Perfects, resultatives and auxiliaries in Early English

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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 seems to be 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 paper we propose one strategy for formulating such explanations.

Consider as a starting point that the temporal-aspectual construction within which auxiliary selection 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 papers collected in Alexiadou,

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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 their perfects.

In this paper we will pursue this strategy in some detail by using it to explain the patterns of auxiliary selection attested in Early English and to understand why these differ from those in German, Italian and other languages.[2] The choice between *have* and *be* in Early 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 realize that the Early English *be* 'perfect' had a rather different semantic and syntactic status than both the Early English *have* perfect and the perfects of the other modern languages with either auxiliary. To the

[2]We use "Early English" as a cover term for Old English (OE, to 1150 CE), Middle English (ME, from 1150 to 1500) and Early Modern English (EModE, from 1500 to 1710). We refer to English as it is currently spoken as Present-Day English (PDE). The changes in the perfect system were completed as recently as 1900, so it would not be sufficiently restrictive to speak of Modern English (which could go back as far as 1500) or even Late Modern English (which would include the 18th and 19th centuries).

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 Early 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

Early English had constructions consisting of the past participle of the main verb plus an auxiliary *have* or *be*, as in 1: [3]

(1) a. as ha þreo **weren ifolen** onslepe... **BE-construction**
when they three were fallen asleep...
'When the three of them had fallen asleep...' (AncRl,II.272.440)

b. ...huanne hi **heþ** wel **yuoȝte** **HAVE-construction**
...when he has wel fought
'...when he has fought well' (Ayenb,252.2315)

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.[4] However, as is well known, English subsequently diverges from these other languages in losing the version with BE. In PDE, *have* is used

[3] Except where otherwise noted, our data 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.

[4] We 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.

to form perfects with all verbs:

(2) a. The three of them **have/*are fallen** asleep.

b. He **has fought** well.

c. We **have eaten** the cake.

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 on older German), resulting in the following more or less standard account. Both the construction 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.[5]

(3) a. I have my bags packed.

i.e. 'I have my bags in a packed state.'

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

[5]Resultatives 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.

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.

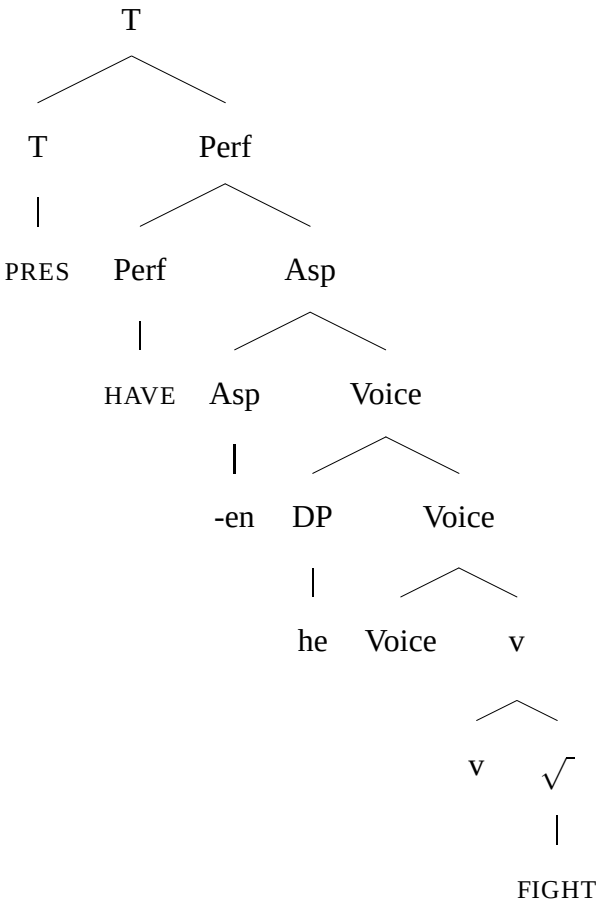
In our research, based on parsed electronic corpora covering the OE, ME and EModE periods, we have found this scenario to be broadly supported in its assumptions about the origin of the perfects, and in its claims about the frequencies of *have* and *be* relative to one another at any given time. However, 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 paper we will present evidence for a revised view of the relevant synchronic systems and diachronic developments which will provide answers for these three questions.

