Perfects, Resultatives, and Auxiliaries in Earlier English

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

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

1 Introduction

It is well established that auxiliary selection in periphrastic perfect constructions is characterized by extensive and subtle crosslinguistic variation (see, e.g., Aranovich 2007, McFadden 2007 for recent discussion). 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

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question. However, while existing accounts of the phenomenon have made significant progress in mapping out the space in which such variation is possible, they have largely failed to explain why a given language occupies one particular location in that space and not another. In this article, we propose one strategy for formulating such explanations.

As a starting point, consider that the temporal-aspectual construction within which auxiliary selection usually takes place—the perfect—is anything but a stable and consistent crosslinguistic category. A great volume of work has by now made it clear that there is considerable variation crosslinguistically in the properties of what are plausibly labeled ''perfects'' (for extensive discussion, see Alexiadou, Rathert, and von Stechow 2003). We propose, partly inspired by Iatridou, Anagnostopoulou, and Pancheva (2003), that *perfect* does not refer to a simple category with a universal definition and consistent properties. Rather, it is a cover term for a series of complex constructions that have certain temporal-aspectual pieces in common, but 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 makeup 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 morphosyntactically. This means that we can look for explanations for specific patterns of auxiliary selection in the independently observable properties of the perfect in a given language. That is, two languages will differ in their auxiliary selection at least in part because of differences in the makeup of their perfects.

In this article, we will pursue this strategy in some detail by using it to explain the patterns of auxiliary selection attested in Earlier English and to understand why these differ from the patterns in languages like German and Italian.[1] The choice between *have* and *be* in Earlier English is reminiscent of the choice between the corresponding auxiliaries in the familiar modern languages, but it differs curiously in a series of restrictions placed on the use of *be*. We will argue that these restrictions can be explained once we arrive at the correct understanding of the Earlier English periphrasis with *be*. Crucially, it was syntactically and semantically distinct both from the Earlier English periphrasis with *have* and from the perfects of the other modern languages with either auxiliary.[2] To the extent that this account is successful, it can provide a deeper kind of explanation for crosslinguistic variation than theories that must stipulate rules of selection. In

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

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

the case of Earlier English, we will show that it also allows a more satisfactory account of diachronic developments than has been possible until now.

1.1 Historical Background

Earlier English had periphrastic constructions consisting of the past participle of the main verb plus an auxiliary *have* or *be*, as in (1).[3]

(1) a. I *am come* as ȝe bade me   (*be* periphrasis)
        'I have come as you asked me.'
        (Mirk,75.2015)
    b. he *haþe foghten* wyth þe fend   (*have* periphrasis)
        'He has fought with the enemy.'
        (Mirk,116.3171)

Such constructions are like their formal analogues in languages like German, Dutch, and Italian in the following ways: they are active in voice; they involve at least implicit reference to past or anterior eventualities; and the auxiliary is usually BE with intransitive verbs denoting change of location or change of state, while it is usually HAVE with other intransitives as well as all transitives.[4] However, as is well known, English subsequently diverges from these other languages in losing the version with BE. In PDE, *have* is used to form perfects with all verbs.

(2) a. I *have/*am come* as you asked me.
    b. He *has fought* with the enemy.

   Considerable research has been devoted to the history of the perfect in English (see, e.g., Hoffmann 1934, Fridén 1948, Johannisson 1958, Mustanoja 1960, Traugott 1972, Zimmermann 1972, Kakietek 1976, Rydén and Brorström 1987, Kytö 1997; also Paul 1902 for related discussion of older German), resulting in the following more or less standard account. Both the periphrasis with *have* and that with *be* had their pre-OE origins in stative resultatives, the former with transitives like (3a), the latter with intransitives like (3b).[5]

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[3] Except where otherwise noted, our data and statistics come from the York-Toronto-Helsinki Parsed Corpus of Old English Prose (Taylor et al. 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, crosslinguistic terms. When referring to the specific lexical items of an individual language, we use italics, as in *have* and *be* for English, *haben* and *sein* for German.

[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.
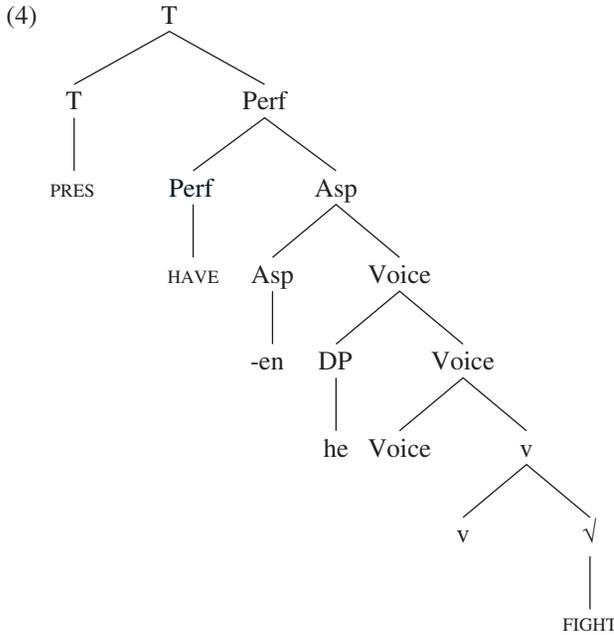
(3) a. I have my bags packed.
      (i.e., 'I have my bags in a state of having been packed.')
   b. My bags are arrived.
      (i.e., 'My bags are in the state of having arrived.')

In the course of OE and early ME, these resultative constructions grammaticalized to become perfects—constructions with anterior temporal-aspectual meanings not restricted to resultativity. In the process, *have* spread to unergative intransitives like *work* (which, being atelic, could not have formed a resultative), while *be* was established as the norm with unaccusatives. Later in ME, around 1350, *have* began to replace *be* with unaccusatives. This process was gradual, involving a period of variation lasting several hundred years, where the relevant verbs could appear with either *have* or *be*. The former appeared earliest and most consistently in modal and irrealis contexts, past and infinitive perfects, and clauses with iterative or durative semantics. From this point onward, *be* lost more and more ground to *have*, finally disappearing by the end of the nineteenth century.
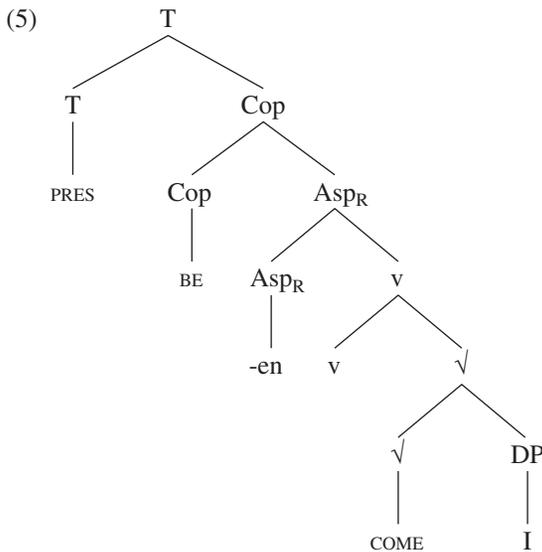
   In our research, based on parsed electronic corpora covering the OE, ME, and EModE periods, we have found this scenario to be broadly supported in its claims about the origin of the perfects and the frequencies of *have* and *be* relative to one another at any given time. However, it raises three questions that 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 become relevant only around the year 1350? That is, if modals, pluperfects, infinitives, iteratives, and duratives favored *have* after this time, why didn't they do so before? Third, why did the change subsequently take so long to go to completion? Was there really just a slow, homogeneous replacement of *be* by *have* over the course of 550 years, or were there identifiable stages in the process, smaller changes adding up to the eventual loss of *be*? In this article, we will present evidence for a revised view of the relevant synchronic systems and diachronic developments, which will provide answers for these three questions about Earlier English and which will lead to a more nuanced understanding of auxiliary alternations and the perfect in general.

