

Perfects, resultatives and auxiliaries in Earlier English

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Abstract

This article presents an investigation of the peculiar distribution of the auxiliaries *have* and *be* in Earlier English and its consequences for theories of the perfect and auxiliary selection. We argue on the basis of a large-scale corpus study that the periphrastic construction with *be* was restricted to a stative resultative interpretation, whereas that with *have* developed a wider range of uses, crucially including the experiential perfect in addition to resultatives. Support comes from a comparison of the Earlier English patterns with related ones in Norwegian and German for which native-speaker judgments are available. On the basis of this insight we propose distinct formal analyses for the two constructions and show how they account for the attested patterns and changes in Middle and Early Modern English. Of particular theoretical relevance is the premise that what has been called the “perfect” is not a homogeneous, monolithic category, and that certain kinds of variation can only be understood by teasing apart the pieces that are involved. Earlier English and German auxiliaries have distinct distributions because their “perfects” have distinct syntactic and semantic make-ups.

Keywords: perfect, auxiliary selection, resultative, stative, experiential perfect, perfect of result, counterfactual, Old English, Middle English, Early Modern English, German, Norwegian

1 Introduction

It is well established that auxiliary selection in periphrastic perfect constructions is characterized by extensive and subtle cross-linguistic variation (see e.g. McFadden 2007 and the contributions in Aranovich 2007 for recent discussion).¹ We take it to be a reasonable methodological assumption that this variation is not arbitrary, but can be related to independently observable properties of the languages in question. However, while existing accounts of the phenomenon have made significant progress in mapping out the space in which such variation is possible, they have largely failed to provide explanations for why a given language occupies a particular location in that space and not another. In this article we propose one strategy for formulating such explanations.

As a starting point, consider that the temporal-aspectual construction within which auxiliary selection usually takes place – the perfect – is anything but a stable and consistent cross-linguistic category. A great volume of work has by now made it clear that there is considerable variation cross-linguistically in the properties of what are plausibly labeled ‘perfects’ (for extensive recent discussion, see the articles collected in Alexiadou, Rathert, and von Stechow 2003). We propose, partly inspired by Iatridou, Anagnostopoulou, and Pancheva (2003), that the perfect is not a simple category with a universal definition and consistent properties. Rather, it is a cover term for a series of complex constructions which have certain temporal-aspectual pieces in common, but which differ in the precise specification and combination of those pieces. Such an understanding of the perfect has clear consequences for our approach to auxiliary selection. If two languages differ in the abstract make-up of their perfects, we can expect that they might also differ in the identity and distribution of the auxiliaries they employ to realize

their perfects morpho-syntactically. This means that we can look for explanations for specific patterns of auxiliary selection in the independently observable properties of the perfect in a given language. That is, two languages will differ in their auxiliary selection at least in part because of differences in the make-up of their perfects.

In this article we will pursue this strategy in some detail by using it to explain the patterns of auxiliary selection attested in Earlier English and to understand why these differ from those in languages like German and Italian.² The choice between *have* and *be* in Earlier English is reminiscent of that in the familiar modern languages, but differs curiously in a series of restrictions placed on the use of *be*. We will argue that these restrictions can be explained once we arrive at the correct understanding of the Earlier English periphrasis with *be*. Crucially, it was syntactically and semantically distinct both from the Earlier English periphrasis with *have* and from the perfects of the other modern languages with either auxiliary.³ To the extent that this account is successful, it can provide a deeper kind of explanation for cross-linguistic variation than theories which must stipulate rules of selection. In the case of Earlier English, we will show that it also allows a more satisfactory account of diachronic developments than has been possible until now.

1.1 Historical background

Earlier English had periphrastic constructions consisting of the past participle of the main verb plus an auxiliary *have* or *be*, as in (1):⁴

- (1) a. I *am come* as 3e bade me ***be* periphrasis**

‘I have come as you asked me.’ (Mirk, 75.2015)

b. he *haþe foghten* wyth þe fend

***have* periphrasis**

‘He has fought with the enemy’ (Mirk, 116.3171)

Such constructions are like their formal analogues in languages like German, Dutch and Italian in the following ways: they are active in voice; they involve at least implicit reference to past or anterior eventualities; and the auxiliary is usually BE with intransitive verbs denoting change of location or change of state, while it is usually HAVE with other intransitives as well as all transitives.⁵ However, as is well known, English subsequently diverges from these other languages in losing the version with BE. In PDE, *have* is used to form perfects with all verbs:

(2) a. I *have*/**am* *come* as you asked me.

b. He *has* *fought* with the enemy.

Considerable research has been devoted to the history of the perfect in English (see e.g. Hoffmann 1934, Fridén 1948, Johannisson 1958, Mustanoja 1960, Traugott 1972, Zimmermann 1972, Kakietek 1976, Rydén and Brorström 1987, Kytö 1997, also Paul 1902 for related discussion of older German), resulting in the following more or less standard account. Both the periphrasis with *have* and that with *be* had their pre-OE origins in stative resultatives, the former with transitives like (3a), the latter with intransitives like (3b).⁶

(3) a. I have my bags packed.

i.e. ‘I have my bags in a state of having been packed.’

b. My bags are arrived.

i.e. ‘My bags are in the state of having arrived.’

In the course of OE and early ME, these resultative constructions grammaticalized to become perfects – constructions with anterior temporal-aspectual meanings not restricted to resultativity. In the process, *have* spread to unergative intransitives like *work* (which, being atelic, could not have formed a resultative), while *be* was established as the norm with unaccusatives. Later in ME, around 1350, *have* began to replace *be* with unaccusatives. This process was gradual, involving a period of variation lasting several hundred years, where the relevant verbs could appear with either *have* or *be*. The former appeared earliest and most consistently in modal and irrealis contexts, past and infinitive perfects and clauses with iterative or durative semantics. From this point onward, *be* lost more and more ground to *have*, finally disappearing by the end of the 19th century.

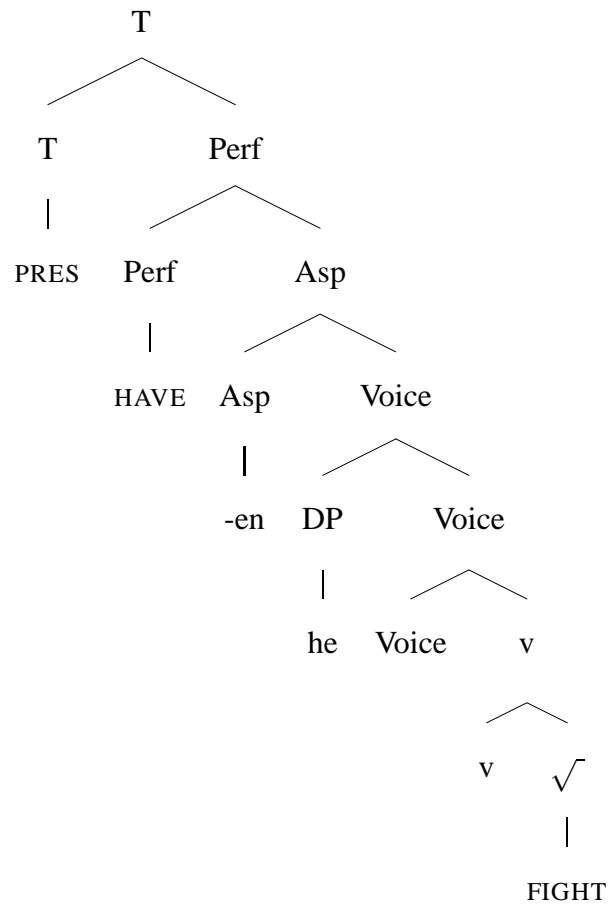
In our research, based on parsed electronic corpora covering the OE, ME and EModE periods, we have found this scenario to be broadly supported in its claims about the origin of the perfects and the frequencies of *have* and *be* relative to one another at any given time. However, it raises three questions which will lead us to fundamentally reconsider the syntactic systems that underlie those frequencies. First, why should the factors just mentioned (and not others) have favored the spread of *have*? A priori, they seem to be a mixed bag of modal, temporal and aspectual categories, and some of them are quite unlike those relevant for auxiliary selection in the familiar modern languages. Second, why should these factors have only become relevant around the year 1350? That is, if modals, pluperfects, infinitives, iteratives and duratives favored *have* after this time, why didn't they do so before? Third, why did the change subsequently take so long to go to completion? Was there really just a slow, homogeneous replacement of *be* by *have* over the course of 550 years, or were there identifiable stages in the process, smaller

changes adding up to the eventual loss of *be*? In this article we will present evidence for a revised view of the relevant synchronic systems and diachronic developments which will provide answers for these three questions about Earlier English and which will lead to a more nuanced understanding of auxiliary alternations and the perfect in general.

1.2 Our claims

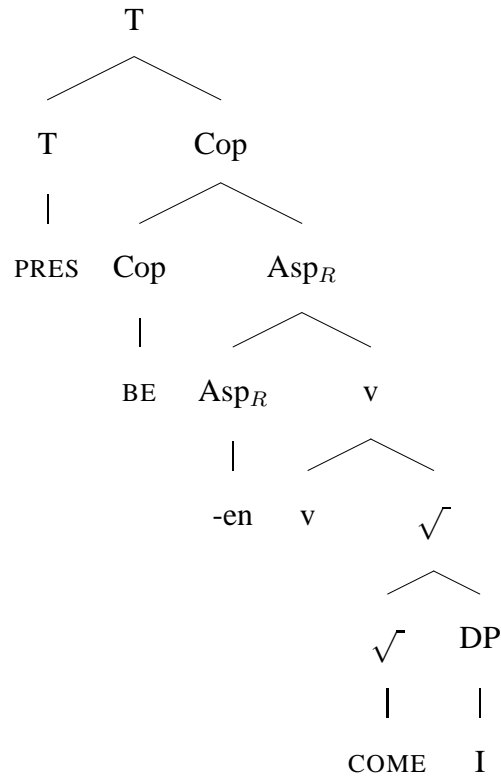
Our central claim about Earlier English is that the periphrasis with *be* – unlike that with *have* – did not change significantly from OE to EModE. It remained a stative resultative construction with a restricted interpretation and correspondingly restricted use. The *have* periphrasis, on the other hand, developed by the end of the ME period the full range of interpretations characteristic of the PDE perfect. We will propose the structure in (4) for *have* periphrases like (1b), where the auxiliary *have* spells out a clause-level Perf head carrying the anteriority semantics required for the experiential and universal readings of the perfect (we will describe these in detail in Section 3.1).

(4)



For *be* periphrases like (1a), we propose the structure in (5), which specifically lacks Perf. Auxiliary *be* is nothing more nor less than the copula, combining here with a resultative participle. This compositionally yields a perfect-of-result interpretation, where the result state holds of the subject. Due to the lack of Perf, however, we will argue that it cannot produce any of the other interpretations associated with the PDE perfect.

(5)



The change in the *have* periphrasis from a resultative to a more general perfect came around 1350. At this point, *have* started showing up with verbs that had previously only appeared with *be* – but it wasn’t replacing *be* in the perfect-of-result contexts with these verbs. Rather, it spread into experiential perfect contexts that had been the domain of the morphosyntactic simple past in OE and early ME. We will show that the curious restrictions on the use of *be* in late ME and EModE can all be reduced to its perfect-of-result interpretation and resulting incompatibility with contexts that would require an experiential perfect. This will lead to a greatly improved understanding of the developments that followed.