1.2 Our claims

Our central claim about Early English is that the construction with *be* – unlike that with *have* – did not change significantly from OE to EModE. It remained a stative

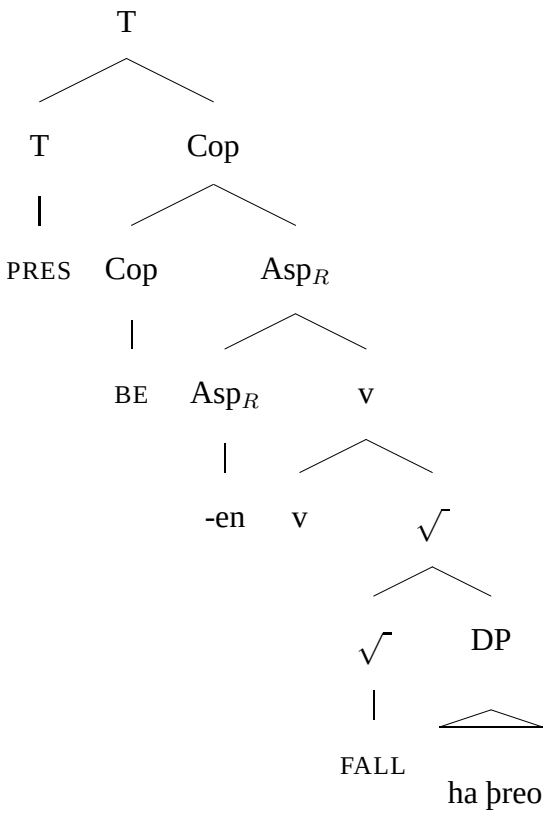
resultative construction with a restricted interpretation and correspondingly restricted use. That with *have*, on the other hand, developed into what we might regard as a full-fledged perfect, with the complete range of interpretations characteristic of the PDE perfect. Structurally, we will adopt 4 for *have* perfects like 1b, where the auxiliary *have* spells out a clause-level Perf head carrying the anteriority semantics required for the experiential, universal and recent past readings of the perfect.

(4)



For *be* perfects like 1a, we propose the structure in 5, which specifically lacks Perf. Auxiliary *be* is nothing more nor less than a normal 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* construction 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 previously been the domain of the morphosyntactic simple past. 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 of the perfect. The distribution of *be* is not stipulated in terms of lexical selection, but falls out of the special semantics of the

structure with *be*. 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 Early 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 Early English perfects, 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 Early English constructions.

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

The main empirical claim of this paper is that the *be* 'perfect' in Early English did not have the same temporal/aspectual interpretation as the *have* perfect. The primary evidence for this claim comes from the rather different distribution of the two constructions during late ME and EModE: while the *have* perfect could apparently show up in all the contexts where it can in PDE, the *be* perfect was heavily restricted. In this section we present the basic data showing the nature of these restrictions, which are essentially those 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, however, we have been able to achieve more precision in our findings. This allows us to define some of the restrictions more tightly and 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 *be* in Early 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.[6] The prototypical members of this category are (past) counterfactual conditionals, both the antecedent clause (i.e. the *if*-clause) as in 6a and the consequent 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.

[6]We 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 paper. See Iatridou (2000), Ippolito (2003) and the literature cited there for discussion.

'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 perfect auxiliaries in Early English is almost 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 paper, we limit our attention to examples with verbs which could potentially occur with *be*, which we indicate by referring to the 'suitable restricted' perfects (henceforth SR).[7] We see that *be* is vanishingly rare in the past coun-

	be	***have***	***%be***
Past Counterfactuals	3	59	4.8%
All other intransitives	535	68	88.7%

Table 1: ME perfect auxiliary frequency by modality (SR)

	be	***have***	***%be***
Past Counterfactuals	6	99	5.7%
All other intransitives	984	365	72.9%

Table 2: EModE perfect auxiliary frequency by modality (SR)

terfactuals. Combining both periods, only 9 of 167 (5.4%) counterfactual 'perfects' use *be*, compared to 77.8% *be* selection in non-counterfactuals.[8] Even verbs like *come*, which otherwise 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 in-

[7]Specifically, 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.

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

stances with *be* listed in the tables have a special status and aren't really counterexamples, so that this counterfactual effect is essentially without exception.[9]

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 seen shown to boil down to the counterfactual effect. One is the pluperfect, 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 perfects are formally pluperfects. Only *If I **had** gone...* can be a past counterfactual. *If I **have** gone...* is a conditional, but cannot 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 perfects are independently more or less likely to use *have* than present perfects, we must ignore the past counterfactuals. If we do so, we find that in ME, the pluperfect **disfavored** *have*, as Table 3 shows. In EModE, as shown in Table 4, the remaining

[9]The similarly exceptionless appearance of *have* with perfects below a modal auxiliary 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.

preference for *have* in the pluperfect relative to the present perfect is small.[10]

	be	*have*	*%be*
Pluperfects	327	23	93.4%
Present perfects	188	32	85.5%

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

	be	*have*	*%be*
Pluperfects	369	150	71.1%
Present perfects	530	149	78.1%

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

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 perfects are counterfactuals, compared to only 8.7% of non-negative clauses. Similarly in EModE, 14.9% of SR negatives are counterfactuals, compared to 7.2% of non-negatives.[11] If we exclude counterfactuals, we get the numbers in Table 5 for the two auxiliaries. In ME, an apparent

		be	*have*	*%be*
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 perfects (SR), negative vs. non-negative

difference between negative and non-negative contexts remains, but is not statistically significant ($\chi^2 = 1.2$, $p \leq .3$).[12] 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.

