

On the disappearance of the BE perfect in Late Modern English

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ABSTRACT

Previous work on auxiliary selection in the history of English has revealed that perfect-like constructions in earlier stages of the language were quite distinct from those in the modern language, and furthermore that important changes in the construction with *have* around 1350 rendered it quite distinct semantically and syntactically from the one with *be*. While this led to a marked expansion of perfects with *have*, it did not effect a decrease in those with *be*, which remained quite stable up to around 1700. The current paper presents research based on more recently available corpus data, exploring what happened in the period after 1700, when the construction with *be*, which is no longer found in the contemporary language, finally did begin to recede. The most straightforward finding is that the inflection point of this change can now be dated to around the year 1800. Evidence is then presented showing that, contrary to appearances, the loss of *be* does not seem to be related to increasing lexical restrictions on the perfect construction. Finally, the mechanics of the change and its relevance for the syntactic distribution of participles are discussed, along with arguments that what underlies the loss of the *be* perfect is actually a restriction on the kinds of VPs that can build stative-resultative participial structures in the language.

KEYWORDS

auxiliary selection, perfect, history of English, participles, resultatives

1. Introduction

Developments in the perfect and perfect-like auxiliaries in the history of English have been the subject of a great deal of study (see e.g. Hoffmann, 1934; Fridén, 1948; Johannisson, 1958; Mustanoja, 1960; Traugott, 1972; Zimmermann, 1972; Kakietek, 1976; Rydén and Brorström, 1987; Kytö, 1997; McFadden and Alexiadou, 2006, 2010). The broad patterns, including comparisons with the other Germanic and the Romance languages are by now rea-

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sonably well known — up to a point. The current state of the art can be summarized as follows. Early work, using a mixture of traditional methods and various different corpora, attained very good descriptive coverage of the auxiliary patterns. In a project dedicated to the topic, McFadden and Alexiadou (2006, 2010) were able to improve on this — both quantitatively and qualitatively — by using more recent parsed and annotated corpora. However, at the time of that project, the relevant series of corpora — produced by a group of researchers primarily at the University of Pennsylvania and the University of York — only covered the written history of English up to 1710. At that point, the perfect auxiliary system of Present Day English (after ca. 1915, henceforth PDE) was far from being in place. As a result, there were still very important developments to come in the perfect auxiliaries that Alexiadou and McFadden were not able to cover.

Fortunately, that situation has improved in the intervening years. In 2010, the next corpus in the series, the *Penn Parsed Corpus of Modern British English* (Kroch, Santorini, and Dier-tani, 2010) was released, covering the period from 1707 to 1913. Using that corpus, I have thus begun an investigation of the further development of the perfect auxiliaries and the establishment of the PDE system. This paper presents the first set of results from that investigation, along with some discussion of what those results can potentially tell us about the relevance for the observed changes of the participial structures and about their proper theoretical treatment.

2. Background on perfect auxiliaries in the history of English

Unlike the modern language, earlier stages of English had what look like periphrastic perfects with auxiliary *be*, in addition to those with *have*, as the Middle English (1150 to 1500, henceforth ME) examples in (1) show:²

- (1) a. as ha þreo **weren** ifolen onslepe...
 when they three were fallen asleep...
 ‘When the three of them had fallen asleep...’ (AncR1,II.272.440)
- b. ... huanne hi **heþ** wel yuohte
 ... when he has wel fought
 ‘... when he has fought well’ (Ayenb,252.2315)

The origins of these periphrastic constructions predate the earliest records of the language, but they are reasonably clear. Both the version with *have* and the one with *be* apparently go back to simple stative-resultative constructions, which were built on the regular stative-resultative meaning of the past participle. In the case of *have*, the participle was of a transitive verb, the target state holding of the object, while with *be* the participle was of an (unaccusative) intransitive, the state holding of the subject. As we might expect for grammaticalization sources, they presumably involved the regular functions of *be* as a copula and *have* as a possessive, as illustrated using PDE forms in (2) and (3), respectively (note that (2) is not actually possible as it stands in PDE, hence the (*)).

²Middle English examples are taken from Kroch and Taylor (1999), Old English examples from Taylor et al. (2003). Information about the source is given following the format described in McFadden and Alexiadou (2010).