Note crucially that this account relates the appearance of specific auxiliaries to independently observable semantic properties. The distribution of *be* is not stipulated in terms of lexical selection, but falls out from the special semantics of the structure in

which it appears. As such, our account suggests a promising approach to the analysis of comparative data on auxiliary alternations. To the extent that the distribution of auxiliaries in a language like modern German differs from that in Earlier English, this suggests that its ‘perfect’ constructions might have a different syntactic and semantic structure. Conversely, if we find a construction with semantics similar to one of the Earlier English periphrases, we predict that it will have a similar distribution, other things being equal. Indeed, by comparison with similar data from German and Norwegian, where native speaker intuitions are available, we will find support for the semantics we propose on purely distributional grounds for the Earlier English constructions.

2 The distribution of *be* and *have* in Earlier English

The main empirical claim of this article is that the *be* periphrasis in Earlier English did not have the same temporal/aspectual interpretation as the *have* periphrasis, at least after 1350. The primary evidence for this claim comes from the rather different distribution of the two constructions during late ME and EModE: while the *have* periphrasis could apparently show up in all the contexts where it can in PDE, the *be* periphrasis was heavily restricted. In this section we present the basic data showing the nature of these restrictions, most of which have been noted and catalogued by previous researchers (see especially Fridén 1948, Rydén and Brorström 1987, Kytö 1997). With our use of large, syntactically annotated electronic corpora, we have however been able to achieve more precision in our findings. This allows us to define some of the restrictions more tightly and in some instances to identify crucial connections between them which seem to have

escaped attention until now.

2.1 The counterfactual effect

It has long been known that the strongest restriction on the *be* periphrasis in Earlier English comes from modal/irrealis contexts (Fridén 1948, Johannisson 1958, Mustanoja 1960, Traugott 1972, Rydén and Brorström 1987, Kytö 1997, Lipson 1999). In previous work (McFadden and Alexiadou 2005, 2006), we have more precisely identified the relevant contexts as past counterfactuals and argued that a number of other factors not obviously related to modality can be reduced in part or in whole to this counterfactual effect. We briefly summarize here the results of that work, extending it where necessary.

By past counterfactuals, we mean clauses which convey (independent of any sentential negation) that the proposition being considered was contrary to fact at a particular time in the past.⁷ The prototypical members of this category are (past) counterfactual conditionals, both the antecedent (i.e. the *if* clause) as in (6a) and the consequent (i.e. the *then* clause) as in (6b). Also included are clauses like (6c), which have essentially the same semantics as the consequent of a counterfactual conditional but no accompanying overt conditional antecedent. Finally, we also have counterfactual wishes like (6d).

- (6) a. and if they *had come* sooner, they could haue holpen them.

‘and if they had come sooner, they could have helped them.’ (Giff,G3V.246)

- b. he *had* never *come* to himself . . . if he had not met with this allay

‘he would never have come to himself . . . if he had not met with this distraction’ (Behn,189.165)

c. I am satisfy'd . . . else I *had* not *come* to Town at all.

'I am satisfied . . . otherwise I wouldn't have come to town at all.' (Vanbr,32.10,11)

d. And he . . . will wish he *had* with the poore peoples children *gon* barefoot.

'And he . . . will wish he had gone barefoot with the poor people's children.'

(Locke,35.46)

The effect of such past counterfactuals on the choice of auxiliaries in ME and EModE is nearly categorical. Table 1 shows the frequency of *be* and *have* in ME, comparing past counterfactuals with all other examples, while Table 2 shows the same for EModE. Throughout the article, we limit our attention to examples with verbs which could potentially occur with *be*, which we indicate by referring to the 'suitably restricted' periphrastic examples (henceforth SR).⁸ We see that *be* is vanishingly rare in the past counterfactuals. Combining both periods, only 9 of 167 (5.4%) counterfactual periphrases use *be*, compared to 77.8% *be* use in non-counterfactuals.⁹ Even verbs like *come*, which always took *be* in OE and early ME, are forced to take *have* in these contexts (as exemplified already in (6a-c)). In fact, we'll argue below that the nine instances with *be* listed in the tables have a special status and aren't really counterexamples, so that this counterfactual effect is essentially without exception.¹⁰

2.2 Other (apparent) restrictions on *be*

Two further contexts discussed by previous researchers do favor the use of *have* over *be*, but can be shown to boil down to the counterfactual effect. One is the pluperfect, i.e. periphrases with past forms of the auxiliary, exemplified with both *be* and *have* in (7):

- (7) a. For his tyme *was* not *come* to dyen...

‘For his time had not come to die’ (WycSer,I,414.3405)

- b. For also thei *hadden comun* to the feeste dai

‘For they had also come to the feast day.’ (NTWyc,IV,40.334)

Consider that all past counterfactual periphrases are formally pluperfects, in Earlier English as in PDE. Only *If I **had** gone...* can be a past counterfactual. *If I **have** gone...* can be about the past, but it can’t be counterfactual. We can thus expect the requirement for *have* in past counterfactuals to inflate the overall frequency of *have* in pluperfects. If we want to know whether past periphrases are independently more likely to use *have* than present ones, we must exclude the past counterfactuals. Doing so, we find that in ME the pluperfect *disfavored have*, as Table 3 shows. In EModE, shown in Table 4, the remaining preference for *have* in the pluperfect relative to the present perfect is small.¹¹

A similar pattern is found with negation. Here we have to account for interference from the counterfactual effect in sentences of the type *If Jones hadn’t X, she wouldn’t have Y*. Indeed, in our ME corpus 28.6% of SR negative periphrastic examples are counterfactuals, compared to only 8.7% of non-negative periphrases. Similarly in EModE, 14.9% of SR negatives are counterfactuals, compared to 7.2% of non-negatives.¹² If we exclude counterfactuals, we get the numbers in Table 5 for the two auxiliaries. In ME, an apparent difference between negative and non-negative contexts remains, but is not statistically significant ($\chi^2 = 1.2, p \leq .3$).¹³ In EModE we can see from the raw numbers that negation makes no appreciable difference ($\chi^2 = .008, p \leq 1$). The apparent preference for *have* with negation was thus just a side-effect of the counterfactual effect.

An independent context that does favor *have* is the infinitive:

- (8) a. we rede them *to haue doon* so zelously in goddys cause
 ‘... we read that they have acted so zealously in God’s cause’ (Fitzj,B1V.108)
- b. to make vnable prelatis eithir curatis in the chirche of God, is *to haue come*
 to the higest degree of trespassis
 ‘... to make people who are incompetent prelates or curates in the church of
 God is to have come to the highest degree of trespasses.’ (Purv,I,32.1568)

As Table 6 shows, the effect is clear, though not as marked as that with past counterfactuals.¹⁴ In Section 5.3 we will present additional data on the infinitives and show how their behavior can be related to the other contexts favoring *have*.

Iterative and durative semantics, as exemplified in (9a) and (9b) respectively (Kytö 1997), are also associated with a higher than usual frequency of *have*:¹⁵

- (9) a. Syns the death of them it *hath* sumwhat *decayed*. (Durative)
 (Leland, *The Itinerary of John Leland* I 143).
- b. how wel oftymes *hath* this fel theef *goon* rounde aboute this wal (Iterative)
 (Caxton, *History of Reynard the Fox* 11)

Kytö reports that 73% of durative periphrases in her corpus use *have*, compared to 54% of non-duratives. Similarly, 78% of iterative periphrases have *have*, again compared to 54% of non-iteratives. Our corpus investigations broadly support these findings.¹⁶

To summarize, then, in late ME and EModE, past counterfactuals required a periphrasis with *have*. Periphrastic infinitives and those with iterative or durative semantics had a clear (but not categorical) preference for *have*. Other factors which have been reported to be relevant can either be subsumed under the counterfactual effect or do not turn out to favor *have* at all.¹⁷ What we need, then, is a theory of the distribution of the

two auxiliaries which can accommodate and hopefully explain these effects.

3 The *be* periphrasis as a perfect of result

We have established that the periphrasis with *be* was distributed differently than that with *have* in late ME and EModE. The question we must answer now is what difference in the two constructions was responsible for this. Because the clearest restrictions on *be* are semantic, we will propose that the *be* and *have* periphrases differed semantically, in terms of their temporal/aspectual interpretations. The previous literature on perfects in Earlier English offers some suggestive remarks on this difference, centering on the distinction between state and action. Kytö (1997), for example, writes “Over the centuries, the distinction between state/result (indicated by *be*) and action (indicated by *have*) seems to have been one of the main distributional factors influencing the choice of the auxiliary” [p. 31]. The generalization that we would like to propose is essentially a stronger and more explicit version of this idea:

- (10) The distribution of auxiliaries in late ME and EModE periphrases:
- a. *be* only forms perfects of result where the result state holds of the subject.
 - b. *have* appears in all experiential perfects and in perfects of result where the result state holds of something other than the subject.

In this section we provide a basic discussion of perfect semantics to clarify what we mean by (10) and then demonstrate that it correctly characterizes the Earlier English data.

3.1 Background on perfect semantics

Since Reichenbach (1947), it has been standard to distinguish three times relevant to the meanings of tenses and aspects. The **speech time** is the time when an utterance is made. The **event time** is the time when the eventuality denoted takes place. The **reference time** is the time from which the eventuality is viewed or the time about which a claim is being made. We can see the interaction of the three times in a PDE past perfect like (11):

- (11) When we got home, Randy had been sleeping for 3 hours.

The reference time is the time when ‘we got home’, at some point before the speech time. The event time – when Randy sleeps for 3 hours – precedes that. Simplifying a bit, it is the perfect that indicates that the event time is before the reference time, while the past tense on *had* places the reference time before the speech time.

For the PDE perfect, four main interpretations are usually distinguished (see e.g. McCawley 1971, Iatridou et al. 2003), as exemplified in (12):

- (12) a. I have been sick since January. (Universal)
b. I have been sick twice since January. (Experiential)
c. I have lost my cellphone. Could you help me find it? (Result)
d. The Phillies have just won the World Series! (Recent Past)

The **Universal Perfect** describes an eventuality which holds over an interval starting some time in the past and continuing up to and including the reference time, so in (12a) I have been sick for the entire time from January up to when I utter the sentence. The **Experiential Perfect** describes an eventuality that occurred before the reference time

with no implication that it continues. In (12b), *twice* implies two separate ‘being sick’ eventualities between January and now, but there is no claim that I am still sick.¹⁸ The **Perfect of Result** describes a state holding at the reference time which is the result of the eventuality described by the verb phrase. This reading is indicated in (12c) because the second sentence makes clear that the phone is still lost. Finally, the **Perfect of Recent Past** describes eventualities which have just happened, as in (12d).

We will be concentrating on the experiential perfect and the perfect of result, as these are the readings that were clearly available with the intransitive verbs which alternated between *have* and *be* in Earlier English.¹⁹ The distinction between the two is clear if we consider two kinds of sentences that allow experiential but not perfect-of-result readings.²⁰ Sentence (13a) cannot have a perfect-of-result reading because there is no single result state that continues to hold at the reference time – losing the same phone three times implies having found it again twice in the interim. Instead, we get a clear experiential reading, that there are three instances of me losing my phone, prior to the reference time, in the past year. A perfect-of-result interpretation is also out for (13b), but for a different reason: *ride around the park* is atelic, thus does not yield a good result state, so we must have an experiential perfect.²¹

- (13) a. I have lost my cellphone three times in the past year.
 b. I have ridden all around the park.