[10]The difference is statistically significant: ME $\chi^2 = 9.9$, $p \leq .005$, EModE $\chi^2 = 7.6$, $p \leq .01$.

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

[12]If 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 ($\chi^2 = 7.2$, $p \leq .01$).

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 hiȝest degree of trespasis

'. . . 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, but not as marked as that with past counterfactuals.[13] In Section 5.3 we will present additional data on the infinitives and show how

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

Table 6: Infinitive and finite perfects (SR)

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* :[14]

(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 the durative perfects in her corpus use *have*, compared to 54% of non-duratives. Similarly, 78% of iterative perfects have *have*, again compared to 54%

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

[14] Early English data taken from the literature are reproduced with the original source information.

of non-iteratives. Our corpus investigations broadly support these findings.[15]

To summarize, then, in late ME and EModE, past counterfactuals required a perfect with *have*. Perfect 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.[16] 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* 'perfect' as a perfect of result

We have established that the 'perfects' with *be* were distributed differently than those 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* 'perfects' differed semantically, in terms of their temporal/aspectual interpretations. The previous literature on perfects in Early English offers some suggestive remarks on this difference, centering on the distinction between state and action. For example, Kytö (1997) 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]

[15] E.g. we have found 16 (non-counterfactual) examples with *through* or *throughout* denoting a path of motion in SR perfects in our ME and EModE corpora. All 16 use auxiliary *have*.

[16] Another such factor is the participial perfect, 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 were claimed by Rydén and Brorström (1987) to favor *have*, but our searches have turned up a mild preference for *be*. See McFadden and Alexiadou (2006) for data and discussion.

The generalization that we would like to propose is essentially a stronger and more explicit version of this idea:

(10) The distribution of 'perfect' auxiliaries in late ME and EModE:

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 is meant by 10 and then demonstrate that it correctly characterizes the Early 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* marks the relationship between reference time and 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.[17] 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 Early English.[18] The distinction between the two is clear if we consider two kinds of sentences that allow experiential but not perfect of result readings. 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

[17] A parallel existential reading is possible for 12a, i.e. "I have been sick at least once since January".

[18] Only stative and activity verbs can form universal perfects, but these never take *be* in Early English. The few potential perfects of recent past that we have found behave in all respects like perfects of result.

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.[19]

(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 understanding 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* perfect had both experiential and result readings, we claim that the *be* 'perfect' had only the latter. It is easy to find resultative *be* 'perfects', with the result state holding of the subject, like those in 14, and experiential *have* perfects, like those in 15.

(14) a. I. . . wil build againe the Tabernacle of Dauid, which **is fallen** downe. (KJNT,XV,1A.1000)

b. I perceive these honourable Lords. . . **are come** to hear what hath been scattered upon the Wrack of Report. (RalTr,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)

[19] Parsons (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 do 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'.

b. For suche as **hath gone** anye tyme abroade, 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* perfects where the result state holds of the object, as in 16.

(16) a. I **have brought** your Lordship as accomplisht 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 non-resultative 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 perfects 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* perfect 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 an action 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 of *have* with a verb that otherwise appears with *be* which don't fit into any of the categories discussed so far. Several such clauses are neither iterative nor durative, yet are clearly atelic:

(17) a. þei **han gon** all aboute the cytee
they have gone all about the city
'They have walked all around the city.' (ManTr,117.2859)

b. ȝe **haue** in his lande **riden** wiþ 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:[20]

(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

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

met Jesus. Since the result state no longer holds 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* 'perfect' 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 *be* 'perfect': 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 simple (passive) present for the stative passive 20c. In fact, the stative passive has just the kind of resultative meaning we posit for the Early 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 Early English *be* perfects is the sole argument of an intransitive.[21] 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 Early English *be* 'perfect'.

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

(21) Duratives

a. Seitdem hat Erosion die Festung immer weiter zerstört. **(*haben*-perf.)**
since has erosion the fort ever further destroyed

[21] German also forms stative resultatives with intransitives which are entirely parallel to the Early 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.

‘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 (22a and 22b versus 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:[22]

(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 around-ridden
‘They have ridden around in the city.’