- (2) (*) My bags are arrived.
 ‘My bags are in a state of having arrived.’
- (3) I have my bags packed.
 ‘I have my bags in a state of having been packed.’

In the course of Old English (to 1150, henceforth OE) and early ME, both constructions seem to have developed more or less in parallel. They were not yet perfects, and their frequency was quite low, as befits their rather particular semantics. Indeed, there are several examples of simple past forms in OE and early ME where in PDE a perfect would be expected or even required (see Mitchell, 1985, vol. I, p. 247-252 for a collection of examples with discussion). In (4) for example, it is clear from the context that the ‘gaining’ is crucially anterior to the ‘bringing’ event, and thus in PDE we would expect a pluperfect in the relative clause, but the OE original manages with a simple past:

- (4) buton þæt hi on heofena heanessum gebrohton eal þæt hi on eorþan
 outside that they on heaven’s highnesses brought all that they on earth
 begeaton þurh Godes fultum. (BIHom 53.25)
 gained through God’s help
 ‘... unless they brought to heaven all that they had gained through God’s help.’

During the ME period, more specifically around the year 1350, a clear change occurs in the periphrasis with *have*. There is a sudden jump in its frequency, as a result of which it quickly becomes considerably more common than the version with *be*. Crucially, *have* starts showing up for the first time in periphrasis with prototypical unaccusative verbs like *come* that had previously appeared only with *be*. (5) is a clear example of this type:

- (5) 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)

During the ensuing period, we find what looks like variation between *have* and *be* in examples such as these, and there is a long tradition of careful empirical work that has uncovered a series of conditions on this variation (see in particular Fridén, 1948; Johannisson, 1958; Rydén and Brorström, 1987; Kytö, 1997; McFadden and Alexiadou, 2006). In essence, what this research has identified is a series of factors in the presence of which *have* was, to greater and lesser degrees, preferred over *be* at this time. These factors include past counterfactual modality, iterative, durative and atelic semantics, as well as contexts with telic eventualities, where the target state has been undone, so that it no longer holds at the reference time. The early work in this tradition is of a remarkably high quality, and succeeded in identifying most of the relevant factors that influenced the appearance of *have*. Nonetheless, that work left a number of questions open, in particular why it is precisely this set of factors that favored *have* and not some slightly different collection, i.e. what defining characteristic they all have in common and how it interacts with the periphrastic constructions.

This is where McFadden and Alexiadou (2006, 2010) made their contribution, as their access to better and more richly annotated corpus data and more recent work on perfect semantics allowed them to identify some new patterns and connections. First, a series of additional

factors that had previously been noted (e.g. pluperfects, infinitives and negation) do not actually favor *have*, but only appear to because they tend to co-occur with other factors that really *do*.³ Second, once we concentrate on the real factors favoring *have*, it turns out that they can all be understood as disfavoring a certain type of perfect interpretation. To set up the claim, we need to first quickly consider in informal terms two of the interpretations that have been recognized for perfects cross-linguistically (see Iatridou, Anagnostopoulou, and Pancheva, 2003, for useful background discussion on these and other readings of the perfect). The first is what is often called the EXPERIENTIAL PERFECT, which describes an eventuality as having occurred at some point anterior to the reference time. For example (6) describes a series of three glass-losing events, combined together as a complex eventuality that took place during a one-month period preceding the reference time:

- (6) I had lost my glasses three times in the previous month, so I put them on a chain around my neck.

The second interpretation is known as the PERFECT OF RESULT, which describes a state holding at the reference time, which is in turn the result of the eventuality described by the main predicate. Consider as an example (7), where the relevant state is my not having my glasses at the reference time, as a result of my having lost them at some point prior:

- (7) I had lost my glasses, so I couldn't see very well.