3.2 Initial support for the generalization

Now that we have a basic idea of the different readings of the perfect, we can return to the generalization in (10) above. To repeat, in late ME and EModE, while the *have*

periphrasis had both experiential and result readings, we claim that the *be* periphrasis had only the latter, and only where the result state held of the subject. It is easy to find perfects of result with *be*, as in (14), and experiential perfects with *have*, as in (15).

- (14) a. I . . . wil build againe the Tabernacle of Daud, which *is fallen* downe.
(KJNT,XV,1A.1000)
- b. I perceiue these honourable Lords. . . *are come* to hear what hath been scattered upon the Wrack of Report. (RaTr,1,214.59)
- (15) a. when so euer this coniecture *hath fallen* in my mynde, the clearnesse of my conscience hath made mine hearte hoppe for ioy. (More,540.56)
- b. For suche as *hath gone* anye tyme abroad, wyll neuer forsake their trade.
'Whoever has gone some time abroad will never forsake their trade.' (Har,75.376)

Consistent with our generalization, we also find what look like perfect-of-result readings with transitive *have* periphrases where the result state holds of the object, as in (16).

- (16) a. I *have brought* your Lordship as accomlisht a Suit of Cloaths, as ever Peer of England trode the Stage in. (Vanbr,26.39)
- b. O, Archer, my Honesty, I fear *has ruin'd* me. (Farq,66.534)

What we should not find, according to our generalization, are experiential perfects with *be*, regardless of the main verb involved. As we are dealing with corpora for dead languages rather than native-speaker intuitions for living ones, data on ungrammaticality are not, strictly speaking, available. However, if a verb normally forms a periphrasis with *be*, but consistently appears instead with *have* in a particular context, then we have at least indirect evidence that it was ungrammatical with *be* in that context. This

empirical configuration is particularly informative because the choice between *have* and *be* is a binary one – every time *have* appears, *be* has failed to appear. The situation is thus distinct from and more probative than the more general case of a given syntactic construction not appearing in a corpus.

Returning then to the contexts where the *be* periphrasis is restricted, we argue that they are precisely those where a perfect-of-result interpretation would be ruled out or strongly dispreferred in favor of an experiential perfect. Duratives e.g. are atelic, describing a process rather than its result. In Aktionsart terms, a durative adverbial yields an activity, even when the predicate it combines with would otherwise be an achievement or accomplishment. Iteratives typically imply that the result state of each iteration no longer holds when the next iteration takes place. If Jones comes to London several times in a given period, she clearly cannot also remain in London over the same period. Neither kind of context yields a good result state, thus a perfect-of-result interpretation is unavailable, and the construction with *be* is simply inappropriate.

That resultativity is the deciding criterion is evidenced by examples which don't fit into any of the categories discussed so far, yet where we find *have* with a verb that otherwise appears with *be*. Several such clauses have neither iterative nor durative adverbials, yet are clearly atelic:

- (17) a. *pei han gon* all aboute the cytee
 they have gone all about the city
 ‘They have walked all around the city.’ (ManTr,117.2859)
- b. *3e haue* in his lande *riden* wip baner displaiede...
 you have in his land ridden with banner displayed

‘You have ridden in his land with banner displayed. . .’ (Brut,222.3998)

Again, an atelic eventuality does not yield a good result state, so these are clearly existential perfects, predicted to use *have*. Other examples describe a past eventuality which was in fact telic and produced a proper result state. They are special, however, in that the context makes clear that this result state no longer holds at the reference time:²²

- (18) a. For ye *han entred* into myn hous by violence

‘For you have entered into my house by force’ (CTMel,328.C1.814)

- b. he was ȝit in that place, where Martha *hadde comun* aȝens hym.

‘he was still in the place where Martha had come to him.’ (NTWyc,XI,20.1102)

(18a) is uttered by a man accusing thieves who are no longer in his house. (18b) comes at a point when Martha has left and sent her sister Mary back to the place where she had met Jesus (who *hym* refers to). Since the result state no longer holds at the reference time in such examples, they must again be experiential perfects, and the use of *have* is consistent with our generalization.

Finally, there are a number of examples which describe an eventuality that happened once for each individual denoted by the plural subject, as in (19):

- (19) a. many a grete hurte *hath byfallen*

‘Many great injuries have occurred’ (ReyFx,53.369)

- b. Sence I came to y^e Tower her *hath com* to or 3 frends

‘Since I came to the Tower, 2 or 3 friends have come here.’ (EHat,2,158.60)

Like iteratives, these sentences involve a series of independent eventualities which do not together yield a unified result state. They are about what has happened previously,

not what is the case as the result of a prior event – clearly experiential perfects. The auxiliary is therefore *have* even though these verbs can otherwise appear with *be*.

Thus by proposing that the *be* periphrasis can only form perfects of result, we immediately account for several facts of its distribution. We'll now consider German data which support our interpretation of the contexts just discussed and which also give us insight into the most important factor restricting the use of *be*: the counterfactual effect.

3.3 Counterfactuals and stative resultatives: a German comparison

Alongside its *haben* (HAVE) and *sein* (BE) perfects (see (20a) and (20b) respectively), German has a stative passive (see (20c)), which is formally identical to the *sein* perfect, but semantically quite distinct (see especially Kratzer 2000, for recent discussion).

- (20) a. Er hat gearbeitet.
 he HAS worked
 'He has worked.'
- b. Er ist angekommen.
 he IS arrived
 'He has arrived.'
- c. Er ist geheilt.
 er IS healed
 'He is healed.'

The difference in the temporal/aspectual semantics is suggested by the English translations – perfects for (20a) and (20b) but a present for the stative passive (20c). In fact, the stative passive has just the kind of resultative meaning we posit for the Earlier English

be ‘perfect’. It implies that the subject is in the result state of the event described by the main predicate at the reference time. The only difference is that the subject in the German stative passive corresponds to the object of a transitive main verb, while that in the Earlier English *be* periphrasis is the sole argument of an intransitive.²³ None of the other perfect interpretations are possible for the stative passive. The *sein* perfect, on the other hand, can have experiential in addition to perfect-of-result readings. Crucially, the German stative passive (but not the *sein* or *haben* perfect) shows restrictions on its distribution which are remarkably similar to those on the Earlier English *be* periphrasis.

First, while perfects with both *haben* and *sein* are compatible with durative adverbials (see (21a) and (21b) respectively), the stative passive is rather bad (see (21c)):

(21) Duratives

- a. Seitdem hat Erosion die Festung immer weiter zerstört. (***haben-perf.***)
since has erosion the fort ever further destroyed
‘Since then, erosion has destroyed the fort more and more.’
- b. Seitdem ist die Festung immer weiter verfallen. (***sein-perf.***)
since is the fort ever further decayed
‘Since then, the fort has decayed more and more.’
- c. ?* Seitdem ist die Festung immer weiter zerstört. (***stat. pass.***)
since is the fort ever further destroyed
intended: ‘Since then, the fort has been destroyed more and more.’

The same applies to clauses with iterative adverbials (compare (22a) and (22b) with (22c)):

(22) Iteratives

- a. Wir haben ihn in den letzten zehn Jahren immer wieder eingesperrt.
we have him in the last ten years always again locked.up
'In the last ten years we have locked him up again and again.'
- b. Er ist in den letzten zehn Jahren immer wieder entkommen.
he is in the last ten years always again escaped
'In the last ten years he has escaped again and again.'
- c. ?* Er ist in den letzten zehn Jahren immer wieder eingesperrt.
He is in the last ten years always again locked.up
intended: 'In the last ten years he has been locked up again and again.'

Similarly, atelic predicates happily form perfects, but not stative passives:²⁴

(23) Atelics

- a. Sie haben das Pferd gekitzelt. (**haben-perf.**)
they have the horse tickled
'They have tickled the horse.'
- b. Sie sind in der Stadt herumgeritten. (**sein-perf.**)
they are in the city ridden.around
'They have ridden around in the city.'
- c. ?* Das Pferd ist gekitzelt. (**stat. pass.**)
the horse is tickled
intended: 'The horse is in a tickled state.'

Furthermore, in contexts where the result state no longer holds, the stative passive is infelicitous. In the first clause of (24c), I am asserting that my cellphone is in a lost state, thus the statement in the second clause that I have found it again is a contradiction.

In contrast, both the *haben* and *sein* perfects in (24a) and (24b) are fine:

(24) Result state no longer holds

- a. Ich habe mein Handy verloren und dann wieder gefunden.
I have my cellphone lost, and then again found
'I have lost my cellphone and then found it again.'
- b. Mein Handy ist verschwunden und dann wieder aufgetaucht.
my cellphone is disappeared, and then again turned up
'My cellphone has disappeared and then shown up again.'
- c. * Mein Handy ist verloren, und ich habe es dann wieder gefunden.
my cellphone is lost and I have it then again found
intended: 'My cellphone has been lost, and then I've found it again.'

In all of this, the German stative passive behaves like the Earlier English *be* periphrasis, while the German *haben* and *sein* perfects pattern with the *have* periphrasis of late ME and EModE.

The most revealing parallel comes however from the interpretation of counterfactuals. If we take either German perfect and put its auxiliary in the past subjunctive, we get a past counterfactual, conveying that a proposition was contrary to fact at a time in the past, as in (25a) and (25b).²⁵ When we take a stative passive and put its auxiliary in the past subjunctive, on the other hand, what we get is a contrary-to-fact present state which is the result of a past event, i.e. a *present* counterfactual, as in (25c).

(25) Counterfactuals

- a. Wenn er gearbeitet hätte...
if he worked had:SBJ
'If he had worked...'

b. Wenn er angekommen wäre...

if he arrived were:SBJ

‘If he had arrived...’

c. Wenn er geheilt wäre...

if he healed were:SBJ...

‘If he were (in the state of having been) healed.’

Note that (25c) is somewhat difficult to render clearly in English. Indeed, its semantics make it rather marked, only appropriate in very specific circumstances.

The parallel with the Earlier English periphrases here is less obvious but just as strong. We have seen that the past subjunctive of a stative passive in German has a highly marked interpretation. If the Earlier English *be* periphrasis were semantically similar, we can expect that it would be relatively infrequent in counterfactual contexts. Indeed, in Section 2.1 we showed that *be* is all but absent in Earlier English past counterfactuals. Still, highly marked is not the same thing as ungrammatical, and (25c) is certainly possible in German. The *be* periphrasis should thus have appeared in counterfactuals occasionally, when that marked interpretation was the intended one. Recall then that we noted 9 apparent counterexamples to the counterfactual effect in Tables 1 and 2. In fact, there is reason to believe that these are *present* counterfactuals of result states, i.e. precisely parallel to the German example (25c). Consider the examples in (26):

- (26) a. and this is to singnefie the certeynte of profecie, whos bifalling of tyme to
comynge is so certeyn, as if it *were passid* now
‘and this is to signify the certainty of prophecy, whose happening in time to

come is as certain as if it had already happened now.’ (Purv,I,55.2214)

- b. The Fellow looks as if he *were broke* out of Bedlam.

‘The fellow looks like he broke out of Bedlam (and is still loose)’ (Farq,60.477)

- c. yf he had your sowle I wene he shold *be gone*.