[22] 23c is possible under a so-called ‘job-done’ reading (see e.g. Kratzer 2000, Embick 2004), but this actually strengthens the argument being made here, as such readings are telic.

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 Early English *be* 'perfect', while the German *haben* and *sein* perfects pattern with the Early English *have* perfect.

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, a statement about an eventuality that was contrary to fact at a time in the past, as in 25a and 25b.[23] When we take a stative passive and put its auxiliary in the past subjunctive, however, what we get is a contrary-to-fact present state, which is

[23]This 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.

the result of a past event, i.e. a **present** counterfactual. This is the meaning of 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 unambiguously in English. Indeed, its semantics make it rather marked, only appropriate in very specific circumstances.

The parallel with the Early English 'perfects' 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 Early English *be* 'perfects' were semantically similar, we can expect that they would be relatively infrequent in counterfactual contexts. Indeed, in Section 2.1 we showed that *be* is all but absent in Early English past counterfactuals. Still, highly marked is not the same thing as ungrammatical, and 25c is certainly possible in German. The *be* 'perfect' 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 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 a simple past rather than a pluperfect – thus we expect the consequent to be a present counterfactual as well.[24]

Thus we see that, in German, where grammaticality judgments and semantic intuitions are available, a stative-resultative construction is impossible in just those contexts where the Early English *be* 'perfect' did not appear. General perfects, however, work

[24]Our 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.

just fine in these contexts, whether with HAVE or BE. This supports our proposal that the Early English construction 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 Early English *be* 'perfect' 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 HAVE and BE perfects would have clearly distinct temporal-aspectual properties in a single language, as we are claiming for Early 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 Early English.[25] Only HAVE is possible with unergatives (27a) and transitives (27b), but with unaccusatives, either HAVE or BE can appear (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 Early English, we find HAVE with duratives (28a), iteratives (28b) and contexts in-

[25] Special thanks to Øystein Nilsen and Øystein Vangsnes for providing the Norwegian data.

volving the adverb ‘ever’, a strong indicator of experiential perfect interpretation (28c):

(28) a. På denne turen **har/*er** Sven dratt fra Hamburg, via Køln, 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.[26] 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.[27]

(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 Early English. Note, however, that in the special context in 30b, native speakers report an improvement:[28]

(30) a. Hvis Sven hadde/*var dratt til S., kunne han ha sett Mercedes museumet.

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

[27]Øystein 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”.

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

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

b. Hvis Sven hadde/??var dratt til S., kunne T. 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 Early 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 perfects.[29] 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

[29] Yamaguchi 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 Early 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 Early 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.

native-speaker intuitions is the same in Norwegian as in Early English. This provides strong support for our semantic analysis of the Early English data.[30]

5 Formalizing the analysis

In the preceding sections, we have presented evidence to show that the Early English *have* and *be* 'perfects' were **not** just a single temporal/aspectual category, differing only in terms of auxiliary selection. Instead, that with *have* was a more general perfect, while that with *be* was restricted to perfect of result interpretations. We will now propose a formalization of this analysis, further clarifying how it explains the data. We propose that the construction with *have* was like the PDE perfect, containing material at the clausal temporal-aspectual level denoting anteriority to the reference time. This material is what yields experiential perfect readings (and probably also universal perfect readings). The construction 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

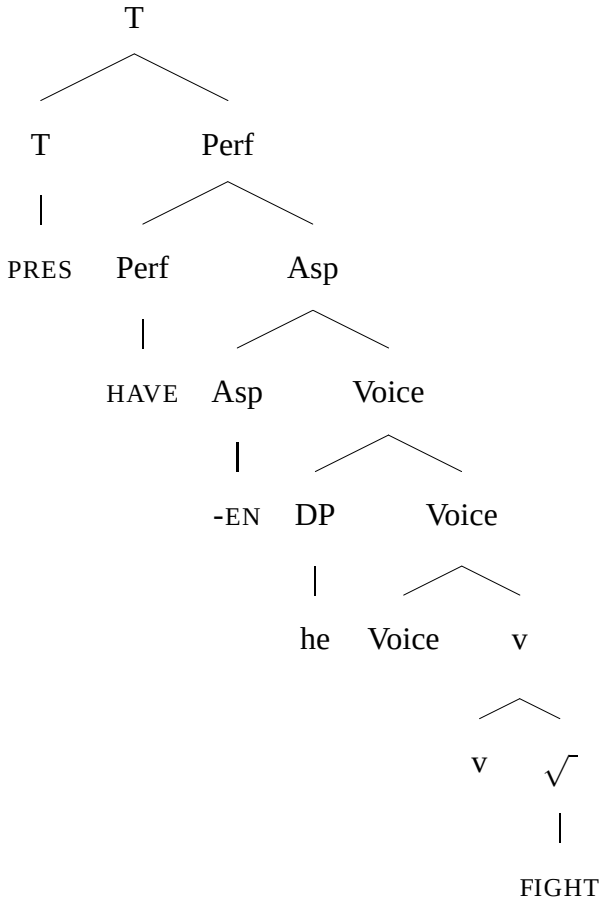
For the *have* perfect we follow several recent works in positing a functional head Perf below T (see e.g. von Stechow 1998, 1999, Iatridou et al. 2003, Pancheva and von Stechow 2004). This is the source of the anteriority semantics and is spelled out as