Note crucially that many sentences with a perfect are potentially ambiguous between these two readings (and sometimes also one of the other types of perfect interpretation not discussed here, again see Iatridou, Anagnostopoulou, and Pancheva, 2003). Thus, under the right circumstances, (7) can be interpreted as an experiential perfect, i.e. as describing the eventuality of me losing my glasses, which is anterior to the reference time. Often, however, the surrounding context can favor or even force one reading over the other. Thus it is extremely difficult to interpret (6) as a perfect of result, because it is hard to imagine a unified target state resulting from the three events of losing my glasses. In order to lose my glasses a second and third time, I have to find them in the meantime, meaning that the target state of having lost them the first (and second) time no longer holds. This is why iteratives tend to strongly favor an experiential reading. What McFadden and Alexiadou (2010) claim, then, is that the variation between *have* and *be* after 1350 shows evidence that the two constructions differed in terms of what perfect readings they allowed. While the *have* perfect seems to have been compatible with both experiential perfect and perfect of result readings, the *be* perfect was restricted to resultatives. The factors favoring *have* turn out to all be factors that favor experiential perfect readings and disfavor resultative ones, explaining not just why they pattern together, but why they favor *have*.

To account for the developments observed in the perfect auxiliaries, McFadden and Alexiadou (2010) then propose the following. Initially, both constructions were restricted to a

³Much of this amounts to what they termed the 'counterfactual effect'. The past counterfactual turns out to be an extremely strong factor disfavoring *have*, and pluperfects and negation turn out to be highly associated with past counterfactuals. Once this is controlled for, their weaker apparent effects on *have* disappear.

perfect-of-result interpretation, as befits their pre-grammaticalization origins. This meant they could only appear with telic predicates including a target state in their interpretation, and they split them up between themselves according to transitivity. *Have* appeared with resultative transitives, and *be* appeared with resultative intransitives, which amounts roughly to the unaccusatives.⁴ Neither construction appeared with statives or activities, including most prototypical unergative predicates, but also many transitives. Around 1350, the construction with *have* expanded to be used as an experiential perfect, while the one with *be* remained purely resultative. This explains the expansion of *have*, including to verbs that previously only used *be* (and to ones that hadn't previously appeared in these periphrastic constructions at all), and also why *be* did not really decline in absolute terms at this time.⁵ The *have* experiential perfect was advancing at the expense of the simple past (i.e. in contexts like (4) above), not the *be* construction. It also captures the distribution of the two auxiliaries with the predicates that alternate in the later period: *have* is favored over *be* in contexts that favor an experiential interpretation over a resultative one.

Note that the constellation after the innovation of the experiential perfect around 1350 was still rather different from what we find in PDE. While this yielded a full-fledged, fairly modern looking (i.e. experiential) *have* perfect, a restricted perfect of result with *be* continued to exist alongside it. The question we must ask then is how things developed in the centuries after 1350. In fact, it seems that this state of affairs remained fairly stable up to the end of the Early Modern English (1500 to 1710, henceforth EModE) period covered by McFadden and Alexiadou (2010). This means that periphrases with *be* were just as common at the end of the 17th century as they had been in late ME, and there is no evidence at that point for *have* taking over. In other words, in the period for which McFadden and Alexiadou (2010) had data, the *be* perfect was not yet actually being lost! The *have* perfect had expanded its use and become far more common, but not by replacing *be*. Given that we know that the *be* perfect is gone in PDE, even in its restricted perfect-of-result use, something important must have changed since 1700. Specifically, something has happened which prevents *be* from combining with (non-passive) participles in their stative-resultative use. Whatever this was, it threw out of balance a system that had been stable since the innovation of the experiential perfect with *have* around 1350. The remainder of this paper will make some first strides, both empirical and theoretical, toward investigating what that change was.

3. Late Modern English basics

The first step is to gather data on when, how and in what contexts the *be* perfect was finally lost in Late Modern English (1710 to ca. 1915, henceforth LModE). Such an investigation

⁴I say 'roughly' here because the definition of unaccusativity is famously complex, and what is relevant here is really just a subset of the relevant factors. Determining whether a predicate will count as unaccusative typically requires reference to both agentivity and notions of inner aspect like telicity, with different phenomena in different languages being sensitive to these points in different measures. For the earlier English *be* perfect, it is only really resultativity that matters, with agentivity only indirectly relevant to the extent that transitive resultatives always take *have*.