1.2 Our Claims

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

(4)

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                        T
            ┌───────────┴───────────┐
            T                      Perf
            │              ┌─────────┴─────────┐
          PRES           Perf                 Asp
                     ┌────┴────┐       ┌────────┴────────┐
                   HAVE       Asp     DP               Voice
                          ┌────┴────┐  │       ┌─────────┴─────────┐
                         -en      Voice he    Voice               v
                                              │             ┌──────┴──────┐
                                              he Voice       v            √
                                                          ┌──┴──┐         │
                                                          v     √       FIGHT
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Asp branches into -en and Voice. Voice branches into DP (he) and Voice. Voice branches into Voice and v. v branches into v and √ (FIGHT).

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

(5)

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                        T
            ┌───────────┴───────────┐
            T                      Cop
            │              ┌─────────┴─────────┐
          PRES           Cop                 Asp_R
                     ┌────┴────┐       ┌────────┴────────┐
                    BE        Asp_R   v
                          ┌────┴────┐       ┌──────┴──────┐
                         -en       v        v            √
                                         ┌──┴──┐        ┌──┴──┐
                                         √     DP      √     DP
                                         │      │
                                       COME     I
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Asp_R branches into -en and v. v branches into v and √. √ branches into √ (COME) and DP (I).

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

Note crucially that this account relates the appearance of specific auxiliaries to independently observable semantic properties. The distribution of *be* is not stipulated in terms of lexical selection, but follows from the special semantics of the structure in which it appears. Our account thus 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 German differs from that in Earlier English, this suggests that its ''perfect'' constructions might have a different syntactic and semantic structure. Conversely, if we find a construction with semantics similar to the semantics of one of the Earlier English periphrases, we predict that it will have a similar distribution, other things being equal. Indeed, comparison with similar data from German and Norwegian, where native-speaker intuitions are available, will provide support for the semantics we propose on purely distributional grounds for the Earlier English constructions.

2 The Distribution of *Be* and *Have* in Earlier English

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

2.1 The Counterfactual Effect

It has long been known that the strongest restriction on the *be* periphrasis in Earlier English comes from modal and/or 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 that 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 (i.e., the *if* clause) as in (6a) and the consequent (i.e., the *then* clause) as in (6b). Also included are clauses like (6c), which have essentially the same semantics as the consequent of a counterfactual conditional but no accompanying overt conditional antecedent. Finally, the category includes counterfactual wishes like (6d).

(6) a. and if they *had come* sooner, they could haue holpen them.
'And if they had come sooner, they could have helped them.'
(Giff,G3V.246)

   b. he *had* never *come* to himself . . . if he had not met with this allay
'He would never have come to himself . . . if he had not met with this distraction.'
(Behn,189.165)

   c. I am satisfy'd . . . else I *had* not *come* to Town at all.
'I am satisfied . . . otherwise I wouldn't have come to town at all.'
(Vanbr,32.10,11)

   d. And he . . . will wish he *had* with the poore peoples children *gon* barefoot.
'And he . . . will wish he had gone barefoot with the poor people's children.'
(Locke,35.46)

The effect of such past counterfactuals on the choice of auxiliaries in ME and EModE is nearly categorical. Table 1 shows the frequency of *be* and *have* in ME, comparing past counterfactuals with all other examples, while table 2 shows the same for EModE. Throughout the article, we limit our attention to examples with verbs that could potentially occur with *be*, which we indicate by referring to the *suitably restricted* periphrastic examples (henceforth *SR*).[7] We find that *be* is vanishingly rare in past counterfactuals. Combining both periods, only 9 of 167 (5.4%) counterfactual periphrases use *be*, compared with 77.8% *be* use in noncounterfactuals.[8] Even verbs like *come*, which always took *be* in OE and early ME, are forced to take *have* in these contexts (as exemplified already in (6a–c)). In fact, we will argue below that the 9 instances with *be* listed in the tables have a special status and are not really counterexamples, so that this counterfactual effect is essentially without exception.[9]

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[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 article. See Iatridou 2000, Ippolito 2003, and the literature cited there for discussion.

[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 noncounterfactual periphrases here are highly statistically significant. For ME, $\chi^2 = 256.0$, $p \leq .0001$; for EModE, $\chi^2 = 202.6$, $p \leq .0001$.

[9] The similarly exceptionless appearance of *have* in periphrases 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.

Table 1

Middle English auxiliary frequency by modality (suitably restricted)

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

Table 2

Early Modern English auxiliary frequency by modality (suitably restricted)

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

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 shown to boil down to the counterfactual effect. One is the pluperfect (i.e., periphrases with past forms of the auxiliary), exemplified with both *be* and *have* in (7).

(7) a. For his tyme *was* not *come* to dyen . . .
         'For his time had not come to die . . . '
         (WycSer,I,414.3405)
     b. For also thei *hadden comun* to the feeste dai
         'For they had also come to the feast day.'
         (NTWyc,IV,40.334)

Consider that all past counterfactual periphrases are formally pluperfects, in Earlier English as in PDE. Only *If I **had** gone* . . . can be a past counterfactual. *If I **have** gone* . . . can be about the past, but it 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 periphrases are independently more likely to use *have* than present ones, we must exclude the past counterfactuals. Doing so, we find that in ME the pluperfect *disfavored* the auxiliary

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(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 noncounterfactual modal above the perfect do not yet appear, so there is no need to consider modal perfects and counterfactual perfects separately.