‘If he had your soul, I think he would be gone.’ (MerTal,10.128)

The correct interpretation of such examples is by no means certain, especially since a present result state does imply a prior event. In each, however, there is something to support a present counterfactual reading. In (26a), the adverb *now* suggests a present state rather than a past eventuality. Similarly, in (26b), the present tense in the main clause supports a present counterfactual interpretation of the embedded clause. A person’s present appearance is more likely to lead someone to claim that they are an escaped mental patient than to claim that they may have escaped from a mental institution at some point in the past. The clearest indication, however, that we are not dealing with normal past counterfactuals comes from example (26c). Here the antecedent clause *yf he had your sowle* must be a present counterfactual – it is formally a simple past rather than a pluperfect – thus we expect the consequent to be a present counterfactual as well.²⁶

Thus we see that, in German, where grammaticality judgments and semantic intuitions are available, a stative resultative construction is impossible in precisely the contexts where the Earlier English *be* periphrasis did not appear. General perfects, however, work just fine in these contexts, whether with HAVE or BE. This supports our proposal that the Earlier English periphrasis with *be* was a perfect of result. What is relevant seems not to be the ‘perfect’ or anything related to voice, but stative resultative

semantics, which the German stative passive and the Earlier English *be* periphrasis have in common.

4 A Norwegian parallel

From the perspective of the languages which have served as the foundation for theoretical discussion of auxiliary selection – Dutch, French, German and Italian – it may seem odd that periphrastic ‘perfects’ with HAVE and BE would have clearly distinct temporal-aspectual properties in a single language, as we are claiming for Earlier English. In this section we present evidence that just such a contrast is clearly attested in Modern Norwegian.

At least some varieties of Norwegian display what looks like the same pattern of auxiliary distribution as Earlier English.²⁷ Only HAVE is possible with unergatives like (27a) and transitives as in (27b), but with unaccusatives, either HAVE or BE can appear as in (27c):

- (27) a. Sven *har/*er* jobbet i Stuttgart.
Sven HAS/*IS worked in Stuttgart.
- b. Sven *har/*er* spist Maultaschen i Stuttgart.
Sven HAS/*IS eaten Maultaschen in Stuttgart.
- c. Sven *har/er* dratt til Stuttgart.
Sven HAS/IS gone to Stuttgart.

As in Earlier English, we find HAVE with duratives like (28a) and iteratives as in (28b) and with the adverb ‘ever’, a strong indicator of experiential perfect interpretation as in

(28c):

- (28) a. På denne turen *har/*er* Sven dratt fra Hamburg, via Køl̃n, til Stuttgart.

On this trip, Sven HAS/*IS gone from Hamburg, through Cologne, to Stuttgart.

- b. Sven *har/*er* dratt til Stuttgart flere ganger det siste året.

Sven HAS/*IS gone to Stuttgart several times in the past year.

- c. *Har/*er* Sven noensinne dratt til Stuttgart?

HAS/*IS Sven ever gone to Stuttgart?

We also find that HAVE is preferred when the result state no longer holds. In (29a), the context suggests that Sven is still in Stuttgart, thus BE is possible.²⁸ The second conjunct in (29b), however, makes clear that the result state does not hold any longer, as Sven has gone on to Tübingen. Here BE is dispreferred.²⁹

- (29) a. Sven *har/er* dratt til Stuttgart for idag, og fortsetter til Tübingen i morgen.

Sven has/is gone to S. for the day, and will continue on to T. tomorrow.

- b. Sven *har/?er* dratt til Stuttgart for et par timer, og så fortsatt til Tübingen.

Sven has/?is gone to S. for a couple hours, and then continued on to T.

Finally, as example (30a) shows, BE is generally bad in past counterfactuals in Norwegian as well as in Earlier English. Note, however, that in the special context in (30b), native speakers report an improvement:³⁰

- (30) a. Hvis Sven hadde/*var dratt til Stuttgart, kunne han ha sett Mercedes muse-
umet.

If Sven had/*were gone to S., he could have seen the Mercedes Museum.

- b. Hvis Sven hadde/?var dratt til Stuttgart, kunne Timo ha spist middag med

ham akkurat nå.

If Sv. had/??were gone to S., T. could be having dinner with him right now.

What is special in (30b) is that the consequent clause (*kunne Timo...*) is about a present contrary-to-fact eventuality. This makes it potentially felicitous for the antecedent clause to mean something like “If Sven were now in Stuttgart as a resulting of going there”. In other words, it encourages precisely the ‘present counterfactual of resultative state’ interpretation that we have been discussing for German and Earlier English.

We have not found any formal treatment of the Norwegian auxiliary patterns in the literature, but the evidence clearly indicates that it too results from a deep difference in the semantics of the HAVE and BE periphrases.³¹ We thus have confirmation that auxiliary alternations can follow the experiential perfect vs. perfect of result divide. Indeed, we have native-speaker intuitions to establish that this really is the relevant difference. Crucially, the distribution of HAVE and BE in contexts that can be identified independent of native-speaker intuitions is the same in Norwegian as in Earlier English. This provides strong support for our semantic analysis of the Earlier English data.³²

5 Formalizing the analysis

In the preceding sections, we have presented evidence to show that the Earlier English periphrases with *have* and *be* were *not* a unified temporal/aspectual category, differing only in terms of auxiliary selection. Instead, that with *have* had a more general semantics, including the experiential perfect, while that with *be* was restricted to a perfect-

of-result interpretation. We will now propose a formalization of this analysis, further clarifying in the process how it explains the data. We propose that the periphrasis with *have* in late ME and EModE was like the PDE perfect, containing material at the clausal tense/aspect level denoting anteriority to the reference time. This material is what yields experiential perfect readings (and probably also universal perfect readings). The periphrasis with *be*, on the other hand, lacked this material. Instead it was built around a stative resultative participle combining compositionally with the normal copula.

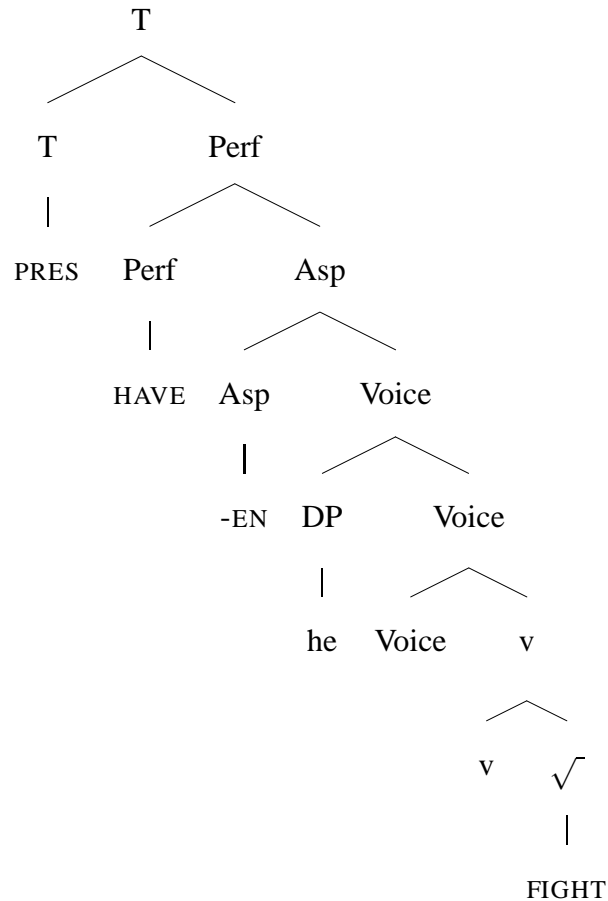
5.1 Structural details

For the *have* periphrasis we follow several recent works in positing a functional head Perf below T (see e.g. von Stechow 1998, 1999, Iatridou et al. 2003, Pancheva and von Stechow 2004). This is the source of the anteriority semantics and is spelled out as *have*.³³ For an unergative perfect like the one in (1b), repeated here as (31a), we can thus propose a (pre-movement) structure like (31b):³⁴

- (31) a. he *haþe foghten* wyth þe fend

‘He has fought with the enemy’ (Mirk, 116.3171)

b.



What concerns us now is the semantic contribution of the Perf head. As we have seen no reason to develop a novel theory of perfect semantics, we will content ourselves with demonstrating how the structure we adopt here is compatible with one of the standard approaches.

von Stechow (1999) develops a version of the Extended Now (XN) Theory.³⁵ Rather than expressing a simple relation between the reference and event times, the perfect introduces its own interval – the XN – which has the reference time as its right edge and extends to some contextually specified time in the past. The eventuality is then situated within the XN, with temporal and quantificational adverbials determining exactly where.³⁶ The structure we propose for the *have* periphrasis in (31b) above fits in straightforwardly with such a semantics. Indeed, in the relevant respects it is analogous

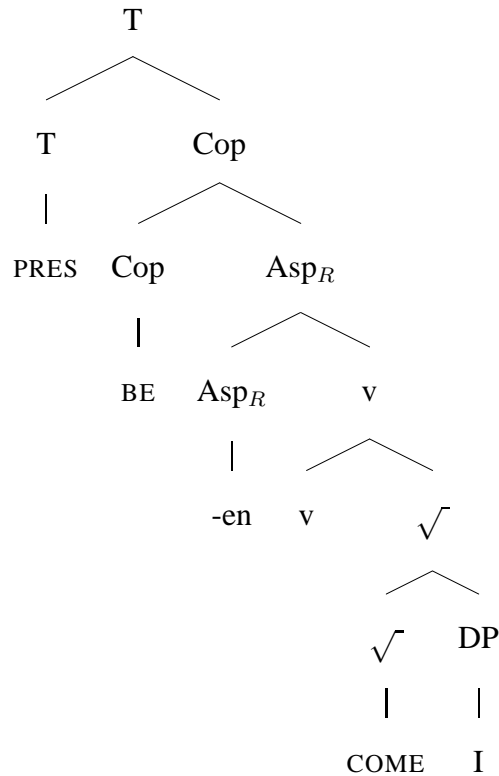
to the syntactic structure von Stechow himself proposes (von Stechow 1999, §6). The Perf head is what is responsible for creating an XN interval extending into the past and is spelled out as auxiliary *have*. The T head situates the ending point of that interval relative to the speech time and is spelled out as the finite tense marking. The ending point of the XN is thus analogous to the Reichenbachian reference time. The most important point for our purposes is that the *have* periphrasis contains an element (which we identify as Perf) expressing anteriority to the reference time.³⁷ The anteriority arises here from the fact that the perfect XN extends into the past from its T-anchored ending point.

The Earlier English *be* periphrasis, on the other hand, crucially lacked this Perf head, and thus also the associated anteriority. Given the comparison with German, we will adopt for it a structure similar to what has been proposed in the recent literature for stative resultative passives (see e.g. von Stechow 1998, Kratzer 2000, Anagnostopoulou 2003, Embick 2004, Alexiadou and Anagnostopoulou 2008). Thus for the relevant parts of a sentence like (1a) above, repeated here as (32a), we propose the structure in (32b):

(32) a. *I am come as 3e bade me*

‘I have come as you asked me.’ (Mirk, 75.2015)

b.