⁵See McFadden and Alexiadou (2010) for data showing that, while the frequency of the *have* perfect was undergoing an explosion, that of the *be* perfect, though much lower, remained remarkably stable.

is made possible by the availability of the *Penn Parsed Corpus of Modern British English* (Kroch, Santorini, and Diertani, 2010).⁶ Searching the corpus allows us to actually see exactly when the frequency of *be* started to drop and whether it was then replaced by the *have* perfect or something else. We can also see whether any specific contexts played an identifiable role, as they did in the first expansion of *have* into experiential contexts, or whether *be* simply became less frequent across the board.

Table 1 gives an overview of the frequency of intransitive perfects with *be* and *have* from 1150 to 1913.⁷ The data up to 1710 are from McFadden and Alexiadou (2010), while the rest are new here.⁸ The numbers for 1707-1758 and 1758-1810 suggest clear continuity with what

Period	<i>be</i>-prf	% of clauses	<i>have</i>-prf	% of clauses
1150-1250	152	.35	146	.33
1250-1350	29	.13	116	.51
1350-1420	223	.30	573	.77
1420-1500	145	.36	420	1.06
1500-1569	295	.37	777	0.97
1570-1639	421	.45	1235	1.31
1640-1710	276	.35	940	1.18
1707-1758	122	.33	358	0.96
1758-1810	144	.39	418	1.13
1810-1861	40	.11	357	1.00
1861-1913	52	.20	502	1.85

Table 1. Frequency of *have* and *be* in intransitive perfects

came before. The *be* perfect still occurs in roughly one quarter of all intransitive perfects, i.e. the *have* perfect is about three times as frequent. Furthermore, the frequencies of both relative to the total number of clauses is remarkably similar to what McFadden and Alexiadou (2010) report for the preceding periods. In particular, roughly .35% of all clauses are *be* perfects and roughly 1.1% are intransitive *have* perfects.

To give a flavor for this period, we will look at some examples of perfects with *be*. Not surprisingly, considering that it was the most common verb with *be* perfects in all earlier periods, there are a large number of straightforward examples involving *come*, as in (8):⁹

⁶An expanded 2nd edition of the the corpus has recently been published (Kroch, Santorini, and Diertani, 2016). It unfortunately became available to me too late to be taken into account here, but it will serve as the basis for my continuing work on the topic. Initial searches on the new corpus re-confirm the broad strokes reported here, though it is to be hoped that the larger sample sizes will reveal new insights into points of detail that remain sketchy in the 1st edition, e.g. in the behavior of individual lexical verbs.

⁷The restriction to intransitives is made because transitive perfect clauses universally have auxiliary *have* throughout the history of English, and so they are of no interest when we are concerned with frequency of *be*. The exclusion is implemented on a per-clause basis in a fairly simplistic but robust way, by setting aside any clause with a direct object. Making the decision based e.g. on the identity of the lexical verb would have been considerably more complicated and prone to errors like inadvertently excluding examples of interest.

⁸The columns labeled ‘% of clauses’ supplement the absolute frequencies (which may tell us more about the size of the corpus for a particular period than about the perfect) with more useful relative frequencies. They are calculated by dividing the absolute numbers by the number of total clauses in the corpus for the relevant period. So the number in the far bottom right of the table can be interpreted to mean that 1.85% of all of the clauses in the period 1861-1913 in the corpus are intransitive perfects with *have*.

⁹LModE examples are taken from Kroch, Santorini, and Diertani (2010), with source information rendered exactly as it is given in the ID string for the clause in the corpus. Note that, in this corpus, the ID string includes the year of composition, with an X in the last digit indicating uncertainty within a decade. So while (8a) was written in the year 1740, (8d) was written sometime

- (8) a. I am now come to that Crisis of my Life, when Fortune seem'd to be at a Loss what she should do with me. (CIBBER-1740,34.16)
- b. When they were come they demanded entrance, which was granted them, (RYDER-1716,175.425)
- c. By this time a vast mob of sailors and others were come from Liverpool (RYDER-1716,175.429)
- d. My trunk is come already; (AUSTEN-180X,190.689)

Crucially though, the construction was still fully productive at this time, showing up in the corpus with a wide array of verbs (or rather verb phrases) having the right semantics, i.e. ones yielding nice target states, holding of the subject. Consider the examples in (9):