Table 3
Middle English noncounterfactual present and past periphrases (suitably restricted)

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

Table 4
Early Modern English noncounterfactual present and past periphrases (suitably restricted)

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

have, as table 3 shows. In EModE, as shown in table 4, the remaining preference for *have* in the pluperfect relative to the present perfect is small.[10]

A similar pattern is found with negation. Here we have to account for interference from the counterfactual effect in sentences of the type *If Jones hadn't X, she wouldn't have Y*. Indeed, in our ME corpus 28.6% of SR negative periphrastic examples are counterfactuals, compared with only 8.7% of nonnegative periphrases. Similarly, in EModE 14.9% of SR negatives are counterfactuals, compared with 7.2% of nonnegatives.[11] If we exclude counterfactuals, we get the numbers in table 5 for the two auxiliaries. In ME, an apparent difference between negative and nonnegative contexts remains, but it 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.

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)

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[10] Both differences are statistically significant: for ME, $\chi^2 = 9.9$, $p \leq .005$; for 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 do not exclude counterfactuals, a significant spurious preference for *have* appears: *be* appears in only 57.1% of SR negative perfects, versus 80.9% of nonnegative ones ($\chi^2 = 7.2$, $p \leq .01$).

Table 5
Noncounterfactual periphrases (suitably restricted), negative versus nonnegative

		be	*have*	*% be*
Middle English	Negative	12	3	80.0
	Nonnegative	523	65	88.9
Early Modern English	Negative	58	22	72.5
	Nonnegative	926	343	73.0

As table 6 shows, the effect is clear, though not as marked as that with past counterfactuals.[13] In section 5.3, we will present additional data on the infinitives and show how their behavior can be related to the other contexts favoring *have*.

Iterative and durative semantics, as exemplified in (9a) and (9b), respectively (Kytö 1997), are also associated with a higher-than-usual frequency of *have*.[14]

(9) a. Syns the death of them it *hath* sumwhat *decayed*.   (durative)
       'Since the death of them it has decayed somewhat.'
       (Leland, *The Itinerary of John Leland* I 143).
    b. how wel oftymes *hath* this fel theef *goon* rounde aboute   (iterative)
       this wal
       'how this evil thief has often gone around this wall'
       (Caxton, *History of Reynard the Fox* 11)

Kytö reports that 73% of durative periphrases in her corpus use *have*, compared with 54% of nonduratives. Similarly, 78% of iterative periphrases use *have*, again compared with 54% of noniteratives. Our corpus investigations broadly support these findings.[15]

Table 6
Infinitive and finite periphrases (suitably restricted)

	Middle English			Early Modern English		
	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

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

[14] Data taken from the literature are reproduced with the original information regarding the textual source.

[15] For example, we have found 16 (noncounterfactual) examples with *through* or *throughout* denoting a path of motion in SR periphrases in our ME and EModE corpora. All 16 use auxiliary *have*.

To summarize, then, in late ME and EModE, past counterfactuals required a periphrasis with *have*. Periphrastic infinitives and those with iterative or durative semantics had a clear (but not categorical) preference for *have*. Other factors that have been reported to be relevant either can be subsumed under the counterfactual effect or do not turn out to favor *have* at all.[16] What is needed, then, is a theory of the distribution of the two auxiliaries that can accommodate and hopefully explain these effects.

3 The *Be* Periphrasis as a Perfect of Result

We have established that the periphrasis with *be* was distributed differently than that with *have* in late ME and EModE. The question we must answer now is what difference in the two constructions was responsible for this. Because the clearest restrictions on *be* are semantic, we will propose that the *be* and *have* periphrases differed semantically, in terms of their temporal-aspectual interpretations. The previous literature on perfects in Earlier English offers some suggestive remarks on this difference, centering on the distinction between state and action. For example, Kytö (1997: 31) 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.'' The generalization that we would like to propose is essentially a stronger and more explicit version of this idea.

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

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

3.1 Background on Perfect Semantics

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

(11) When we got home, Randy had been sleeping for three 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 three hours—precedes that. Simplifying a bit, it is the perfect

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

that indicates that the event time is before the reference time, while the past tense on *had* places the reference time before the speech time.

For the PDE perfect, four main interpretations are usually distinguished (see, e.g., McCawley 1971, Iatridou, Anagnostopoulou, and Pancheva 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 that holds over an interval starting some time in the past and continuing up to and including the reference time, so in (12a) the speaker has been sick for the entire time from January up to when she utters 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 the speaker is still sick.[17] The *perfect of result* describes a state holding at the reference time that 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 that 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 that alternated between *have* and *be* in Earlier 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.[19] 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. Instead, (13a) has a clear experiential reading, that there are three instances of the speaker losing the phone, prior to the reference time, in the past year. A perfect-of-result interpretation is also ruled out for (13b), but for a different reason: since *ride around the park* is atelic, it does not yield a good result state; therefore, (13b) must contain an experiential perfect.[20]

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[17] A parallel experiential reading is possible for (12a), namely, '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 Earlier English. It is also not clear whether the perfect of recent past should be distinguished from the perfect of result. Kiparsky (2002) and others have argued that they should be unified in general, and the few potential perfects of recent past that we have found in the corpora behave in all respects like perfects of result.

[19] For extensive recent discussion of the distinction and possible diagnostics, see Mittwoch 2008.

[20] 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 (see, e.g., Parsons 1990, Kamp and Reyle 1993) to characterize certain meanings of the PDE perfect, but for the perfect of result it seems we need to talk about target states. We don't get a perfect of result if the target state (the cellphone being lost) no longer holds, even though the resultant state (the speaker having previously lost the cellphone) by definition still must. As the distinction will not be of further importance, we stick to the simpler term *result states*.

(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

Having given a basic idea of the different readings of the perfect, we can return to the generalization in (10). To repeat, in late ME and EModE, while the *have* periphrasis had both experiential and result readings, we claim that the *be* periphrasis had only the latter, and only where the result state held of the subject. It is easy to find perfects of result with *be*, as in (14), and experiential perfects with *have*, as in (15).

(14) a. I . . . wil build againe the Tabernacle of 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 con-
      science hath made mine hearte hoppe for ioy.
      (More,540.56)
   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* periphrases 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 experiential perfects with *be*, regardless of the main verb involved. As we are dealing with corpora for dead languages rather than native-speaker intuitions for living ones, data on ungrammaticality are not, strictly speaking, available. However, if a verb normally forms a periphrasis with *be*, but consistently appears instead with *have* in a particular context, then we have at least indirect evidence that it was ungrammatical with *be* in that context. This empirical configuration is particularly informative because the choice between *have* and *be* is a binary one: every time *have* appears, *be* has failed to appear. The situation is thus distinct from and more probative than the more general case of a given syntactic construction not appearing in a corpus.

Returning then to the contexts where the *be* periphrasis is restricted, we argue that they are precisely those where a perfect-of-result interpretation would be ruled out or strongly dispreferred

in favor of an experiential perfect. Duratives (for example) are atelic, describing a process rather than its result. In Aktionsart terms, a durative adverbial yields an activity, even when the predicate it combines with would otherwise be an achievement or accomplishment. Iteratives typically imply that the result state of each iteration no longer holds when the next iteration takes place. If Jones comes to London several times in a given period, she clearly cannot also remain in London over the same period. Neither kind of context yields a good result state; thus, a perfect-of-result interpretation is unavailable, and the construction with *be* is simply inappropriate.