Whereas we claim that *have* spells out the Perf head, auxiliary *be* is nothing more or less than the normal copula that appears with predicate adjectives and nouns.³⁸ The Asp_R head (from Embick 2004) is spelled out as the participial morphology and produces a state which is the result of an event (see von Stechow 1998, Kratzer 2000, for proposals on the semantic details).³⁹ Because of this, it needs as its complement an eventuality which can produce a result state, a requirement which iteratives, duratives and atelic predicates in general do not meet.⁴⁰ Hence they are not eligible to appear in this structure and don't show up in the *be* periphrasis, unless they are somehow coerced to yield a result state (potentially by the addition of some adverbial element which supplies its own result state).⁴¹

Transitives and unergatives are ruled out by an incompatibility between Asp_R and the Voice head that introduces external arguments. The output of Asp_R is stative, and

thus the wrong input for agentive Voice, which according to Kratzer (1996) takes an event and yields another event with an agent modifier.⁴² So we can't have Voice above Asp_R . Similarly, the output of Voice (an event) is the wrong input for Asp_R (which wants an event *plus* a state), so a structure with Asp_R above Voice is equally impossible.

5.2 Explaining the counterfactual effect

This analysis allows us to be more explicit about why the Earlier English *be* periphrasis didn't yield true past counterfactuals. Recall from Section 2.2 that counterfactuality is encoded in languages like English by finite past tense morphology, which we assume spells out material in T. Crucially, a clause that is formally a simple past, like the first one in (33a), can in principle be interpreted as past or as counterfactual – but not as both.⁴³ In order to get a past counterfactual meaning, some additional morphosyntactic material is necessary. What we get is formally a pluperfect, as in (33b):

- (33) a. If I owned a car, I would drive to Vegas.
 b. If I had owned a car, I would have driven to Vegas.

In such instances, the T material spelled out as past morphology on the auxiliary supplies the counterfactuality, while the perfect morphosyntax yields the 'pastness'. This works because the *have* periphrasis has an interpretation which, while distinct from the simple past, does involve anteriority. What we refer to as 'past counterfactuals' are thus more properly counterfactuals of anterior perfects.⁴⁴ The structure we propose for the *be* periphrasis, however, has no source for 'pastness' or anteriority beyond a past T. But on the assumption that T only occurs once per clause, we get either past or counterfactual, not both. If the latter, then in strictly compositional fashion the structure produces

the counterfactual of a result state reading that we saw in the examples in (26) above.

Consider a typical PDE past counterfactual as in (34), with a verb which could have appeared in the *be* periphrasis in Earlier English. We give two possible paraphrases. The one in (35a) lays it out in explicit terms as the counterfactual of an experiential perfect, i.e. involving an eventuality anterior to the reference time, all under counterfactuality. The paraphrase in (35b), on the other hand, lays it out as the counterfactual of a result state.⁴⁵

(34) If you had come to London, I could have helped you.

(35) a. If it were the case that at some previous time you came to London. . .

b. If it were the case that you were now in London as a result of coming here. . .

As the PDE *have* perfect allows a kind of perfect-of-result interpretation, it can be used (with finite past morphology) when the reading in (35b) is intended. We submit, however, that in the vast majority of cases where it is used counterfactually, it is the reading in (35a) which is intended; i.e. this is the preferred interpretation for a sentence like (34). We can draw out the (35b) reading, but it takes a certain kind of context. For example, we imagine that it is being said on the telephone by someone in London to someone in Manchester and change the details of the consequent clause as in (36):

(36) If you had come here to London, we could be talking face-to-face.

The counterfactual-of-result interpretation indicated in (35b) is thus available, but marked and uncommon. Our analysis implies that it is only this marked interpretation that the Earlier English *be* periphrasis could receive as a counterfactual. The counterfactual-of-perfect meaning paraphrased in (35a), on the other hand, could only be conveyed by the

have periphrasis. Thus speakers were obliged to use that construction, even with verbs like *come*, when that is the meaning they intended. Assuming that they had more or less the same sorts of things to say as speakers of PDE, this explains why ‘perfect’ clauses with counterfactual semantics appear overwhelmingly with *have* in the corpora.

5.3 Perfect infinitives

The lack of a source for anteriority below T can also explain the avoidance of the periphrasis with *be* in the infinitive. It turns out that a large number of such clauses in Earlier English fit into a special and somewhat odd category, exemplified by the sentences in (37):

- (37) a. for he was commaundyd to *have londyd* at Calys by the kynge
(GrChr,206.1781)
- b. she was rigged and ready in all points to *haue gone away* (Cov,5.53)

In PDE, the perfect infinitive is used when the eventuality of the non-finite clause is anterior to a reference time established on the basis of the main clause. But the events described by the embedded clauses in (37) are simultaneous with or subsequent to those of the matrix clauses, so we would expect non-perfect infinitives.

Why Earlier English had perfect infinitives in such cases is not entirely clear (see Visser 1963, III, 2, 2222ff., for data and discussion). We can guess that, at this stage of the language, the reference time of embedded infinitives was not (always) fixed by the matrix clause (see also Los 2005). The fact that the eventualities described by the embedded clauses in (37) are in the past would thus plausibly have needed (or allowed) independent expression. Since Earlier English (like PDE) had no past infinitive, the

only means for doing so would be with the *have* periphrasis, which could at least denote anteriority – perhaps to a default reference time simultaneous with the speech time. Lacking anteriority under our analysis, the *be* periphrasis would not have been appropriate. Crucially, the special context in (37) was the most common use of the infinitive periphrasis in late ME and EModE. Based on our readings, well over half of the examples with *have* reported in Table 6 belong here. The higher frequency of the *have* periphrasis relative to that with *be* in the infinitive is thus explained.

5.4 A prediction confirmed: double perfects

The analysis we have presented makes one additional, straightforward prediction. If Earlier English *have* and *be* spelled out distinct syntactic categories, we might expect them to co-occur. i.e. if the *be* construction lacks the Perf head, it should be possible to add Perf – spelled out as *have* – on top, creating the perfect of a stative resultative. Indeed, we have found 8 examples of just this type in our corpora:

- (38) a. ... supposing that the prisoners *had beene fled* (KJNT,XVI,20A.1123)
 b. At which time we thought our Enemies *had been come* to beset the House
 (EsSt,200.122)

Crucially, we have found no examples where the second auxiliary is also *have*. This is precisely what we expect if there can only be one Perf head per clause (as in PDE).

6 Retelling the history

Our analysis leads to a novel view of the historical development of the English perfect and allows a better understanding of changes in the frequencies of the two auxiliaries. Recall that the periphrases with both are generally assumed to have started out (pre-OE) as statives built around resultative participles. We are claiming that the *be* periphrasis retained this status, while the *have* periphrasis became a more general perfect.

We would like to argue that this explains a large part of the increase in the frequency of *have* relative to *be* during the ME period, which until now has been interpreted as the start of the replacement of *be* by *have*. Note that, regardless of the auxiliary involved, the periphrasis was quite rare compared to the simple past in OE, but its role expanded through ME and especially in EModE (see e.g. Elsness 1997). We propose that this amounted specifically to the *have* periphrasis spreading into new contexts where the simple past had been used until then, i.e. the various non-resultative perfect contexts, while the *be* periphrasis remained stable as a resultative. In other words, *have* was not replacing *be* in late ME and EModE, but certain uses of the simple past.

We see evidence for this if, instead of measuring the frequency of *have* and *be* periphrases relative to each other, we measure the frequency of each against the total number of clauses, as in Table 7.⁴⁶ While the *have* periphrasis did become rather more frequent between 1150 and 1710, that with *be* did not retreat, but rather hovered around the same level.⁴⁷

We can also clearly follow these developments in the history of the past counterfactual. In OE and early ME (before ca. 1350), past counterfactuals were expressed with simple, non-periphrastic, past subjunctives, as in (39) (from Molencki 2000):

- (39) ac hit wære to hrædlic gif he þa on cildcradole acweald wurde
 but it were too quick if he then on child.cradle killed were
 ‘but it would have been too early if he had been killed then in his cradle’
 (ÆCHom i.82.28)

The finite past inflection here indicates the counterfactuality, not anything temporal. As noted by Mitchell (1985), “...unreality in OE is timeless; unlike Latin and MnE [PDE], OE does not distinguish grammatically between unreality in the past, present, or future” (p. 805). Presumably, this was because the construction with *have* was not yet a perfect expressing anteriority, but still only a stative resultative construction, parallel to the *be* periphrasis. If so, then the deficiency lay not in anything specific to counterfactuals, but in the (in)ability to express embedded anteriority. That this is correct is indicated by the fact that OE had nothing like a perfect infinitive (see Mitchell 1985, vol. I, p. 388ff) and also lacked a consistent distinction between the simple past and the pluperfect. Mitchell (1985, vol. I, p. 247-252) provides extensive discussion of the use of simple past forms in OE where we would expect pluperfects in PDE, as in (40):

- (40) On þam dagum wæron on Wihthlande þreo wif, þa twa wæron blinde
 on those days were on Wightland three women the two were blind
 geond nigon geara fec, and þæt þrydde ne geseah þære sunnan leoht næfre
 through nine years’ time and the third not saw the sun’s light never
 (ÆLS 21.156)

‘In those days there were three women on the Isle of Wight. Two of them had been blind for nine years, and the third had never seen the light of the sun.’

Note, then, that during the OE and early ME periods, there are no periphrastic con-

structions with past counterfactual interpretation, nor are there any examples of the *have* periphrasis with *come*, the quintessential (and most frequent) verb which forms perfects of result predicated of the subject.⁴⁸ However, once the *have* periphrasis developed into an anterior perfect around 1350, it came to be used to clearly mark past counterfactuals, irrespective of the main verb involved. Not coincidentally, such past counterfactuals constitute the earliest examples of *have* occurring with verbs like *come*. In particular, the first 14 examples of *have* with *come* in our corpora occur in the period between 1350 and 1420 (alongside 97 with *be*), and 9 of those 14 are past counterfactuals. That is, the spread of *have* with *come* is simultaneous with the spread of the periphrastic past counterfactual. Crucially, *have* is not pushing into former *be* territory here. Again, past counterfactuals were uniformly expressed by the simple past before this time, never by the *be* periphrasis.

The realization that *be* was not actually receding in late ME and EModE helps us to understand why it held on for several centuries after the increase in the frequency of *have* began around 1350. This early expansion of *have* encroached on the simple past and did not affect *be*. The actual loss of *be* was a separate change, distinct from the developments we have discussed. According to the corpus data, *be* did not start to recede in favor of *have* until Late Modern English, i.e. circa 1700–1900.⁴⁹ It only looks like *have* took 550 years to replace *be* if we misinterpret the initial increase of *have*.

7 Theoretical issues and comparisons

One consequence of our analysis is that the alternation between *have* and *be* in Earlier English was not really auxiliary selection as normally understood. That is, we do not have a single tense/aspect with an alternation in the auxiliary according to properties of the main predicate and its arguments. Rather, the choice of auxiliary reflects a choice between two distinct temporal-aspectual structures: *have* spells out a Perf head, while *be* is just a copula, accompanying a stative resultative participle. In this section we will discuss some of the issues that this raises relating to unaccusativity, theories of auxiliary selection and the definition and make-up of the perfect.

Given our analysis of the Earlier English facts, we can expect that existing theories of auxiliary selection designed to handle languages like German and Italian will be a poor fit. Indeed, to the extent that the periphrases with *have* and *be* were syntactically distinct in the way we propose, accounts of auxiliary selection strictly speaking do not apply. However, simply excluding the Earlier English data is not an interesting strategy, and we think that something can be learned from why it is that they present a challenge.