[30] Auxiliary 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 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).

have. For an unergative perfect like the one in 1b, repeated here as 31a, we can thus propose a (pre-movement) structure like 31b:[31]

(31) a. . . . huanne hi **heþ** wel yuoʒte
. . . when he has wel fought
'. . . when he has fought well' (Ayenb,252.2315)

b.



The assumption of an Asp(ect) head to introduce the participial morphology will be discussed further in Section 7.2. 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.

[31] For the assumption of category-neutral roots see Marantz (1997). For the distinction between Voice and v see Pylkkänen (2002), Alexiadou, Anagnostopoulou, and Schäfer (2006).

von Stechow (1999) develops a version of the Extended Now (XN) Theory.[32] 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.[33] The structure we propose for the *have* perfect 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* perfect contains an element (which we identify as Perf) expressing anteriority to the reference time.[34] The anteriority arises here from the fact that the perfect XN extends into the past from its T-anchored ending point.

The Early English *be* 'perfect', we claim, crucially lacked this Perf head, and thus also the associated anteriority. Given the comparison with German, we will adopt for it a

[32] Other 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 explict about syntactic structure.

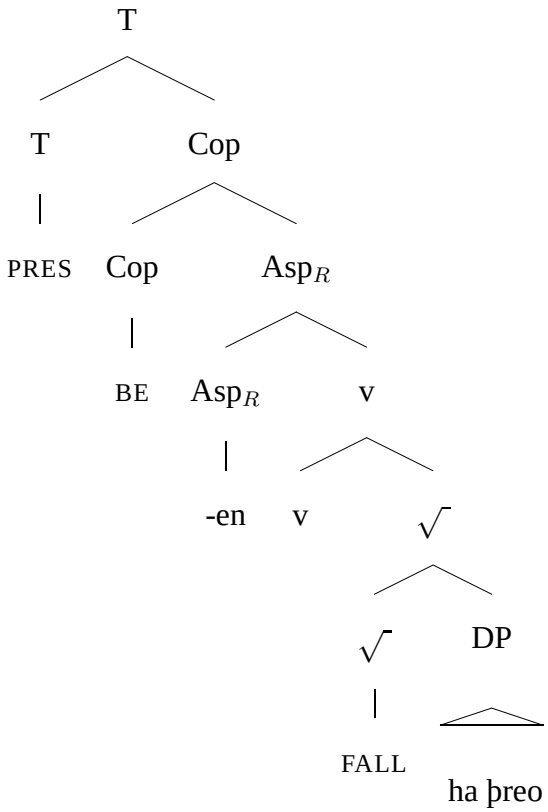
[33] Specifically, the XN is neither an operator nor a relation between times, but the restriction for a (possibly covert) quantificational adverb, with the VP constituting the nucleus. Tenses are treated as referential terms, much like pronouns (Partee 1973). The universal, experiential and other perfect 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 ∀t[t in XN(pres)][I 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 Reichenbachian approach in terms of relations between times (see Klein 1992, von Stechow 1999, Iatridou et al. 2003, for some discussion).

[34] Indeed, 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.

structure similar to what has been proposed in the recent literature for resultative stative 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. as ha þreo **weren** ifolen onslepe…
when they three were fallen asleep…
'When the three of them had fallen asleep…' (AncRl,II.272.440)

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.[35] The Asp$_R$ head (from Embick 2004) produces a state which is the result of an event (see von Stechow 1998, Kratzer 2000, for proposals on the semantic details). Because of this, it

[35]We 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.

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.[36] Hence they are not eligible to appear in this structure unless somehow coerced to yield a result state (potentially by the addition of some adverbial element which supplies its own result state), and thus don't show up in the *be* perfect.