That resultativity is the deciding criterion is evidenced by examples that do not fit into any of the categories discussed so far, yet where *have* occurs with a verb that otherwise appears with *be*. Several such clauses have neither iterative nor durative adverbials, 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 that 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.[21]

(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 upon him.'
        (NTWyc,XI,20.1102)

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

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

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

(19) a. many a grete hurte *hath byfallen*
'Many great injuries have occurred.'
(ReyFx,53.369)

   b. Sence I came to yᵉ Tower her *hath com* to or 3 frends
'Since I came to the Tower, two or three friends have come here.'
(EHat,2,158.60)

Like iteratives, these sentences involve a series of independent eventualities that do not together yield a unified result state. They are about what has happened previously, not what is the case as the result of a prior event—clearly experiential perfects. The auxiliary is therefore *have* even though these verbs can otherwise appear with *be*.

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

3.3 Counterfactuals and Stative Resultatives: A German Comparison

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

The difference in the temporal-aspectual semantics is suggested by the English translations: perfects for (20a) and (20b) but a present for the stative passive (20c). In fact, the stative passive has just the kind of resultative meaning we posit for the Earlier English *be* ''perfect.'' It implies that the subject is in the result state of the event described by the main predicate at the reference time. The only difference is that the subject in the German stative passive corresponds to the object of a transitive main verb, while that in the Earlier English *be* periphrasis is the sole argument of an intransitive.[22] None of the other perfect interpretations are possible for the stative passive.

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

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 that are remarkably similar to those on the Earlier English *be* periphrasis.

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

(21) *Duratives*
    a.   Seitdem hat Erosion die Festung immer weiter zerstört.   (*haben* perfect)
           since   has erosion the fort   ever   further destroyed
           'Since then, erosion has destroyed the fort more and more.'
    b.   Seitdem ist die Festung immer weiter verfallen.   (*sein* perfect)
           since   is the fort   ever   further decayed
           'Since then, the fort has decayed more and more.'
    c. ?*Seitdem ist die Festung immer weiter zerstört.   (stative passive)
           since   is the fort   ever   further destroyed
           Intended: 'Since then, the fort has been destroyed more and more.'

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

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

Similarly, atelic predicates happily form perfects, but not stative passives.[23]

(23) *Atelics*
    a.   Sie haben das Pferd gekitzelt.   (*haben* perfect)
           they have the horse tickled
           'They have tickled the horse.'
    b.   Sie sind in der Stadt herumgeritten.   (*sein* perfect)
           they are in the city ridden.around
           'They have ridden around in the city.'
    c. ?*Das Pferd ist gekitzelt.   (stative passive)
           the horse is tickled
           Intended: 'The horse is in a tickled state.'

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

Furthermore, in contexts where the result state no longer holds, the stative passive is infelicitous. In the first clause of (24c), the speaker is asserting that the cellphone is in a lost state; thus, the statement in the second clause that the speaker has 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 turned up again.'
    c. *Mein Handy   ist verloren, und ich habe es dann wieder gefunden.
         my   cellphone is lost   and I   have it then again found
         Intended: 'My cellphone has been lost, and then I've found it again.'

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

    The most revealing parallel comes, however, from the interpretation of counterfactuals. If we take either German perfect and put its auxiliary in the past subjunctive, we get a past counterfactual, conveying that a proposition was contrary to fact at a time in the past, as in (25a) and (25b).[24] When we take a stative passive and put its auxiliary in the past subjunctive, on the other hand, what we get is a contrary-to-fact present state that is the result of a past event: a *present* counterfactual, as in (25c).

(25) *Counterfactuals*
    a. Wenn er gearbeitet hätte . . .
         if   he worked   had.SBJ
         'If he had worked . . .'
    b. Wenn er angekommen wäre . . .
         if   he arrived   were.SBJ
         'If he had arrived . . . '
    c. Wenn er geheilt wäre . . .
         if   he healed were.SBJ
         'If he were (in the state of having been) healed . . . '

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

    The parallel with the Earlier English periphrases here is less obvious but just as strong. As just noted, the past subjunctive of a stative passive in German has a highly marked interpretation. If the Earlier English *be* periphrasis was semantically similar, our prediction was that it should

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[24] 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.

have been relatively infrequent in counterfactual contexts. Indeed, in section 2.1 we showed that *be* is all but absent in Earlier English past counterfactuals. Still, highly marked is not the same thing as ungrammatical, and (25c) is certainly possible in German. The *be* periphrasis should thus have appeared in Earlier English counterfactuals occasionally, when that marked interpretation was the intended one. Recall then that we noted nine 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—that is, precisely parallel to the German example (25c). Consider (26a–c).

(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 that person is an escaped mental patient than to claim that he or she may have escaped from a mental institution at some point in the past. The clearest indication, however, that we are not dealing with normal past counterfactuals comes from example (26c). Here the antecedent clause *yf he had your sowle* must be a present counterfactual (it is formally a simple past rather than a pluperfect); thus, we expect the consequent to be a present counterfactual as well.[25]

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

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[25] 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.

4 A Norwegian Parallel

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

At least some varieties of Norwegian display what looks like the same pattern of auxiliary distribution as Earlier English.[26] Only HAVE is possible with unergatives as in (27a) and transitives as in (27b), but with unaccusatives, either HAVE or BE can appear as in (27c).

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

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

(28) a. På denne turen *har/*er* Sven *dratt* fra Hamburg, via 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?'

HAVE is also preferred when the result state no longer holds. In (29a), the context suggests that Sven is still in Stuttgart; thus, BE is possible.[27] 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.[28]

(29) a. Sven *har/er dratt* til Stuttgart for idag, og fortsetter til Tübingen i morgen.
   'Sven has/is gone to Stuttgart for the day, and will continue on to Tübingen tomorrow.'
   b. Sven *har/?er dratt* til Stuttgart for et par timer, og så fortsatt til Tübingen.
   'Sven has/?is gone to Stuttgart for a couple hours, and then continued on to Tübingen.'

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[26] Special thanks are due to Øystein Nilsen and Øystein Vangsnes for providing the Norwegian data.
[27] The fact that HAVE is also possible here does not contradict our analysis, as an experiential interpretation would also be appropriate in this context.
[28] Øystein Nilsen (pers. comm.) offers 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.''