- (9) a. but the Men were all **fled** (COOKE-1712,1,434.222)
- b. but the Memory of them is **perished**. (DODDRIDGE-1747,15.120)
- c. for if 'tis so far in May, that the wild Mustard among the Corn is **flowered**, one good Day's Work upon it will afford eight Days Provision; (MAXWELL-1747,30.360)
- d. The Adventure is **sailed** for Charlotte Sound. (COOK-1776,35.729)
- e. and behold there was in its Mouth an Olive-leaf torn off; whereby he knew that the Water was **abated** from the Earth. (PURVER-OLD-1764,8,1G.205)

After the first two periods of LModE, however, the frequency of *be* seems to crash. In 1810-1861 and 1861-1913, we get .11% and .2% *be* perfects respectively. Intransitive *have* perfects remain fairly stable (though there is a bit of an increase in 1861-1913 to 1.85%).¹⁰ This represents a clear break with what came before: for the first time, *be* really seems to be in decline. During these periods we also first start to see non-trivial numbers of examples like those in (10). These involve verbs like *come*, in what look like perfects of result, but crucially showing up with *have*:

- (10) a. Porridge **has** just come in. (CARLYLE-1835,2,297.618)
- b. and now I **have** come in to have my tea. (WILDE-1895,50.298)

The two examples here include the adverbials *just* and *now*, which serve to foreground the target state of the coming event, and make it clear that it still holds at the reference time, which makes a perfect of result reading extremely likely. Indeed, compare (10a) with (11), which looks entirely parallel, but is 30 years older and has *be* rather than *have*:

- (11) John **is** just come from Ramsgate, (AUSTEN-180X,166.133)

We have strong evidence then that the *be* perfect finally started to actually disappear and be replaced by the *have* perfect around 1800. This is clear progress in our understanding of the development of the *be* perfect, but of course it leads us to further questions. First of all,

between 1800 and 1809.

¹⁰A more detailed analysis of the data is planned, to determine whether that uptick is important, and whether it is connected to the apparent uptick in the *be* perfect in that period as well.

what actually happened to make this construction, which had been infrequent but stable for centuries, finally disappear? Second, are there any discernible patterns in the data over the period when *be* is in decline, i.e. does it disappear first or hold on longest in one particular kind of context? In the remainder of this paper I will explore two initial lines of inquiry as to what might have happened, seeing what the corpus can tell us in order to direct a more in-depth, follow-up investigation.¹¹

4. Lexical restrictions

One possibility to consider is that an increasing restriction to a small number of lexical verbs played some role in the change. The *be* perfect always seems to have had a particularly strong association with the verb *come*, and at least impressionistically, *be* perfects in the language of e.g. Jane Austen seem to occur overwhelmingly with just *come* and *go*. Indeed, we know that at some point, lexical restrictions clearly kicked in, such that in PDE, the only constructions that still resemble the *be* perfect are adjectival uses of a small number of participles, especially *gone* in examples like (12):¹²

(12) When I arrived, Jane was already gone.

Furthermore, it has often been argued in work on language change that grammatical features in the process of being lost from a language tend to hold on longest with highly frequent lexical items (Bybee, 2010).

So let us test the relevance of potential lexical restrictions by considering some numbers from the corpus. First, we can ask how many of the *be* perfects in a given period involve *come* or *go*, versus some other lexical verb. The results are given in table 2. It might be possible to

period	<i>come</i>	(%)	<i>go</i>	(%)	<i>other</i>	(%)
1570-1639	195	(47.9)	83	(20.4)	129	(31.7)
1640-1710	68	(26.0)	74	(28.2)	120	(45.8)
1707-1758	18	(14.8)	40	(32.8)	64	(52.5)
1758-1810	56	(38.9)	39	(27.1)	49	(34.0)
1810-1861	9	(22.5)	13	(32.5)	18	(45.0)
1861-1913	22	(41.5)	16	(30.2)	15	(28.3)

Table 2. Lexical verbs with the *be* perfect

¹¹An anonymous reviewer suggests that an additional possibility to consider for further research on what triggered the loss of *be* might be influence from the prescriptive grammars and the other works on language. These were after all published in great numbers and enjoyed great popularity in the Late Modern period. Indeed, prescriptivist pressures have been argued to have played a role in shaping certain changes in progress during this period (see e.g. Smith, 2007, on the development of the progressive).

