strong effect of a temporal NP. This is probably the result of an interaction between this factor and lexeme: of the ten instances containing an accusative of time, seven involve the verb *stehen*.

#### 4. Diachronic developments in German and other languages

Unlike some Western European languages, which have undergone changes in auxiliary selection, the German system has remained relatively stable. This section discusses the diachronic developments in German, contrasting them with the developments in other split-auxiliary languages.

The present study of perfect auxiliaries in Early New High German yields one difference between that stage of the language and Modern Standard German. As shown in (32), the three existence-of-state verbs *liegen*, *sitzen*, and *stehen* prefer *sein* in ENHG but *haben* in Modern German, although in both stages there is variation by semantic context and dialect. In section 3.4 above, I argue that the frequent use of *sein* with these verbs in ENHG is a relic of earlier usage: they had been change-of-state verbs in MHG but by ENHG shifted in meaning to existence-of-state verbs. Thus this change is not a movement of the HAVE/BE cut-off point up the hierarchy, but rather brings these three statal verbs in line with the other statal verbs in preferring HAVE. Crucially, there seems to be no other encroachment of *haben* into the core BE verbs.

(32)	Cross-linguistic variation on the ASH	ENHG	Mod. Germ.	Norwegian
	change of location	<b>BE</b>	<b>BE</b>	HAVE (BE)
	change of state	<b>BE</b>	<b>BE</b>	HAVE (BE)
	continuation of state	HAVE	HAVE (BE)	HAVE
	existence of state	<b>BE (HAVE)</b>	HAVE (BE)	HAVE
	uncontrolled processes	HAVE	HAVE	HAVE
	controlled processes (motional)	?	HAVE / BE	HAVE
	controlled processes (non-motional)	HAVE	HAVE	HAVE

Other languages, however, have shown much more dramatic change in auxiliary selection than German has. English, Catalan, Spanish, and Swedish have all gone from split-auxiliary languages to languages with a single perfect auxiliary (HAVE). In Norwegian, BE can still be used as a perfect auxiliary with change-of-location and change-of-state verbs and with the copula *være* ‘to be’ (Golden et al. 1998: 52), but even with these verbs HAVE seems to be the preferred auxiliary.<sup>9</sup> In terms of the Auxiliary Selection Hierarchy, the cut-off point between HAVE and BE in Norwegian is at the very top of the ASH, as illustrated in (32). According to Mateu (2009), change-of-state and change-of-location verbs were the last to switch from HAVE to BE in Catalan and Spanish; in other words, the cut-off between HAVE and BE gradually moved up the ASH. There was a similar development in English, with telic verbs continuing to select *be* as late as the 19<sup>th</sup> century (McFadden & Alexiadou 2006: 237). Why have these languages lost auxiliary BE while German has robustly maintained it?

One explanation could be that in English, Dutch, and Scandinavian, HAVE developed into an irrealis marker (McFadden & Alexiadou 2006; Shannon 1995). Shannon notes that this change begins in Middle Dutch (and is also attested in Middle Low German), where typical BE-verbs appear instead with HAVE in irrealis contexts (1995: 138). But this does not happen in High German; looking at the only verbs to show much variation in ENHG (*liegen*, *sitzen*, and *stehen*), the subjunctive does not favor *haben*. As shown in Table 2 below, perfects in the subjunctive have *sein* in all but one instance, much more frequently than expected from the total distribution of *haben* and *sein* with these verbs.

Factor group	Factor	<i>sein</i>	<i>haben</i>	Factor weight
mood <i>p</i> = 0.074	indicative	48 (77.4%)	14 (22.6%)	0.553
	subjunctive	17 (94.4%)	1 (5.6%)	0.324
Total		65 (81.2%)	15 (18.8%)	

Table 2: *GoldVarb* analysis of auxiliary choice in ENHG by mood

Shannon speculates that the clear morphological marking of the subjunctive mood in German made the use of *haben* as an irrealis marker unnecessary (1995: 153). One could argue that because *haben* is not preferred in irrealis contexts in German, it never gains a foothold with core BE verbs. Although such an argument works well for German, it fails for Dutch, which has the irrealis use of HAVE but maintains the split auxiliary system.

Perhaps a more plausible explanation for the maintenance of the split auxiliary system in Dutch, German, French, and Italian is the much higher frequency of the perfect tenses in those languages. In the spoken French, German, and Italian, the present perfect is used instead of the preterite. Dutch still maintains the preterite, but the present perfect is frequently used with preterite meaning (de Schutter 1994: 472).

<sup>9</sup> All of Golden et al.’s examples illustrating the present perfect use HAVE rather than BE (1998: 202-211).

On the other hand, the languages which have lost BE as an auxiliary tend to have robust use of the preterite.

## 5. Conclusions

This study has examined the choice of perfect auxiliary in Early New High German in light of Sorace's Auxiliary Selection Hierarchy, which has proven to be a useful tool for describing variation both cross-linguistically and within a given language. ENHG, like Modern German, shows little variation in core HAVE intransitives. As predicted by the ASH, verbs in the center of the hierarchy show the most variation, especially the stative verbs *liegen*, *sitzen*, and *stehen*, which vary dialectally in ENHG and also tend to prefer *haben* when the semantics are clearly durative. Some core BE intransitives may take *haben* in ENHG when the manner or duration of the movement is specified; in these cases, the verb in question is conceived of not as a change-of-location verb, but as a controlled process on the ASH. Overall, the split auxiliary system has remained quite stable from ENHG to the modern language, a fact which I attribute to the high frequency of the present perfect tense in spoken German.

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