Finally, as (30a) shows, BE is generally unacceptable in past counterfactuals in Norwegian, as in Earlier English. Note, however, that in the special context in (30b), native speakers report an improvement.[29]

> (30) a. Hvis Sven *hadde*/**var dratt* til Stuttgart, kunne han ha   sett Mercedes
>   if   Sven had/*were gone to Stuttgart could he   have seen Mercedes
>   museumet.
>   museum.the
>   'If Sven had/*were gone to Stuttgart, he could have seen the Mercedes Museum.'
>   b. Hvis Sven *hadde*/??*var dratt* til Stuttgart, kunne Timo ha   spist middag
>   if   Sven had/??were gone to Stuttgart could Timo have eaten dinner
>   med ham akkurat nå.
>   with him right   now
>   'If Sven had/??were gone to Stuttgart, Timo 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 result of going there'. In other words, it encourages precisely the ''present counterfactual of resultative state'' interpretation that we have been discussing for German and Earlier English.

　　We have not found any formal treatment of the Norwegian auxiliary pattern in the literature, but the evidence clearly indicates that it too results from a deep difference in the semantics of the HAVE and BE periphrases.[30] We thus have confirmation that auxiliary alternations can follow

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[29] As Øystein Nilsen (pers. comm.) notes, ''I pretty strongly prefer 'have', but 'be' feels somewhat better than some of the other bad cases.''

[30] 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—precisely what we are arguing here for Earlier English. They do not discuss durative, iterative, and counterfactual contexts, so we have collected additional data from Icelandic speakers, showing that these require HAVE, as in Earlier English and Norwegian.

(i) *Durative*
Í þessari ferð *hefur* Sveinn *farið* frá Hamborg, gegnum Köln,   til Stuttgart.
in this   trip *has* Sveinn gone from Hamburg through Cologne to Stuttgart
'On this trip, Sven has gone from Hamburg, through Cologne, to Stuttgart.'

(ii) *Iterative*
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) *Counterfactual*
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.

the experiential perfect versus perfect-of-result divide. Indeed, we have native-speaker intuitions to establish that this really is the relevant difference. Crucially, the distribution of HAVE and BE in contexts that can be identified independent of native-speaker intuitions is the same in Norwegian as in Earlier English. This provides strong support for our semantic analysis of the Earlier English data.[31]

5 Formalizing the Analysis

In the preceding sections, we have presented evidence that the Earlier English periphrases with *have* and *be* were *not* a unified temporal-aspectual category, differing only in terms of auxiliary selection. Instead, the periphrasis with *have* had a more general semantics, including the experiential perfect, while the periphrasis with *be* was restricted to a perfect-of-result interpretation. We will now propose a formalization of this analysis, further clarifying in the process how it explains the data. We propose that the periphrasis with *have* in late ME and EModE was like the PDE perfect, containing material at the clausal tense-aspect level denoting anteriority to the reference time. This material is what yields experiential perfect readings (and probably also universal perfect readings). The periphrasis with *be*, on the other hand, lacked this material. Instead, it was built around a stative resultative participle combining compositionally with the normal copula.
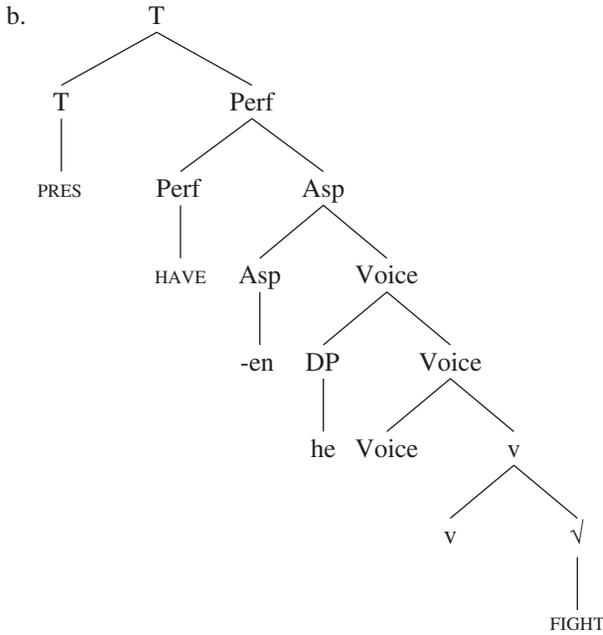
5.1 Structural Details

For the *have* periphrasis, we follow several recent works in positing a functional head Perf below T (see, e.g., von Stechow 1998, 1999, Iatridou, Anagnostopoulou, and Pancheva 2003, Pancheva and von Stechow 2004). This is the source of the anteriority semantics and is spelled out as *have*.[32] For an unergative perfect like the one in (1b), repeated here as (31a), we can thus propose a (premovement) structure like (31b).[33]

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[31] Auxiliary selection has been reported to be sensitive to similar factors in many other languages. See, for example, Shannon 1995 and Ledgeway 2003 for discussion of such patterns in Germanic and Romance varieties, respectively. It is unclear whether the account we propose here can be directly extended to all of these cases, as the reported restrictions on BE are not always as strong as we have shown here, or are limited to certain verb classes (as Cennamo and Sorace (2007:76) claim for verbs of indefinite change in Paduan).

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

[33] For the assumption of category-neutral roots, see Marantz 1997. For the distinction between Voice and v, see Pylkkänen 2002 and Alexiadou, Anagnostopoulou, and Schäfer 2006. We follow Embick 2004 and Alexiadou and Anagnostopoulou 2008 in having past participial morphology spell out an Asp(ect) head, as it does in the *be* periphrasis. What sort of semantic contribution an Asp head would make in this structure is an open question. The alternative would be to abandon the idea that there is any deeper significance to the participle here and to 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.

(31) a. he *haþe foghten* wyth þe fend
'He has fought with the enemy.'
(Mirk,116.3171)

b.

```
                    T
              ┌─────┴─────┐
              T          Perf
              │        ┌───┴───┐
            PRES     Perf     Asp
                      │     ┌───┴───┐
                    HAVE  Asp     Voice
                           │    ┌────┴────┐
                          -en  DP       Voice
                               │      ┌───┴───┐
                               he   Voice     v
                                          ┌────┴────┐
                                          v         √
                                                    │
                                                  FIGHT
```

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

Von Stechow (1999) develops a version of the Extended Now (XN) Theory.[34] 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 anterior to the reference time. The eventuality is then situated within the XN, with temporal and quantificational adverbials determining exactly where.[35] The structure we propose

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[34] Other presentations of the XN theory can be found in McCoard 1978, Dowty 1979, and Iatridou, Anagnostopoulou, and Pancheva 2003. We discuss von Stechow's version because it is particularly explicit about syntactic structure.