¹²Note that this is not, as is sometimes claimed, a lexically restricted but full-fledged holdover of the older construction. In this present-day usage, forms like *gone* are pure statives, not resultatives, and *be gone* is clearly not a perfect of result. Thus unlike in the language of the 19th century and before, the event that has presumably led to someone or something being *gone* is not accessible for modification in terms of manner or goal:

- i. * They are gone by car.
- ii. * They are gone to London.

discern a dip in the frequency of ‘other verbs’ in the very last period of LModE, but if anything it is very slight and not any larger than fluctuations in both directions in earlier periods. Here are some examples from the last two periods of *be* perfects with some of these ‘other verbs’:

- (13) And how is it vanished? (WHEWELL-1837,27.267)
- (14) I understand Sir George Seymour and his nephew, Captain Cleveland, are arrived; (COLLIER-1835,12.308)
- (15) The disciples therefore said unto him, Lord, if he is fallen asleep, he will recover. (ERV-NEW-1881,11,1J.969)

In other words, the differences between periods that we have here are essentially indistinguishable noise, with no consistent direction of development. This does not at first seem to suggest any special role for particular lexical verbs.

Before giving up on this possibility, though, we can try a somewhat different tack. Instead of considering how many of the *be* perfects in a given period involve a particular verb, we can ask how many distinct main verbs form at least one *be* perfect in a given period. This can be thought of as a rough measure of the lexical diversity of the construction. Of course, the diversity of lexical verbs attested in a given construction will also be strongly dependent on the size of the corpus — the more sentences we have, the more likely we are to come across a relatively infrequent verb. Table 3 thus reports the raw number of lexical verbs appearing with the *be* perfect in each period, as well as a statistic meant to correct (in an admittedly simplistic way) for differences in the corpus size in the different periods. This is simply the raw number divided by the total number of clauses in the corpus for the period, multiplied by 10,000. In other words, it gives the number of unique lexical verbs with *be* per 10,000 clauses. What

period	verbs	per 10,000 clauses
1500-1569	27	3.4
1570-1639	42	4.5
1640-1710	28	3.5
1707-1758	23	6.2
1758-1810	24	6.5
1810-1861	11	3.1
1861-1913	13	4.8

Table 3. Unique lexical verbs with the *it* perfect

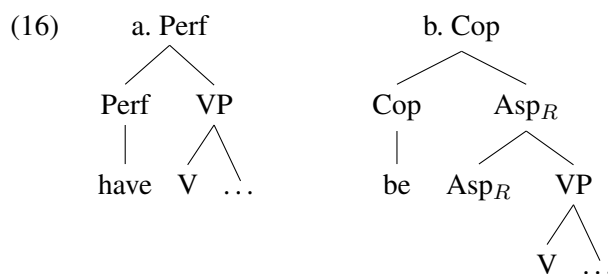
we see at first glance is a marked drop in the last two periods in the raw numbers, but this is relativized once we take into account how much data we have for each period in the third column. There we still see a clear drop between the 18th and 19th centuries, but the larger context shows that this is not a fall to uniquely low levels of lexical diversity characteristic of the death of a construction. Rather, the levels of the 19th century are quite comparable to those of the 16th and 17th, meaning that the outlier here is the 18th century, with its apparent burst of lexical creativity with the *be* perfect.

In summary then, we do not find any clear evidence that an increase in restrictions to a small number of lexical verbs played a clear role in the loss of the *be* perfect. At best there

is some suggestion that productivity declined towards the end. To make progress in this area we would ideally like to investigate whether the restrictions to particular verbs at particular periods follows something like Sorace (2000)'s Auxiliary Selection Hierarchy.¹³ This would predict e.g. that *be* would first be restricted to change of state and change of location verbs, and then to change of location verbs alone before disappearing entirely. Unfortunately, once we restrict ourselves to the *be* perfect with specific verbs in specific periods, the numbers quickly get very small, so that making progress here will require very careful corpus work.¹⁴ A more detailed statistical analysis of the distribution of different lexical verbs may also turn up patterns that are not immediately obvious.