Theories of auxiliary selection frequently do not generalize well beyond the languages that they were initially designed to deal with, nor do they offer much insight as to why languages vary in the ways that they do (see e.g. McFadden 2007 and the contributions in Aranovich 2007 for recent critical surveys of existing theories). We suggest that one common reason for this failing has been the often tacit assumption that the perfect is a more or less homogeneous category cross-linguistically. There is good evidence, however, to reject this assumption (see e.g. the papers in Alexiadou et al. 2003), and the data from Earlier English are particularly clear in this regard. Once we

take seriously the conclusion that the ‘perfect’ is syntactically and semantically heterogeneous, we must fundamentally alter the way we attempt to explain patterns of auxiliary alternation. Our analyses must be more nuanced, as there can be no single, unified theory of auxiliary selection. However, if we can identify and make reference to distinctions in the properties of the perfect, we can hope for better empirical coverage and for deeper explanation of cross-linguistic variation. All other things being equal, two languages will differ in their auxiliary patterns not due to random variation, but because their perfects are somehow different.

It will be helpful to consider here two of the most important approaches to auxiliary selection to see how they differ from the analysis we are proposing. The first, going back to Perlmutter (1978) and Burzio (1986), is to connect the choice of auxiliaries to unaccusativity. It has been argued that, in languages like Italian, German and Dutch, *BE* is used with unaccusatives, while *HAVE* is used with unergatives and transitives. Kayne (1993) proposes to motivate this difference in selection in terms of the presence or absence of a P head which is required to introduce the participial structure when there is an external argument. The auxiliary verb is always underlyingly *be*, but when the P is present, it incorporates into *be*, yielding *have*.

A second approach is taken by Sorace (2000, and much subsequent work), who proposes that auxiliary selection is determined in terms of a hierarchy of semantically-defined classes of intransitive verbs, her Auxiliary Selection Hierarchy (ASH). Verbs tend more or less strongly to select *HAVE* or *BE* depending on where they fall on the hierarchy. Non-motional, controlled process verbs like *work* most clearly prefer *HAVE*, while change of location verbs like *arrive* most clearly prefer *BE*. Languages vary in

where on the hierarchy they actually draw the line, thus accounting for the differences in their patterns of auxiliary selection. This approach has the advantage that it provides a means to capture cross-linguistic variation and change, something that has been notoriously problematic for unaccusativity theories.

In contrast, our analysis makes no explicit mention of unaccusativity, nor does it refer to semantic verb classes in the way that Sorace does. Instead, we have claimed that Earlier English *be* appears only in structures with a stative resultative Asp_R head, yielding a result state holding of the subject. Restrictions on Asp_R have effects similar to those of the unaccusativity requirement or Sorace's ASH in picking out the verb classes that can appear with *be*, but there are some crucial differences which merit discussion.

The clearest overlap with the other theories is that *be* is strictly ruled out in transitives and agentive unergatives. For us, however, this is due to an incompatibility between Asp_R and Voice, as discussed in Section 5.1, and thus falls out from our analysis of the semantics of the *be* periphrasis. In other cases, we straightforwardly make the right predictions where unaccusativity theories run into complications. For example, the fact that no statives appear with *be* is unremarkable – their denotation contains only a state, without the transition event that identifies it as a target state. They are thus incompatible with Asp_R and can only appear in the *have* periphrasis. We need not claim that (all) statives are unergative. Similarly, the behavior of alternating verbs comes out right without any additional assumptions. Atelic activity verbs like *run* or *ride* do not have target states in their denotations, thus it is expected that they won't appear in the *be* periphrasis unmodified. However, when there is additional material containing a target state, like a goal PP, the availability of *be* is correctly predicted. We don't have to

assume that goal PPs modify argument structure or adopt a complicated definition of unaccusativity.

Sorace's ASH has less difficulty than accounts based on unaccusativity because it is designed to accommodate the interplay of multiple factors. The definition and arrangement of the verb classes take into account both thematic notions like agentivity and aspectual ones like telicity. Still, for Sorace this has to be stipulated, whereas in our account of English, the various relevant factors are unified in that they prevent or facilitate the appearance of Asp_R and a perfect-of-result interpretation.

The widest divergence between our theory and previous ones, however, comes in those areas where Earlier English behaved differently from languages like German, Dutch and Italian. As we have seen at length, even the most prototypical unaccusative verbs could not appear with *be* in true past counterfactuals and various other clear experiential perfect contexts. In these cases, what is relevant is not whether the denotation of the main predicate contains a target state, but whether the claim of the clause is that this target state actually holds of the subject at the reference time. In a typical experiential perfect like *I have come here many times*, there is a target state (or several) involved in the denotation of the predicate. However, it is not claimed to hold of the subject at the reference time. There is no Asp_R with a stative resultative interpretation, but instead a Perf head, contributing anteriority, and this Perf head is always spelled out as *have* in Earlier English, never *be*.

This of course means that our proposal for Earlier English is not intended to directly cover German, Dutch and Italian. In these languages, no differences have been detected in the perfect semantics available with HAVE and BE. The data we discussed

in Section 3.3 showed that, at least for the diagnostics relevant for Earlier English, German *haben* and *sein* perfects consistently pattern together and contrast with the stative passive. It is thus reasonable to continue to speak of a single perfect.⁵⁰ Nonetheless, the difference we posit between these languages and Earlier English is not arbitrary: Earlier English *be* has a different distribution than German *sein* because the two are syntactico-semantically quite distinct, spelling out different syntactic heads.

This brings us to the question of what exactly the ‘perfect’ is, given the cross-linguistic differences discussed in Alexiadou et al. (2003) and our own claims that the Earlier English periphrasis with *be* was distinct from that with *have* and both German perfects. The initially disappointing answer is that there is no well-defined universal perfect category. However, it would be hasty to abandon the idea that the perfect has some reality outside of our desire to impose order.

The approach to this dilemma that we favor is inspired most directly by Iatridou et al. (2003). The idea is that the perfect is not a simple category with a universal definition and consistent properties, but a cover term for a wide range of complex constructions which share a similar make-up. What unifies perfects is that they involve multiple pieces related to syntactico-semantic levels of tense, aspect and potentially even Aktionsart, and convey either explicit or implicit anteriority.⁵¹ What distinguishes between the various types of perfect is the presence or absence of specific pieces, the precise specification and interpretation of those pieces, and how the syntactico-semantic pieces map onto morpho-syntactic ones. Perfect is then neither a primitive of the theory nor a category that has a single precise definition in terms of such primitives. Rather, we can understand it from a methodological perspective as a class of data for which a unified (if

perhaps not uniform) account is desirable. The similarities between the various perfects are sufficient that we would like an explanation of how they arise, and a complete theory of tense and aspect can be expected to make possible a systematic account of these similarities as well as the differences. We will consider here one of the issues that the Earlier English data present for such a theory.

A central question regarding the perfect has always been exactly how the various readings are related. Can they all be derived from a single underlying structure, and how can we explain cross-linguistic differences in which of them are available? The literature on these issues is vast (see e.g. Reichenbach 1947, McCawley 1971, McCoard 1978, Dowty 1979, Kamp and Reyle 1993, Kiparsky 2002, Klein 1994, von Stechow 1999, Iatridou et al. 2003, Pancheva and von Stechow 2004, Mittwoch 2008), but a good deal of it focusses on the distinction between universal and experiential readings. What matters for us is the difference between the perfect of result and all of the others, so this is what we will concentrate on here.

We have said that the Earlier English *be* periphrasis could have a resultative interpretation, but no other, while the *have* periphrasis had at least the experiential reading in addition to the resultative. We have explicitly tied this semantic difference to a syntactic one by positing distinct structures for the two constructions, showing how the structure with *be* can yield only a resultative interpretation while that with *have* can yield an experiential one. This raises the important question of how we should analyze the perfects of result we do find with *have* with transitives and unergatives in Earlier English (like the examples in (16) in Section 3.2) and indeed in PDE. One option would be to claim that the resultative *have* periphrasis is structurally analogous to the resultative *be* periphrasis,

but with additional material to introduce the external argument.⁵² This could account for the semantic parallel with the *be* examples, but it raises a difficult morpho-syntactic problem. Where does the *have* come from if there is no Perf head present?⁵³

Thus we propose instead that *have* resultatives are structurally identical to other *have* perfects in Earlier English (and PDE). We then have to explain how to get a perfect-of-result reading out of the anteriority semantics of the structure containing Perf, but this turns out not to be a serious challenge. The perfect-of-result reading can be seen as the experiential perfect – the eventuality happened at some time anterior to the reference time – plus an additional implication – the result state of that eventuality continues to hold at the reference time. We can then attribute to Perf an underspecified anteriority semantics which is compatible with both experiential and perfect-of-result readings, and have those readings be distinguished by the contribution of other elements (like adverbials and the context). Indeed, this is one of the standard strategies for deriving two or more of the readings of the perfect from a single basic denotation (see e.g. von Stechow’s 1999 approach, discussed in Section 5.1 above and now Mittwoch 2008 specifically on deriving the perfect-of-result interpretation from the experiential perfect).

Of course this is compatible in an obvious way with the distribution of the two periphrases in Earlier English. With *have*, the question of whether there is a result state which continues to hold at the reference time is irrelevant, as the *have* periphrasis will be compatible either way. This point is only interesting because it is in clear distinction to what we find with *be*. When there is no appropriate result state or it no longer holds at the reference time, the *be* periphrasis is incompatible and does not appear. Thus it is

reasonable to claim, as we have, that the semantics of the *have* periphrasis is underspecified but compatible with a perfect of result, whereas that of the *be* periphrasis explicitly denotes a perfect of result.

8 Summary

In this article we have pursued two goals. On the one hand, we have attempted to motivate a particular understanding of the alternation between *have* and *be* with a past participle in Earlier English. Specifically, we have argued that while the periphrasis with *have* showed the full range of interpretations of the PDE perfect, that with *be* was restricted to a particular kind of perfect of result. On the other hand, we have proposed a formal analysis for this alternation and explored a series of consequences that it has for theories of auxiliary selection and the perfect in general. We have claimed that the two periphrases were structurally distinct – that with *have* involving a clause-level Perf head denoting anteriority, while that with *be* was a copular construction built around a stative resultative participle.

Our novel account of the developments in the periphrastic constructions in the history of English can be conveniently summarized in terms of the three questions we posed in Section 1.1. First, why was the spread of *have* after 1350 favored by modal and irrealis contexts, past and infinitive perfects and clauses with iterative or durative semantics? We have argued that all of these contexts are either inconsistent with or uncommon with a perfect-of-result interpretation. Since auxiliary *be* formed only perfects of result built around an Asp_R head, it was dispreferred or impossible in those contexts.

Second, why should these factors have only become relevant around the year 1350? We have shown that the *be* periphrasis was never actually possible in these contexts. In fact, in OE and early ME, neither kind of periphrasis could show up with such semantics, the simple past being used instead. What changed around 1350 is that the periphrasis with *have* developed experiential perfect semantics – i.e. *have* first started spelling out the Perf head – and thus first started showing up in these contexts. This is what first made the absence of the periphrasis with *be* conspicuous. Third, why did the replacement of *be* by *have* take something like 550 years to go to completion? As our answer to the last question makes clear, 1350 was not actually the start of the loss of *be*, but the start of an expansion of *have* at the expense of the simple past. Indeed, we have given quantitative evidence that the frequency of the *be* periphrasis was stable throughout ME and EModE, i.e. up to around 1700. The actual replacement of *be* by *have* was a separate and later change, which took at most 200 years and was completed around 1900.