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 a state, and thus the wrong input for agentive Voice, which according to Kratzer (1996) takes an event and yields another event with an agent modifier.[37] 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 Early English *be* 'perfect' didn't yield true past counterfactuals. Recall from Section 2.2 that counterfactuality is encoded in languages like English by finite past tense morphology, we assume in T. (see Iatridou 2000, for an explanation). 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. In order to get a past counterfactual meaning, some additional morphosyntactic

[36] See 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 $\lambda R \lambda s_s \exists e_s [R(s)(e)]$. Predicates without such a state in their denotation would then be formally incompatible with Asp_R, essentially a type mismatch.

[37] The 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.

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 past morphology on the auxiliary supplies the counterfactuality, while the perfect morphosyntax yields the 'pastness'. This works because the *have* perfect 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.[38] The structure we propose for the *be* 'perfect', however, has no source for 'pastness' or anteriority beyond the past morphology in T. But this only occurs once per clause, so 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 then a typical PDE past counterfactual as in 34, with a verb which could have appeared in the *be* 'perfect' in Early English. We give two possible paraphrases. The one in 35a lays it out in explicit terms as the counterfactual of a 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.

(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…

[38]Evidence 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. If past counterfactuals had genuine semantic past tense, we would expect them to indicate anteriority relative to the speech time, which is clearly not the case here.

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

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. E.g. 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 Early English *be* 'perfect' could receive as a counterfactual. The counterfactual-of-perfect meaning paraphrased in 35a, on the other hand, could only be conveyed by the *have* perfect. 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 *be* with perfect infinitives. It turns out that a large number of such clauses in Early 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 Early 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. The fact that the eventualities described by the embedded clauses in 37 are in the past would thus plausibly have needed independent expression. Since Early English (like PDE) had no past infinitive, the only means for doing so would be a perfect infinitive with *have*, which could at least denote anteriority – perhaps to a default reference time simultaneous with the speech time. Lacking anteriority under our analysis, the *be* 'perfect' would not have been appropriate. Crucially, the special context in 37 was the most common use of the perfect infinitive in late ME and EModE. Based on our readings, well over half of the perfect infinitives with *have* reported in Table 6 belong here. The clear preference for *have* in perfect infinitives is thus explained.

5.4 A prediction confirmed: double perfects

The analysis we have presented makes one additional, straightforward prediction. If Early 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 constructions with both are generally assumed to have started out (pre-OE) as statives built around resultative participles. We are claiming that *be* + participle retained this status, while *have* + participle 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 periphrastic perfect 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* construction spreading into new contexts where the simple past had been used until then, i.e. the various non-resultative perfect contexts, while the *be* construction 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* perfects relative to each other, we measure the frequency of each against the total number of clauses, as in Table 7.[39] While *have* perfects became rather more frequent between

Period	Clauses	*be* prf	%	*have* prf	%
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* 'perfects' as compared to total clauses

1150 and 1710, *be* 'perfects' did not retreat, but rather hovered around the same level.[40]

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-periphraistic, 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, 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 an anterior

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

[40]As 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* ($\chi^2 = 5.09 \times 10^{-05}$, $p \leq 1$).

perfect, but still only a stative resultative construction, parallel to what we have said about the *be* 'perfect'. 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 Wihtlande 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 formal perfects with past counterfactual interpretation, nor are there any examples of *have* with *come*, the quintessential (and most frequent) verb which forms perfects of result predicated of the subject.[41] However, once the *have* construction 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*.[42] That is, the spread of *have* to verbs like *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* perfect.

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

[42] 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.

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.[43] It only looks like *have* took 550 years to replace *be* if we misunderstand the initial increase of *have*.

7 Theoretical issues and comparisons

One consequence of our analysis is that the alternation between *have* and *be* in Early 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 interfaces of syntax with semantics and morphology.

7.1 Auxiliary selection, unaccusativity and resultativity

Given our analysis of the Early English facts, we can expect that existing theories of auxiliary selection designed to handle languages like German and Italian will be a poor

[43] We 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.

fit. Indeed, to the extent that the constructions with *have* and *be* were syntactically distinct entity, accounts of auxiliary selection strictly speaking do not apply to it. However, simply excluding the Early 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 Early 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 sophisticated and complicated, as there can be no single, unified theory of auxiliary selection. However, if we can 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 see how they differ from the analysis we are proposing.

The first, going back to Perlmutter (1978), 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, but only 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 in a formal descriptive framework, 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 posited by Sorace. Instead, we claimed that *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 similar effects as 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 be-

tween Asp_R and Voice, as discussed in Section 5.1, and thus falls out from our analysis of the semantics of the *be* 'perfect'. In other cases, we straightforwardly make the right predictions where unaccusativity theories run into complications. For example, the fact that no stative verbs appear in *be* perfects 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* perfect. 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 *ride* do not have target states in their denotations, thus it is expected that they won't appear in the *be* 'perfect' 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 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 takes into account both thematic notions like agentivity and aspectual ones like telicity. Still, for Sorace this has to be essentially 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 Early 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 vP

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 Early English, never *be*.