5. Considerations about participles

An alternative avenue to pursue in looking for patterns in the loss of the *be* perfect is to consider the broader implications for the syntactic distribution of the relevant participles in the language. For this we take as our starting point the structures that McFadden and Alexiadou (2010) propose for the earlier English perfects with *have* and *be*, reproduced in (16):



What matters for our purposes is that there is an important asymmetry between the two structures. The *have* perfect includes a dedicated Perf head, which is realized by auxiliary *have*, on top of a(n extended) VP structure. This Perf head is responsible for the semantics of the *have* perfect (including something like anteriority and whatever else goes into the various readings), and what comes below it is essentially a normal VP. In other words, the (head realized by the) auxiliary itself makes a central contribution to the construction here, making it an existential perfect, which is clearly distinct from whatever the lexical verb *have* that was the source for the construction must have contributed. This is, after all, where the change that created a true perfect around 1350 lies.

¹³Sorace (2000, et seq.) proposes that gradience in auxiliary selection cross-linguistically, diachronically and in the course of language acquisition is sensitive to the following hierarchy:

- i. change of location > change of state > continuation of a pre-existing state > existence of state > uncontrolled process > controlled process (motional) > controlled process (non-motional)

Predicates at the beginning of the hierarchy are most likely to select *be*, while those at the end are most likely to select *have*. In a given language, at a given point in time, a cut-off will be made somewhere in the hierarchy, such that everything before it will take *be*, and everything after it will take *have*. Individual languages may differ and may change over time in where they put the cut-off, but they will not adopt a pattern that contradicts the hierarchy, e.g. with change of state and continuation of a pre-existing state taking *be*, but change of location taking *have*.

¹⁴This is thus a particular point where we can hope that the expanded 2nd edition of the LModE corpus (Kroch, Santorini, and Diertani, 2016) will offer improved possibilities for investigation.

In the *be* perfect, on the other hand, the auxiliary *be* is still serving essentially its original lexical purpose. It is nothing more nor less than the copula that shows up whenever the main predicate of a clause is not a verb, but an AP, NP or PP (*Simone is angry/a pilot/at the office*). It is thus crucially *not* the auxiliary *be* that yields the perfect of result interpretation here. Rather, it is the stative-resultative semantics of this particular use of the (past) participle that makes the construction a perfect of result. McFadden and Alexiadou (2010) put this special semantics in an Asp_R head that builds the participle from the VP, but whatever the details, the point is that the semantics lives in the structure corresponding to the participle rather than the auxiliary.

This is important background for us, because it leads to certain expectations about what must have happened when the *be* perfect was lost. The change cannot simply have been a matter of the form *have* replacing the form *be*. We might have imagined, e.g., that the alternation between *have* and *be* was essentially allomorphy for the realization of a single Perf head, and that the loss of *be* amounted to the default exponent *have* spreading at the expense of the more specific exponent *be*. But if McFadden and Alexiadou (2010) are right about their analysis of the alternation, this cannot be correct. Again, the two constructions involve completely different structures, with the auxiliaries realizing completely different heads, so a simple replacement of forms would not make sense. Instead, the syntactic structure underlying the *be* perfect must have been somehow lost from the language, with the structure involving *have* stepping in as an approximate replacement, at least in most contexts. This is perhaps a surprising proposition, so let us consider what it could mean.

There are two crucial pieces in the structure of the *be* perfect, the auxiliary and the participial main verb, thus two potential loci for change. But if the auxiliary is just the copula, then that cannot be what changed, since English obviously still has copular *be*. This leads us to surmise that something must have happened to the specific type of participial structure that the *be* perfect was built on. Now, English does still have stative-resultative participles that show up in stative passives and in certain attributive uses:

- (17) a. The flowers were already **crushed** when I got here.
 b. The **crushed** flowers are a testament to my clumsiness.

As (17a) shows, this participle is perfectly able to combine with *be* to form a clause, so this also cannot be what has changed. Of course, what distinguishes (17a) from the older *be* perfect is that the former involves a (passivized) transitive while the latter involved intransitives. This leads us to conclude that something like the following is what happened. Up to 1800, a stative-resultative participle could be productively formed from any VP with a target state in its denotation, which could then combine with *be*. After 1800, the creation of such participles came to be restricted to transitive (extended) VPs for some reason, eliminating the possibility for the *be* perfect. I.e. what was lost was not an entire construction, but the ability to form a crucial piece of the construction.