Our analysis is crucially based on the premise that the periphrases with *have* and *be* in Earlier English were not just two versions of a single temporal-aspectual category with different auxiliaries chosen on the basis of properties of the main predicate. Rather, they represented two structures which were syntactically and semantically distinct from each other quite independent of whatever verbs, arguments and adverbial material might appear below. If we are correct on this point, then we have furnished additional evidence that the perfect cannot be regarded as a unified category. It is rather a complex of independent syntactic, semantic and morphological pieces which tend to co-occur but have no cross-linguistically unified identity. What we hope to have shown is that theories of the sub-parts of this complex – here in particular the distribution of

auxiliaries – not only must be informed by but can also profit from this insight.

Appendix: Source Texts

The abbreviated labels, descriptions, corpus filenames and dates for the texts from which the examples in this article have been taken are as follows:

Abbr.	Text	Corpus File	Date
Behn	Aphra Behn's <i>Oroonoko</i>	BEHN	c. 1668
Brut	<i>The Brut or the Chronicles of England</i>	CMBRUT3	c. 1400
Cov	Robert Coverte's <i>A trve and almost incredible report...</i>	COVERTE	1612
CTMel	<i>The Tale of Melibee (Canterbury Tales)</i>	CMCTMELI	c. 1390
Drumd	<i>Letters of John Drummond</i>	DRUMMOND	1690
EHat	<i>Correspondence of Elizabeth Hatton</i>	EHATTON	1690
EsSt	<i>The trial of the Earl of Essex</i>	ESSEXSTATE	1600
Fitzj	Richard Fitzjames' <i>Sermo die Lune</i>	CMFITZJA	c. 1495
Fry	John Fryer's <i>A new account of East India and Persia</i>	FRYER	1672-81
Farq	George Farquhar's <i>The beaux stratagem</i>	FARQUHAR	1707
Fox	<i>The Journal of George Fox</i>	FOX	1673-74
Giff	George Gifford's <i>A dialogue concerning witches...</i>	GIFFORD	1593
GrChr	<i>Gregory's Chronicle</i>	CMGREGORY	c. 1475
Har	Thomas Harman's <i>A caueat or warening...</i>	HARMAN	1567-68
JPin	<i>Letters of Jane Pinney</i>	JPINNEY	1685-86
JoTay	<i>All the workes of John Taylor</i>	JOTAYLOR	1630
KJNT	<i>Authorized (King James) Version of the Bible, NT</i>	AUTHNEW	1611
Locke	John Locke's <i>Directions concerning education</i>	LOCKE	1685
ManTr	<i>Mandeville's Travels</i>	CMMANDEV	c. 1400
MerTal	<i>A hundred mery talys</i>	MERRYTAL	1526
Mirk	<i>Mirk's Festial</i>	CMMIRK	a. 1415
More	<i>The Correspondence of Sir Thomas More</i>	MORELET2	1533-35
NTWyc	<i>The New Testament (Wycliffite)</i>	CMNTEST	c. 1395
Purv	John Purvey's <i>General Prologue to the Bible</i>	CMPURVEY	c. 1388
RalTr	<i>The Trial of Sir Walter Raleigh</i>	RALEIGH	1600
ReyFx	William Caxton's <i>History of Reynard the Fox</i>	CMREYNAR	1481
Vanbr	<i>The complete works of Sir John Vanbrugh</i>	VANBR	1696
WycSer	<i>English Wycliffite Sermons</i>	CMWYC SER	c. 1400

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Notes

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²We will use “Earlier English” as a cover term for Old English (OE, to 1150), Middle English (ME, from 1150 to 1500) and Early Modern English (EModE, from 1500 to 1710). We avoid using the simpler term “Early English” because it is usually reserved for OE and ME to the exclusion of EModE. We refer to English as it is currently spoken as Present-Day English (PDE).

³Because of this, we refer to the Earlier English constructions as the “*be* periphrasis” or “periphrasis with *be*” and the “*have* periphrasis” or “periphrasis with *have*”, avoiding the misleading and imprecise “*be* perfect” and “*have* perfect”. It should be clear that by “periphrasis” we always mean active periphrastic constructions with the past participle.

⁴Except where otherwise noted, our data and statistics come from the *York-Toronto-Helsinki Parsed Corpus of Old English Prose* (Taylor, Warner, Pintzuk, and Beths 2003), the *Penn-Helsinki Parsed Corpus of Middle English*, 2nd edition (Kroch and Taylor 1999) and the *Penn-Helsinki Parsed Corpus of Early Modern English* (Kroch,

Santorini, and Delfs 2005), and our dating follows that of the corpora. The final line in each example gives an abbreviated label for the source text followed by the sentence ID from the corpus file. Complete information on the texts from which examples have been taken is given in the Appendix.

⁵We write HAVE and BE in small capitals when referring to the auxiliaries in general, cross-linguistic terms. When what is intended are the specific lexical items of an individual language, we use italics, as in *have* and *be* for English, *haben* and *sein* for German, etc.

⁶Resultatives like (3b) with strictly intransitive verbs are at best marginal in PDE (except with certain lexicalized participles like *gone* and *rotten*) but were unobjectionable through EModE.

⁷We follow Iatridou (2000) in the intentionally vague use of the word ‘convey’ to avoid the issue of whether the counterfactuality is asserted, presupposed, or implicated, as that question is beyond the concerns of this article. See Iatridou (2000), Ippolito (2003) and the literature cited there for discussion.

⁸Specifically, if a verb appears at least once in a corpus with *be*, we include all of its occurrences in that corpus in our data. Otherwise we exclude all of them. This is so that an especially high or low frequency of verbs like *work* or *say* in a particular context will not skew the auxiliary frequencies.

⁹Not surprisingly, the differences between counterfactual and non-counterfactual periphrases here are highly statistically significant. For ME, $\chi^2 = 256.0$, $p \leq .0001$, for EModE, $\chi^2 = 202.6$, $p \leq .0001$

¹⁰The similarly exceptionless appearance of *have* in periphrases below a modal aux-

iliary verb in ME reduces to the counterfactual effect, as we discuss in McFadden and Alexiadou (2006). During this period, all such attested examples, like (i) and (ii), turn out to be past counterfactuals:

- i. But and yf he *wolde haue comen* hyther he myght haue ben here

‘But if he had come here, he might have been here.’ (ReyFx,55.408)

- ii. she *would have com* to you longe or this tim if I would have let her com

‘She would have come to you long before now if I had let her come.’ (JPin,40.69)

Sentences like *He must have come to London* with a non-counterfactual modal above the perfect do not yet appear, so there is no need to consider modal perfects and counterfactual perfects separately.

¹¹Both differences are statistically significant: ME $\chi^2 = 9.9$, $p \leq .005$, EModE $\chi^2 = 7.6$, $p \leq .01$.

¹²These differences are significant. For ME, $\chi^2 = 9.5$, $p \leq .005$. For EModE, $\chi^2 = 7.3$, $p \leq .01$.

¹³If we don’t exclude counterfactuals, a significant spurious preference for *have* appears: *be* only appears in 57.1% of SR negative perfects, versus 80.9% of non-negative ones ($\chi^2 = 7.2$, $p \leq .01$).

¹⁴The differences are significant; for ME $\chi^2 = 58.6$, $p \leq .001$; for EModE, $\chi^2 = 32.8$, $p \leq .001$

¹⁵Data taken from the literature are reproduced with the original information on the textual source.

¹⁶e.g. we have found 16 (non-counterfactual) examples with *through* or *throughout* denoting a path of motion in SR periphrases in our ME and EModE corpora. All 16 use

auxiliary *have*.

¹⁷One such factor is a present participial auxiliary, as in *he approved extremely of your **having come** away* (Drumd,2.4,201.37) or ***being come** to the Towne, I found good ordinary Countrey entertainment* (JoTay,1,128.C2.9). These are claimed by Rydén and Brorström (1987) to favor *have*, but our turned up a mild preference for *be*. See McFadden and Alexiadou (2006) for data and discussion.

¹⁸A parallel existential reading is possible for (12a), i.e. “I have been sick at least once since January”.

¹⁹Only stative and activity verbs can form universal perfects, but these never take *be* in Earlier English. It is also not clear whether the perfect of recent past should be distinguished from the perfect of result. Kiparsky (2002) and others have argued that they should be unified in general, and the few potential perfects of recent past that we have found in the corpora behave in all respects like perfects of result.

²⁰For extensive recent discussion of the distinction and possible diagnostics, see Mittwoch (2008).

²¹Parsons (1990) distinguishes two kinds of result states, “target states” and “resultant states” (see also Kratzer 2000, Anagnostopoulou 2003). The former is the characteristic, independently identifiable and reversible state that something is in after a telic eventuality has applied to it. The latter is simply the state of an eventuality having culminated. Resultant states have been argued (e.g. by Parsons 1990, Kamp and Reyle 1993) to characterize certain meanings of the PDE perfect, but for the perfect of result it seems we need to talk about target states. We don’t get a perfect of result if the target state (my cellphone being lost) no longer holds, even though the resultant state (me

having previously lost my cellphone) by definition still must. As the distinction will not be of further importance, we stick to the simpler term ‘result states’.

²²Such contexts were noted by Fridén (1948), Johannisson (1958), but have not been investigated since.

²³German also forms stative resultatives with intransitives which are entirely parallel to the Earlier English *be* ‘perfects’. Unfortunately, it is difficult to distinguish them from *sein* perfects. Hence we concentrate on the stative passive, where this problem does not arise. Similarly, we do not discuss the PDE stative passive here because it is difficult to separate from the eventive passive.

²⁴(23c) is possible under a so-called ‘job-done’ reading (see e.g. Kratzer 2000, Embick 2004), but this merely strengthens the argument being made here, since such readings coerce a telic interpretation.

²⁵This is in line with Iatridou’s (2000) generalization that a language may use a subjunctive form for counterfactuals, but only if that form is also marked for the past.

²⁶Our analysis is clearest in the PDE translation of this example because of the lexicalized stative resultative use of *gone*. We are proposing that the sentence really meant ‘I think he would *be* gone’ as indicated, not ‘...*have* gone’, and furthermore that (26a) and (26b) have parallel meanings.

²⁷Special thanks are due to Øystein Nilsen and Øystein Vangsnes for providing the Norwegian data.

²⁸The fact that HAVE is also possible here does not contradict our analysis, as an experiential interpretation would also be appropriate in this context.

²⁹Øystein Nilsen (p.c.) offered the following comment on these examples: “It’s as

if the ‘be’ version really wants the result state to hold at the utterance time, while the ‘have’ version doesn’t require that.”

³⁰“I pretty strongly prefer ‘have’, but ‘be’ feels somewhat better than some of the other bad cases” (Øystein Nilsen, p.c.)