This means that our proposal for Early English is not intended to directly cover German, Dutch and Italian. In these languages, no semantic differences related to tense or outer aspect have been detected in the perfects with HAVE and BE.[44] The data we discussed in Section 3.3 showed that, at least for the diagnostics relevant for Early 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.[45] Nonetheless, the difference we posit between these languages and Early English is not arbitrary: Early English *be* has a different distribution than German *sein* because the two are syntactico-semantically quite distinct, spelling out different syntactic heads.

7.2 Pieces of the perfect: resultative readings and participles

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 Early En-

[44] **Inner** aspect (Aktionsart) certainly is relevant for auxiliary choice in these languages, e.g. in the alternation found with manner of motion verbs depending on the presence of adverbs relating to telicity.

[45] For the German perfects we would assume a structure similar to the English *have* perfect, containing an anterior Perf head. The 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 mean that the two auxiliaries have identical semantics. They could e.g. realize two versions of Perf which take distinct semantic types as their complements but yield the same 'perfect' semantics.

glish *be* 'perfect' was distinct from the the Early English *have* perfect and both Modern German perfects. The initially disappointing answer is that there is no such thing as a 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. It does seem to be the case that many languages have constructions sharing a non-arbitrary cluster of morpho-syntactic and semantic properties, which one might like to call perfects.

The approach we adopt to deal with this dilemma 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.[46] 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 cover term for 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. In this section we will discuss two of the main issues that the Early English data present for such a theory.

[46] By '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.

A central question for work on the perfect is 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 are available? The literature on these issues is vast (see e.g. Reichenbach 1947, McCawley 1971, McCoard 1978, Dowty 1979, Kamp and Reyle 1993, Klein 1994, von Stechow 1999, Iatridou et al. 2003, Pancheva and von Stechow 2004), 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 Early English *be* 'perfect' could have a resultative interpretation, but no other, while the *have* perfect 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 for the *be* perfect can yield only a resultative interpretation while that for the *have* perfect 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 Early English (like the examples in 16 in Section 3.2) and indeed in PDE. One option would be to claim that resultative *have* perfects are structurally analogous to resultative *be* perfects, with additional material to introduce the external argument. This would 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?

Thus we propose instead that *have* resultatives are structurally identical to other *have* perfects. 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 essentially underspecified anteriority semantics which is compatible with both experiential and perfect of result readings, and to 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 the four readings of the perfect from a single basic denotation (see e.g. von Stechow's 1999 approach, discussed in Section 5.1 above).[47]

Of course this is compatible in an obvious way with the facts of auxiliary choice in Early 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* perfect 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* perfect is incompatible and does not appear. Thus it is reasonable to claim, as we have, that the semantics of the *have* perfect is underspecified but compatible with a perfect of result, whereas that of the *be* perfect explicitly denotes a perfect of result.

A second issue raised by our analysis of Early English is how to relate the participial morphology in the *have* perfect to that in the *be* perfect. The latter, spelling out Asp_R, yields the resultative semantics. The former, on the other hand, makes no obvious contribution, since the anteriority semantics of the perfect is in the Perf head spelled

[47] In fact, while there is some controversy in the literature over whether the universal and experiential readings can be unified, there is remarkably little concern over the perfect of result, which is generally assumed to belong together with the experiential (and perfect of recent past), sometimes under the rubric of 'existential' perfects (again, see Iatridou et al. 2003).

out as *have*. Here again, we have a specific instance of a general challenge for theories of the perfect (see e.g. Wasow 1977, Jackendoff 1977, Lieber 1980, Bresnan 1982, von Stechow 1998, Kratzer 2000, Anagnostopoulou 2003, Embick 2004, Alexiadou and Anagnostopoulou 2008). In German, e.g., the same past participle appears not only in perfects, but also in eventive passives, stative passives and certain attributive uses:

(41) a. Max hat das Fenster **geschlossen**. (perfect)
'Max has closed the window.'

b. Das Fenster wurde **geschlossen**. (eventive passive)
'The window was/got closed.'

c. Das Fenster ist **geschlossen**. (stative resultative passive)
'The window is closed.'

d. das **geschlossene** Fenster (attributive stative resultative passive)
'the closed window

Morphologically, we have here a unified category, not just accidental homophony.[48] From a syntactico-semantic point of view, however, we have a series of disparate environments: active and passive, stative and eventive, predicative and attributive.