[35] Specifically, the XN is neither an operator nor a relation between times, but the restriction for a (possibly covert) quantificational adverb, with the (extended) VP constituting the nucleus. Tenses are treated as referential terms, much like pronouns (Partee 1973). The universal, experiential, and other perfect readings arise from the various possible quantificational adverbs. So, for example, a universal perfect like *I have always lived here* has an interpretation along the lines of $\forall t[t$ in XN(pres)][I live here(t)], that is, 'for every time t, such that t is included in the XN of the present, I live here at t'. An experiential perfect is analogous, but with an existential quantifier. The ability to handle the universal and experiential readings in this unified fashion is one of the main motivations for XN as opposed to a traditional Reichenbachian approach in terms of relations between times (for discussion, see Klein 1992, von Stechow 1999, Iatridou, Anagnostopoulou, and Pancheva 2003).

for the *have* periphrasis in (31b) 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:sec. 6). The Perf head is what is responsible for creating an XN interval extending into the past and is spelled out as auxiliary *have*. The T head situates the ending point of that interval relative to the speech time and is spelled out as the finite tense marking. The ending point of the XN is thus analogous to the Reichenbachian reference time. The most important point for our purposes is that the *have* periphrasis contains an element (which we identify as Perf) expressing anteriority to the reference time.[36] The anteriority arises here from the fact that the perfect XN extends into the past from its T-anchored ending point.

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

(32) a. I *am come* as ʒe bade me
      'I have come as you asked me.'
      (Mirk,75.2015)

b.

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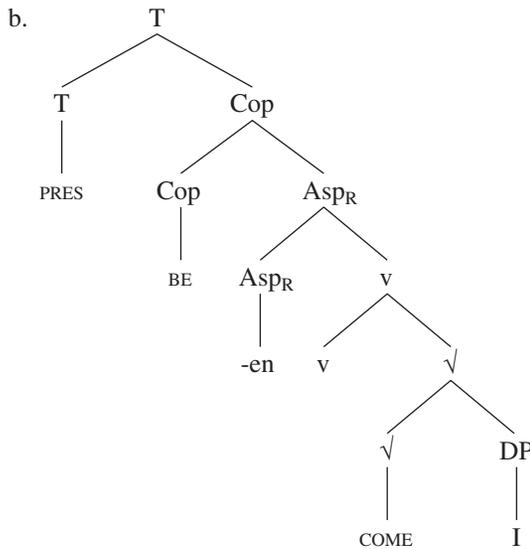
[36] Indeed, our proposal is compatible with non-XN theories as well, as long as they incorporate a notion of anteriority that can be localized in Perf. Reichenbachian approaches like Klein's (1992) satisfy this quite simply by analyzing the perfect in terms of the event time preceding the reference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

Whereas we claim that *have* spells out the Perf head, auxiliary *be* is nothing more nor less than the normal copula that appears with predicate adjectives and nouns.[37] The Asp_R head (from Embick 2004; $R = resultative$) is spelled out as the participial morphology and produces a state that is the result of an event (see von Stechow 1998, Kratzer 2000, for proposals on the semantic details).[38] Because of this, it needs as its complement an eventuality that can produce a result state, a requirement that iteratives, duratives, and atelic predicates in general do not meet.[39] Hence, they are not eligible to appear in this structure and do not show up in the *be* periphrasis, unless they are somehow coerced to yield a result state (potentially by the addition of some adverbial element that supplies its own result state).[40]

Transitives and unergatives are ruled out by an incompatibility between Asp_R and the Voice head that introduces external arguments. The output of Asp_R is stative, and thus the wrong input for agentive Voice, which according to Kratzer (1996) takes an event and yields another event with an agent modifier.[41] So Voice cannot appear above Asp_R. Similarly, the output of Voice (an event) is the wrong input for Asp_R (which wants an event *plus* a state), so a structure with Asp_R above Voice is equally impossible.

5.2 Explaining the Counterfactual Effect

This analysis allows us to be more explicit about why the Earlier English *be* periphrasis did not yield true past counterfactuals. Recall from section 2.2 that counterfactuality is encoded in languages like English by finite past tense morphology, which we assume spells out material in T. Crucially, a clause that is formally a simple past, like the first one in (33a), can in principle be

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[37] 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; instead, it must be situated somewhere below T, since the copula can occur below finite auxiliaries that would be expected to occupy (or to have passed through) T, as in *You must be tired*. See Bowers 2001 for discussion.

[38] The presence of some type of Asp head is what captures the fact that both periphrases use a past participial form of the main verb. The two types involved must of course be quite different semantically, but it is not uncommon for semantically distinct categories to be collapsed into a single underspecified participial form. See Anagnostopoulou 2003, Embick 2004, and Alexiadou and Anagnostopoulou 2008 for discussion of other cases where a semantic distinction is reflected by distinct participial forms in one language or set of verbs, but collapsed into a single underspecified form elsewhere.

[39] 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; that is, it has a denotation like $\lambda R \lambda s_s \exists e_s[R(s)(e)]$. The predicate R taken as an argument of Asp_R thus has to actually have such a target state argument in its denotation; otherwise, a type mismatch would result.

[40] An example of such a result state coming from an adverbial would be (i).

(i) he is not ronne away fro his maister
    'He has not run away from his master.'
    (ReyFx,61.688)

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

[41] The denotation Kratzer proposes for Voice is $\lambda x_e \lambda e_s[Agent(x)(e)]$, which combines by Event Identification with the denotation of vP. Event Identification is only possible if the vP also has λe_s, that is, 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 and Embick 2004 for relevant discussion.

interpreted as past or as counterfactual—but not as both.[42] In order to get a past counterfactual meaning, some additional morphosyntactic material is necessary. What we get is formally a pluperfect, as in (33b).

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

In such instances, the T material spelled out as past morphology on the auxiliary supplies the counterfactuality, while the perfect morphosyntax yields the ''pastness.'' This works because the *have* periphrasis has an interpretation that, although distinct from the simple past, does involve anteriority. What we refer to as ''past counterfactuals'' are thus more properly counterfactuals of anterior perfects.[43] The structure we propose for the *be* periphrasis, however, has no source for ''pastness'' or anteriority beyond a past T. But on the assumption that T only occurs once per clause, we get either past or counterfactual, not both. If the latter, then in strictly compositional fashion the structure produces the counterfactual of a result state reading that we saw in (26a–c).

Consider a typical PDE past counterfactual as in (34), with a verb that could have appeared in the *be* periphrasis in Earlier English. We give two possible paraphrases. The one in (35a) lays it out in explicit terms as the counterfactual of an experiential perfect—that is, as 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.[44]

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

(35) a. If it were the case that at some previous time you came to London . . .
        b. If it were the case that you were now in London as a result of coming here . . .

As the PDE *have* perfect allows a kind of perfect-of-result interpretation, it can be used (with finite past morphology) when the reading in (35b) is intended. We submit, however, that in the vast majority of cases where the PDE *have* perfect is used counterfactually, it is the reading in (35a) that is intended; in other words, this is the preferred interpretation for a sentence like (34).

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[42] See Iatridou 2000 for an explanation of why the same T element can be interpreted either as past tense or as counterfactuality.