³¹Yamaguchi and Pétursson (2003) have analyzed the Modern Icelandic perfect, where the facts appear to be substantially the same. They explicitly argue that Icelandic *hafa* (HAVE) forms experiential perfects, while *vera* (BE) can only form perfects of result, i.e. precisely what we are arguing here for Earlier English. They do not discuss iterative, durative and counterfactual contexts, so we have collected additional data from Icelandic speakers, showing that these require HAVE, as in Earlier English and Norwegian:

- i. Í þessari ferð hefur Sveinn farið frá Hamborg, gegnum Köln, til Stuttgart
in this trip *has* Sveinn gone from H., through C., to S.
‘On this trip, Sven has gone from Hamburg, through Cologne to Stuttgart.’
- ii. Sveinn hefur farið til Stuttgart nokkrum sinnum á síðasta ári
Sven *has* gone to Stuttgart several times in past year
‘Sven has gone to Stuttgart several times in the past year.’
- iii. Ef Sveinn hefði farið til Stuttgart hefði hann getað séð Mercedes-safnið.
if Sven *had* gone to Stuttgart had he been.able seen Mercedes-museum
‘If Sven had gone to Stuttgart, he could have seen the Mercedes Museum.’

We thank Tolli Eythórsson and Gunnar Hrafn Hrafnbjargarson for providing and discussing these data.

³²Auxiliary selection has been reported to be sensitive to similar factors in many other languages. See e.g. Shannon (1995) and Ledgeway (2003) for discussion of

such patterns in Germanic and Romance varieties respectively. It is unclear whether the account we propose here can be directly extended to all of these cases, as the reported restrictions on BE are not always as strong as we have seen here, or are limited to certain verb classes (as Cennamo and Sorace 2007, p. 76 claim for verbs of indefinite change in Paduan).

³³We are thus analyzing this *have* as an auxiliary in the technical sense that it is the pronunciation of a functional head in the tense/aspect system. This may not have been the case in the antecedents of the *have* periphrasis in OE and early ME before the changes that took place around 1350, nor is it the case in modern constructions like *I have my bags packed*. See Section 7 for brief discussion.

³⁴For the assumption of category-neutral roots see Marantz (1997). For the distinction between Voice and v see Pytkänen (2002) and Alexiadou, Anagnostopoulou, and Schäfer (2006). We follow Embick (2004) and Alexiadou and Anagnostopoulou (2008) in having past participial morphology spell out an Asp(ect) head, as it does in the *be* periphrasis. What sort of semantic contribution an Asp head would make in this structure is an open question. The alternative would be to abandon the idea that there is any deeper significance to the participle here and treat it as a syntactically conditioned allomorph of V, as in von Stechow (1999). As this implies a weaker and less interesting claim than the Asp approach, we have not adopted it here.

³⁵Other presentations of the XN can be found in McCoard (1978), Dowty (1979), Iatridou et al. (2003). We discuss von Stechow's version because he is particularly explicit about syntactic structure.

³⁶Specifically, the XN is neither an operator nor a relation between times, but the

restriction for a (possibly covert) quantificational adverb, with the (extended) VP constituting the nucleus. Tenses are treated as referential terms, much like pronouns (Partee 1973). The universal, experiential and other perfect readings arise from the various possible quantificational adverbs. So e.g. a universal perfect like *I have always lived here* has an interpretation along the lines of $\forall t[t \text{ in XN(pres)}][I \text{ live here}(t)]$, i.e. ‘for every time t , such that t is included in the XN of the present, I live here at t ’. An experiential perfect is analogous, but with an existential quantifier. The ability to handle the universal and experiential readings in this unified fashion is one of the main motivations for XN as opposed to a traditional Reichenbachian approach in terms of relations between times (see Klein 1992, von Stechow 1999, Iatridou et al. 2003, for some discussion).

³⁷Indeed, our proposal is compatible with non-XN theories as well, as long as they incorporate a notion of anteriority which can be localized in Perf. Reichenbachian approaches like Klein (1992) satisfy this quite simply in analyzing the perfect in terms of the event time preceding the reference time.

³⁸We are not making any claims here about the nature or exact position of the head that *be* realizes. We label it Cop in place of whatever is the proper analysis of the copula. It cannot just be T, but must be situated somewhere below it, since the copula can occur below finite auxiliaries which we would expect to occupy (or to have passed through) T, as in *You must be tired*. See Bowers (2001) for recent discussion.

³⁹The presence of some type of Asp head is what captures the fact that both periphrases use a past participial form of the main verb. The two types involved must of course be quite different semantically, but it is not uncommon for semantically distinct categories to be collapsed in a single underspecified participial form. See Anagnos-

topoulou (2003), Embick (2004), Alexiadou and Anagnostopoulou (2008) for discussion of other cases where a semantic distinction is reflected by distinct participial forms in one language or set of verbs, but collapsed into a single underspecified form elsewhere.

⁴⁰See Kratzer (2000) for discussion of how this should be formalized. One possibility is that Asp_R existentially binds the event in the denotation of the predicate in its complement, while explicitly passing on a target state argument, i.e. it has a denotation like $\lambda R \lambda s_s \exists e_s [R(s)(e)]$. The predicate R taken as an argument of Asp_R thus has to actually have such a target state argument in its denotation, since otherwise we would have a type mismatch.

⁴¹An example of such a result state coming from an adverbial would be (i):

- i. he is not *ronne* away fro his maister (ReyFx,61.688)

‘He has not run away from his master.’

The verb *run* usually shows up with *have*, because it inherently expresses an activity. Here it can occur with *be* because the adverb *away* and the PP *from his master* can supply a result state – being an escapee.

⁴²The denotation Kratzer proposes for Voice is $\lambda x_e \lambda e_s [\text{Agent}(x)(e)]$, which combines by Event Identification with the denotation of vP . Event Identification is only possible if the vP also has λe_s , i.e. if the event argument is still available for modification. Since Asp_R existentially binds that event argument, Event Identification with Voice fails. See Kratzer (1996, 2000), Embick (2004) for relevant discussion.

⁴³See Iatridou (2000) for an explanation of why the same T element can be interpreted either as past tense or counterfactuality.

⁴⁴Evidence for this comes from sentences like *If I had gone there tomorrow, we would never have met*, what Ippolito (2003) calls ‘Mismatched past counterfactuals’. The first clause looks like a ‘past’ counterfactual, but it’s about something not happening in the future. This makes sense if the formal perfect just sets up an anteriority relationship between the reference time and the event time, and the past morphology just indicates counterfactuality. There is nothing then to explicitly relate these times to the speech time. The reference time presumably defaults to overlapping with the speech time, but adverbial material like *tomorrow* can exceptionally fix it after the speech time as in the example. If past counterfactuals had genuine semantic past tense, we would expect them to always indicate anteriority relative to the speech time, and ‘mismatched past counterfactuals’ would be impossible.

⁴⁵A reviewer asks for clarification of the semantic difference between (35a) and (35b), whether there is a situation where one would be true and the other would not. The truth of (35b) depends on whether you are still in London at the reference time, whereas that of (35a) depends only on whether you came to London at some previous time, independent of how long you stayed afterwards. Because of this, (35a) would not be appropriate in a context where you did in fact come to London but then left, and my ability to assist you depends crucially on you still being in London. (35b), on the other hand, would still be appropriate.

⁴⁶The dip in *be* in the 1250 to 1350 period is due to an unexplained but extreme drop in the frequency of periphrases with *come* (11 examples, versus 71 in the preceding period and 116 in the following).

⁴⁷As a simple indication that this is real, the difference between the first period and

the last is statistically significant with *have* ($\chi^2 = 233.3, p \leq .001$), but not with *be* ($\chi^2 = 5.09 \times 10^{-05}, p \leq 1$).

⁴⁸We have found 93 past participles of *come* with an auxiliary in the OE corpus. All 93 have *be*.

⁴⁹We do not discuss this later change in any detail because no large-scale parsed and annotated corpus like those we used for OE, ME and EModE exists for Late Modern English. One is, however, currently under development at the University of Pennsylvania, so a proper investigation will soon be possible.

⁵⁰For the German perfects we would assume a structure similar to the English *have* perfect, containing an anterior Perf head. The well-known differences between English and German stem from the details of the denotations of the Perf head and probably also (present) T (see e.g. Klein 1992, Pancheva and von Stechow 2004, for specific proposals). Note also that assuming Perf for both *haben* and *sein* perfects does not necessarily mean that the two auxiliaries have identical properties. They could e.g. realize two versions of Perf which yield the same ‘perfect’ semantics when combined with (syntactically or semantically) distinct types of complements.

⁵¹By ‘implicit anteriority’ we mean the kind in a stative resultative. There is no explicit denotation of anteriority, but from the assertion of a result state, one can infer an anterior causing event.

⁵²This would presumably require something more than just the Voice head that introduces agents in normal transitives and unergatives, since this is semantically incompatible with Asp_R as we noted in Section 5.1.

⁵³An analysis along these lines may be correct for the resultatives like (3a) above (*I*

have my bags packed). This could be main verb *have* appearing above a small clause with something like the structure we propose for the perfect of result with *be*. This would explain why, at the reference time, the object must not only be in the relevant result state, but also somehow under the control of the subject (note *It's not here, I have it stored in my office*, but **I have my cellphone lost*). As a reviewer points out, something like this analysis seems to be independently required for many OE examples. However, the same structure cannot be correct for the perfect of result with *have* that we are discussing here, since the latter is clearly distinct from the small clause resultatives (though it may not yet have been in the OE period). For example, the subject control semantics are missing (*I have lost my cellphone* is fine), and the relative order of the participle and the object is reversed.

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	<i>be</i>	<i>have</i>	<i>%be</i>
Past Counterfactuals	3	59	4.8%
All other intransitives	535	68	88.7%

Table 1: ME auxiliary frequency by modality (SR)

	<i>be</i>	<i>have</i>	<i>%be</i>
Past Counterfactuals	6	99	5.7%
All other intransitives	984	365	72.9%

Table 2: EModE auxiliary frequency by modality (SR)

	<i>be</i>	<i>have</i>	<i>%be</i>
Pluperfects	327	23	93.4%
Present perfects	188	32	85.5%

Table 3: ME non-counterfactual present and past periphrases (SR)

	<i>be</i>	<i>have</i>	<i>%be</i>
Pluperfects	369	150	71.1%
Present perfects	530	149	78.1%

Table 4: EModE non-counterfactual present and past periphrases (SR)

		<i>be</i>	<i>have</i>	<i>%be</i>
ME	Negative	12	3	80.0%
	Non-negative	523	65	88.9%
EModE	Negative	58	22	72.5%
	Non-negative	926	343	73.0%

Table 5: Non-counterfactual periphrases (SR), negative vs. non-negative

	ME			EModE		
	<i>be</i>	<i>have</i>	<i>% be</i>	<i>be</i>	<i>have</i>	<i>% be</i>
Infinitives	1	10	9.1%	17	36	32.1%
All others	548	74	88.1%	973	428	69.5%

Table 6: Infinitive and finite periphrases (SR)

Period	Clauses	<i>be</i> periph.	%	<i>have</i> periph.	%
1150-1250	44,050	152	.35	146	.33
1250-1350	22,958	29	.13	116	.51
1350-1420	74,294	223	.30	573	.77
1420-1500	39,737	145	.36	420	1.06
1500-1569	79,756	295	.37	777	.97
1570-1639	94,378	421	.45	1,235	1.31
1640-1710	79,928	276	.35	940	1.18

Table 7: *be* and *have* periphrases as compared to total clauses