The solution we will adopt follows Embick (2004) and Alexiadou and Anagnostopoulou (2008) and is again based on a kind of underspecification. As already indicated in the tree structures 31b and 32b in Section 5, we assume that past participial morphology always spells out an Asp head – hence the morphological unity. There are, however, distinct sub-types of Asp as indicated by the special label Asp_R for the

[48] That is, while there are multiple ways to form past participles in German (choosing from two suffixes and several ablaut patterns, plus a prefix), a given verb uses the same one for all of the above contexts.

be perfect – hence the semantic differences. In fact, there is morphological evidence for fine-grained distinctions in the participle types from other languages. Greek e.g. consistently uses different morphological participles for different kinds of statives (see Anagnostopoulou 2003), and English distinguishes stative resultative participles from all others with certain verbs (e.g. *rotten* vs. *rotted* as discussed by Embick 2004). The analysis of the various participles as sub-types of a single category makes it possible for all of them to be spelled out by the same underspecified exponents as in German (and, for the most part, in English), and at the same time for some of them to be spelled out by distinct exponents in Greek (and in English with certain verbs).[49]

8 Summary

In this paper 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 Early 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. The guiding idea of the theoretical investigation has been that the perfect is not a unified category. It is rather a complex of largely independent syntactic, semantic and morphological pieces with no

[49]The remaining challenge is to identify the syntactic (and semantic) properties that the various past participles have in common. If insufficient justification of this kind can be found for the assumption of an Asp category, the alternative would be to abandon the idea that there is any deeper unity to the participle 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.

cross-linguistically unified identity, and our theory of any part of the complex – like auxiliary selection – should be informed by and profit from this insight.

Let us recall then the three questions we posed in Section 1.1 that were raised by previous descriptions of the developments in perfect auxiliaries in the history of English. Our novel account can be nicely summarized by the answers we can now give. 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* allowed only perfects of result, 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 *be* 'perfects' were never possible in these contexts. In fact, in OE and early ME, no perfects of any kind showed up with such semantics, the simple past being used instead. What changed around 1350 is that the construction with *have* developed experiential perfect semantics and thus first started showing up there, thereby first making the absence of *be* 'perfects' 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* 'perfect' was stable throughout ME and EModE, i.e. up to around 1700. The actual replacement of *be* by *have* was a separate later change, which took at most 200 years and was completed around 1900.

Appendix: Source Texts

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

Abbr.	**Text**	**Corpus File**	**Date**
AncRl	*Ancrene Riwle*	CMANCRIW	c. 1225
Ayenb	*Ayenbite of Inwyt*	CMAYENBI	1340
Behn	Aphra Behn's *Oroonoko*	BEHN	c. 1668
Brut	*The Brut or the Chronicles of England*	CMBRUT3	c. 1400
Cov	Robert Coverte's *A trve and almost incredible report…*	COVERTE	1612
CTMel	*The Tale of Melibee (Canterbury Tales)*	CMCTMELI	c. 1390
Drumd	*Letters of John Drummond*	DRUMMOND	1690
EHat	*Correspondence of Elizabeth Hatton*	EHATTON	1690
EsSt	*The trial of the Earl of Essex*	ESSEXSTATE	1600
Fitzj	Richard Fitzjames' *Sermo die Lune*	CMFITZJA	c. 1495
Fry	John Fryer's *A new account of East India and Persia*	FRYER	1672-81
Farq	George Farquhar's *The beaux stratagem*	FARQUHAR	1707
Fox	*The Journal of George Fox*	FOX	1673-74
Giff	George Gifford's *A dialogue concerning witches…*	GIFFORD	1593
GrChr	*Gregory's Chronicle*	CMGREGORY	c. 1475
Har	Thomas Harman's *A caueat or warening…*	HARMAN	1567-68
JPin	*Letters of Jane Pinney*	JPINNEY	1685-86
JoTay	*All the workes of John Taylor*	JOTAYLOR	1630
KJNT	*Authorized (King James) Version of the Bible, NT*	AUTHNEW	1611
Locke	John Locke's *Directions concerning education*	LOCKE	1685
ManTr	*Mandeville's Travels*	CMMANDEV	c. 1400
MerTal	*A hundred mery talys*	MERRYTAL	1526
More	*The Correspondence of Sir Thomas More*	MORELET2	1533-35
NTWyc	*The New Testament (Wycliffite)*	CMNTEST	c. 1395
Purv	John Purvey's *General Prologue to the Bible*	CMPURVEY	c. 1388
RalTr	*The Trial of Sir Walter Raleigh*	RALEIGH	1600
ReyFx	William Caxton's *History of Reynard the Fox*	CMREYNAR	1481
Vanbr	*The complete works of Sir John Vanbrugh*	VANBR	1696
WycSer	*English Wycliffite Sermons*	CMWYCSER	c. 1400

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