Now, if what was lost was the ability to form stative-resultative participles from unaccusatives, then that should have consequences outside the *be* perfect. It predicts that we

should also see such participles disappear from attributive position and from various kinds of small clauses and reduced relatives. Indeed, in PDE these are generally possible with ‘passive’ participles of transitives, but are usually strange to ungrammatical with participles of unaccusatives:

- (18) a. The **stolen** vase is worth millions.
- b. The vase **stolen** from my vault is worth millions.
- (19) a. * The **come** shipment is worth millions.
- b. ?* The shipment **come** this morning is worth millions.

We expect then that sentences like (19) should have been possible in the stages of English that still had the *be* perfect. Some preliminary searches suggest that this is correct:

- (20) a. but when I came to look round for them, I found them all **returned** to their Quarters, on which I went aft a second Time, and turned them all forward to their Duty. (HOLMES-TRIAL-1749,55.972)
- b. It was my intention to go to that island, where I should find a man-of-war come there to meet the mails, and to beg a passage to the South Coast. (READE-1863,220.496)
- c. Then sailing to Acapulco, Capt. Townley went with 140 Men to take a Ship **come** from Peru, which lay there; (COOKE-1712,1,443.379)
- d. for he has a powerful Rival **come** to Town. (DAVYS-1716,35.386)

Note that this is an empirically rather tricky area, as examples like (19) are sometimes still possible in PDE, under circumstances that remain poorly understood, e.g. involving specific lexical verbs in specific combinations, and sometimes requiring particular types of modification (see e.g. Levin, 1993, especially section 5.3):

- (21) a. The **fallen** leaves/?*glass crunched under my feet.
- b. The *(recently) **arrived** shipment contained party supplies.

An important task for future work will thus be to figure investigate precisely what kind of participle structure underlay the older English *be* perfect, how it relates to the structures of the stative participles still available in the language, and how the apparent loss of that particular structure could have occurred while leaving the ones that underly examples like (18) intact and creating the apparent remnant patterns in (21). Fortunately, this investigation will be able to build on the considerable body of recent, careful work on statives, resultatives and participial structures in English and elsewhere (see e.g. Kratzer, 2000; Marvin, 2002; Anagnostopoulou, 2003; Embick, 2004; Alexiadou and Anagnostopoulou, 2008; McIntyre, 2013; Larsson, 2015). What can be said already based on what we know at this point is that we are dealing with a target state participle rather than a resultant state one, in terms of Kratzer (2000) (building on Parsons, 1990), and in terms of Embick (2004), not a pure stative (like *open*) but a resultative (like *opened*), but with some additional distinction sensitive to transitivity.

6. Conclusion

In this contribution, I have presented preliminary results of a corpus investigation of the development of the *be* perfect in the Late Modern English period, from 1707 to 1913. This took advantage of a new high-quality corpus covering that period (Kroch, Santorini, and Diertani, 2010) to build on earlier work reported in McFadden and Alexiadou (2010), which had been unable to trace the final developments and loss of the *be* construction, as the corpus was not yet available at that time. I have shown that the real decline of the *be* perfect, as opposed to an independent expansion of the *have* perfect, can be dated to the 19th century. I then took some first steps toward understanding how the construction, which had been remarkably stable for several hundred years up to that point, so suddenly began to disappear. I first argued that there is no clear evidence for the involvement of increasing lexical restrictions. Then I argued that, if McFadden and Alexiadou (2010) are right about their analysis of the structures underlying the *be* and *have* perfects of earlier English, the replacement of the former by the latter was not a simple matter and must have involved the loss of a particular stative-resultative participial structure. Finally, I presented some suggestive evidence that this is correct, and discussed briefly how the developments here might be related to recent work on the structure of participles, statives and resultatives. I have left several questions open for future research, but as my intention with this paper was to pave the way for that work, I have attempted, at each step along the way, to bring up and discuss the questions that are raised, and to give some indication of what specific directions might be pursued to answer them.

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