[43] 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. The reference time presumably defaults to overlapping with the speech time, but adverbial material like *tomorrow* can exceptionally fix it after the speech time as in the example. If past counterfactuals had genuine semantic past tense, we would expect them to always indicate anteriority relative to the speech time, and ''mismatched past counterfactuals'' would be impossible.

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

We can draw out the (35b) reading, but it takes a certain kind of context. For example, we imagine that it is being said on the telephone by someone in London to someone in Manchester and change the details of the consequent clause as in (36).

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

The counterfactual-of-result interpretation indicated in (35b) is thus available, but marked and uncommon. Our analysis implies that it is only this marked interpretation that the Earlier English *be* periphrasis could receive as a counterfactual. The counterfactual-of-perfect meaning paraphrased in (35a), on the other hand, could only be conveyed by the *have* periphrasis. Thus, speakers were obliged to use that construction, even with verbs like *come*, when that was the meaning they intended. Assuming that they had more or less the same sorts of things to say as speakers of PDE, this explains why ''perfect'' clauses with counterfactual semantics appear overwhelmingly with *have* in the corpora.

5.3 Perfect Infinitives

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

(37) a. for he was commaundyd to *have londyd* at Calys by the kynge
        'For he was commanded to land at Calais by the king.'
        (GrChr,206.1781)
     b. she was rigged and ready in all points to *haue gone away*
        'She was rigged and ready in all points to go away.'
        (Cov,5.53)

In PDE, the perfect infinitive is used when the eventuality of the nonfinite 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 nonperfect infinitives.

Why Earlier English had perfect infinitives in such cases is not entirely clear (see Visser 1963.III.2:2222ff., for data and discussion). We can guess that, at this stage of the language, the reference time of embedded infinitives was not (always) fixed by the matrix clause (see also Los 2005). The fact that the eventualities described by the embedded clauses in (37) are in the past would thus plausibly have needed (or allowed) independent expression. Since Earlier English (like PDE) had no past infinitive, the only means for expressing this situation would be to use the *have* periphrasis, which could at least denote anteriority—perhaps to a default reference time simultaneous with the speech time. Lacking anteriority under our analysis, the *be* periphrasis would not have been appropriate. Crucially, the special context in (37) was the most common use of the infinitive periphrasis in late ME and EModE. On the basis of our readings, well over half of the examples with *have* reported in table 6 belong here. The higher frequency of the *have* periphrasis relative to the *be* periphrasis in the infinitive is thus explained.

5.4 A Prediction Confirmed: Double Perfects

The analysis we have presented makes one additional, straightforward prediction. If Earlier English *have* and *be* spelled out distinct syntactic categories, we might expect them to cooccur. That is, 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 eight examples of just this type in our corpora.

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

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

6 Retelling the History

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

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

We find evidence for this if, instead of measuring the frequency of *have* and *be* periphrases relative to each other, we measure the frequency of each against the total number of clauses, as in table 7.[45] While the *have* periphrasis did become rather more frequent between 1150 and 1710, the periphrasis with *be* did not retreat; rather, it hovered around the same level.[46]

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

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

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

Table 7
Be and *have* periphrases as compared with total clauses

Period	Clauses	*Be* periphrasis	%	*Have* periphrasis	%
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

(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, vol. II:805), ''[U]nreality in OE is timeless; unlike Latin and MnE [PDE], OE does not distinguish grammatically between unreality in the past, present, or future.'' Presumably, this was because the construction with *have* was not yet a perfect expressing anteriority, but still only a stative resultative construction, parallel to the *be* periphrasis. If so, then the deficiency lay not in anything specific to counterfactuals, but in the (in)ability to express embedded anteriority. That this is correct is indicated by the fact that OE had nothing like a perfect infinitive (see Mitchell 1985, vol. I:388ff.) and also lacked a consistent distinction between the simple past and the pluperfect. Mitchell (1985, vol. I:247–252) discusses in detail 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 geond
     on those days   were   on Wightland three women the two were   blind through
     nigon geara fec, and þæt þrydde ne *geseah* þære sunnan leoht næfre
     nine years' time and the third   not saw   the   sun's light never
     (ÆLS 21.156)
     'In those days there were three women on the Isle of Wight. Two of them had been blind for nine years, and the third had never seen the light of the sun.'

Note, then, that during the OE and early ME periods, there are no periphrastic constructions with past counterfactual interpretation, nor are there any examples of the *have* periphrasis with *come*, the quintessential (and most frequent) verb that forms perfects of result predicated of the subject.[47] However, once the *have* periphrasis developed into an anterior perfect around 1350, it came to be used to clearly mark past counterfactuals, irrespective of the main verb involved. Not coinciden-

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

tally, such past counterfactuals constitute the earliest examples of *have* occurring with verbs like *come*. In particular, the first 14 examples of *have* with *come* in our corpora occur in the period between 1350 and 1420 (alongside 97 with *be*), and 9 of those 14 are past counterfactuals. That is, the spread of *have* with *come* is simultaneous with the spread of the periphrastic past counterfactual. Crucially, *have* is not pushing into former *be* territory here. Again, past counterfactuals were uniformly expressed by the simple past before this time, never by the *be* periphrasis.

The realization that *be* was not actually receding in late ME and EModE helps explain why it held on for several centuries after *have* began to increase in frequency 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, that is, circa 1700–1900.[48] It only looks like *have* took 550 years to replace *be* if the initial increase of *have* is misinterpreted.

7 Theoretical Issues and Comparisons

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

Given our analysis of the Earlier English facts, we can expect that existing theories of auxiliary selection designed to handle languages like German and Italian will be a poor fit. Indeed, to the extent that the periphrases with *have* and *be* were syntactically distinct in the way we propose, accounts of auxiliary selection strictly speaking do not apply. However, simply excluding the Earlier English data is not an interesting strategy, and we think that something can be learned from examining why 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 into why languages vary in the ways that they do (see, e.g., McFadden 2007 and 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 crosslinguistically. There is good evidence, however, to reject this assumption (see, e.g., Alexiadou, Rathert, and von Stechow 2003), and the data from Earlier English are particularly clear in this regard. Once we take seriously the conclusion that the ''perfect'' is syntactically and semantically heterogeneous, we must fundamentally alter the way we attempt to explain patterns of auxiliary alternation. Our

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[48] 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.

analyses must be more nuanced, as there can be no single, unified theory of auxiliary selection. However, if we can identify and make reference to distinctions in the properties of the perfect, we can hope for better empirical coverage and for deeper explanation of crosslinguistic variation. All other things being equal, two languages will differ in their auxiliary patterns not because of random variation, but because their perfects are somehow different.

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

A second approach is taken by Sorace (2000, and much subsequent work), who proposes that auxiliary selection is determined in terms of a hierarchy of semantically defined classes of intransitive verbs, her Auxiliary Selection Hierarchy (ASH). Verbs tend more or less strongly to select HAVE or BE depending on where they fall on the hierarchy. Nonmotional, 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 crosslinguistic variation and change, something that has been notoriously problematic for unaccusativity theories.

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

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

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

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

This of course means that our proposal for Earlier English is not intended to directly cover German, Dutch, and Italian. In these languages, no differences have been detected in the perfect semantics available with HAVE and BE. The data we discussed in section 3.3 showed that, at least for the diagnostics relevant for Earlier English, German *haben* and *sein* perfects consistently pattern together and contrast with the stative passive. It is thus reasonable to continue to speak of a single perfect.[49] Nonetheless, the difference we posit between these languages and Earlier English is not arbitrary: Earlier English *be* has a different distribution than German *sein* because the two are syntacticosemantically quite distinct, spelling out different syntactic heads.

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

The approach to this dilemma that we favor is inspired most directly by Iatridou, Anagnostopoulou, and Pancheva (2003). The idea is that the perfect is not a simple category with a universal definition and consistent properties; rather, *perfect* is a cover term for a wide range of complex constructions that share a similar makeup. What unifies perfects is that they involve multiple

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

pieces related to syntacticosemantic levels of tense, aspect, and potentially even Aktionsart, and convey either explicit or implicit anteriority.[50] What distinguishes among the various types of perfect is the presence or absence of specific pieces, the precise specification and interpretation of those pieces, and how the syntacticosemantic pieces map onto morphosyntactic ones. Perfect is then neither a primitive of the theory nor a category that has a single precise definition in terms of such primitives. Rather, we can understand it from a methodological perspective as a class of data for which a unified (if perhaps not uniform) account is desirable. The similarities among the various perfects are sufficient that we would like an explanation of how they arise, and a complete theory of tense and aspect can be expected to make possible a systematic account of these similarities as well as the differences. We will consider here one of the issues that the Earlier English data present for such a theory.

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

We have said that the Earlier English *be* periphrasis could have a resultative interpretation, but no other, while the *have* periphrasis had at least the experiential reading in addition to the resultative. We have explicitly tied this semantic difference to a syntactic one by positing distinct structures for the two constructions, showing how the structure with *be* can yield only a resultative interpretation while the structure with *have* can yield an experiential one. This raises the important question of how we should analyze the perfects of result we do find with *have* with transitives and unergatives in Earlier English (like the examples in (16)) and indeed in PDE. One option would be to claim that the resultative *have* periphrasis is structurally analogous to the resultative *be* periphrasis, but with additional material to introduce the external argument.[51] This could account for the semantic parallel with the *be* examples, but it raises a difficult morphosyntactic problem. Where does the *have* come from if no Perf head is present?[52]

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[50] 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.

[51] This would presumably require something more than just the Voice head that introduces agents in normal transitives and unergatives, since this is semantically incompatible with Asp$_R$ as we noted in section 5.1.

[52] An analysis along these lines may be correct for the resultatives like (3a) (*I have my bags packed*). This could be main verb *have* appearing above a small clause with something like the structure we propose for the perfect of result with *be*. This would explain why, at the reference time, the object must be not only in the relevant result state, but also somehow under the control of the subject (note *It's not here, I have it stored in my office*, but **I have my cellphone lost*). As a reviewer points out, something like this analysis seems to be independently required for many OE examples. However, the same structure cannot be correct for the perfect of result with *have* that we are discussing here, since the latter is clearly distinct from the small clause resultatives (though it may not yet have been in the OE period). For example, the subject control semantics are missing (*I have lost my cellphone* is fine), and the relative order of the participle and the object is reversed.

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

Of course, this is compatible in an obvious way with the distribution of the two periphrases in Earlier English. With *have*, the question of whether there is a result state that continues to hold at the reference time is irrelevant, as the *have* periphrasis will be compatible either way. This point is only interesting because it is clearly distinct from what we find with *be*. When there is no appropriate result state or the result state no longer holds at the reference time, the *be* periphrasis is incompatible and does not appear. Thus, it is reasonable to claim, as we have, that the semantics of the *have* periphrasis are underspecified but compatible with a perfect of result, whereas the semantics of the *be* periphrasis explicitly denote a perfect of result.

8 Summary

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

Our novel account of the developments in the periphrastic constructions in the history of English can be conveniently summarized in terms of the three questions we posed in section 1.1. First, why was the spread of *have* after 1350 favored by modal and irrealis contexts, past and infinitive perfects, and clauses with iterative or durative semantics? We have argued that all of these contexts are either inconsistent with or uncommon with a perfect-of-result interpretation. Since auxiliary *be* formed only perfects of result built around an Asp_R head, it was dispreferred or impossible in those contexts. Second, why should these factors have become relevant only around the year 1350? We have shown that the *be* periphrasis was never actually possible in these contexts. In fact, in OE and early ME, neither kind of periphrasis could show up with such semantics, the simple past being used instead. What changed around 1350 is that the periphrasis

with *have* developed experiential perfect semantics—that is, *have* first started spelling out the Perf head—and thus first started showing up in these contexts. This is what first made the absence of the periphrasis with *be* conspicuous. Third, why did the replacement of *be* by *have* take something like 550 years to go to completion? As our answer to the previous question makes clear, 1350 was not actually the start of the loss of *be*, but the start of an expansion of *have* at the expense of the simple past. Indeed, we have given quantitative evidence that the frequency of the *be* periphrasis was stable throughout ME and EModE, that is, up to around 1700. The actual replacement of *be* by *have* was a separate and later change, which took at most 200 years and was completed around 1900.

Our analysis is crucially based on the premise that the periphrases with *have* and *be* in Earlier English were not just two versions of a single temporal-aspectual category with different auxiliaries chosen on the basis of properties of the main predicate. Rather, they represented two structures that were syntactically and semantically distinct from each other quite independent of whatever verbs, arguments, and adverbial material might appear below. If we are correct on this point, then we have furnished additional evidence that the perfect cannot be regarded as a unified category. Rather, it is a complex of independent syntactic, semantic, and morphological pieces that tend to cooccur but have no crosslinguistically unified identity. What we hope to have shown is that theories of the subparts of this complex—here in particular the distribution of auxiliaries—not only must be informed by but also can profit from this insight.

Appendix: Source Texts

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

Abbr.	Text	Corpus file	Date
Behn	Aphra Behn's *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
Farq	George Farquhar's *The beaux stratagem*	FARQUHAR	1707
Fitzj	Richard Fitzjames's *Sermo die lune*	CMFITZJA	c. 1495
Fox	*The journal of George Fox*	FOX	1673–74
Fry	John Fryer's *A new account of East India and Persia*	FRYER	1672–81
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
JoTay	*All the workes of John Taylor*	JOTAYLOR	1630
JPin	*Letters of Jane Pinney*	JPINNEY	1685–86
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
Mirk	*Mirk's festial*	CMMIRK	a. 1415
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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