PRE-AUXILIARY PLACEMENT OF ADVERBS IN THE HISTORY OF ENGLISH[*]

Eric Haeberli (eric.haeberli@unige.ch) & Tabea Ihsane (tabea.ihsane@unige.ch)

1. INTRODUCTION

In Present-Day English (PDE) clauses that contain a subject, a finite auxiliary and a non-finite verb, adverbs can occur in all the four positions available around these three elements: clause-initially, clause-medially before the auxiliary, clause-medially after the auxiliary, and clause-finally. The focus of this paper will be the variation found clause-medially, as illustrated in (1).

(1) a. They **will** *probably* read this paper. (SAuxAdvV)
     b. They *probably* **will** read this paper. (SAdvAuxV)

In (1a) the adverb occurs between the auxiliary and the non-finite main verb whereas in (1b) the adverb intervenes between the subject and the auxiliary. Although both word orders can be found in PDE, they do not have the same status. As Huddleston & Pullum (2002: 780) point out, 'the order shown in [1a] is not only possible but quite strongly preferred over that shown in [1b]'.

The nature of the variation in PDE has been studied by various authors (e.g. Jacobson 1975, Granath 2002, Waters 2011, 2013). However, very little work has focused on the diachronic development of this variation. The main exception is Jacobson (1981), but his work is based on a very limited amount of evidence. As a consequence, the validity of his quantitative observations remains somewhat uncertain and the data do not allow for distinctions to be made with respect to possible factors influencing the variation.

In this paper, we will examine the historical development of the variation in (1) in more detail. The two word orders shown in (1) can already be found in Old English (OE), and we will show that they can be found throughout the history of English. From a diachronic point of view, the question that arises then is how it has been possible for this variation to persist for over a thousand years, and why, in contrast to many other cases of variation, one option has not been driven out of the grammar by the other one over time?

The paper is structured as follows. In section 2, some aspects of the earlier literature on adverb placement with auxiliaries in PDE is reviewed. Section 3 presents a quantitative overview of the diachronic development of the SAdvAuxV/SAuxAdvV variation from OE to Late Modern English (LModE). In section 4, we explore some issues that adverb placement in clauses with auxiliaries raises with respect to the nature of syntactic variation and change in general. Section 5 concludes the paper.

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2. VARIABILITY IN ADVERB PLACEMENT WITH AUXILIARIES IN PDE

In this section, we will briefly present some observations made in work on adverb placement in clauses with auxiliaries in PDE. The main aim here is to identify relevant variables and methodological aspects that we can subsequently take into account in our analysis of the historical material.

Huddleston & Pullum's (2002: 780) claim cited above, according to which there is a strong preference for the order SAuxAdvV over SAdvAuxV in PDE, is supported by several quantitative studies. Waters' (2013) analysis of two spoken corpora, one compiled in Toronto (2003–2006) and the other one in York (1996–2003), shows that pre-auxiliary placement of adverbs occurs only at a rate of 6.1% in Toronto and of 4.4% in York. Similar figures can be found in Granath (2002). In data taken from *The New York Times* and *The Guardian/The Observer* from the year 1996, the frequency of pre-auxiliary adverb placement is 5.2% for the former and 3.9% for the latter. In the spoken data Granath examined, the rates are somewhat higher, but with 10.7% for American English and 7.7% for British English they remain low. Overall, pre-auxiliary placement of adverbs is a rather marginal option in PDE.

As for the factors influencing the use of the marked word order option, social variables like age, sex and education do not play an important role in Waters' (2013) data. The only social factor that influences the use of SAdvAuxV order is the geographic origin of the speaker (Toronto vs. York). This is in line with observations made elsewhere that the marked word order occurs more frequently in American English than in British English (e.g. Granath 2002). However, this contrast falls outside the scope of this paper as the data we will examine are exclusively from British sources. We will therefore leave dialect variation as a potential variable aside in our discussion. The only other factors that play a significant role in Waters' study are of a linguistic nature. Let us therefore briefly consider possible linguistic variables that are of importance.

From a semantic point of view, the variation in (1) generally has little effect. Comparing the sentences *She had really delighted her audience* and *She really had delighted her audience*, Quirk et al. (1985: 494) suggest that the former is best paraphrased as 'I wish to emphasize the degree of delight she gave her audience' whereas for the latter they propose as a paraphrase 'I wish to emphasize the fact that she had delighted her audience'. But ultimately they conclude that '[t]here is not in fact much substantial difference *semantically* between these two'.

The only context in which adverb placement does have a clear semantic impact is in negative clauses, as the following examples illustrate ((2b) from Huddleston & Pullum 2002: 782).

(2)   a.   [Ministers] are split between those who *really* **do**n't need [a pay rise] and those who **do**n't *really* need it. (*Private Eye* 1394: 25)
       b.   It **was**n't *regularly* available. vs. It *regularly* **was**n't available.

In negative clauses with reduced negation, adverb placement with respect to the auxiliary is determined by relative scope. For example in the first clause in (2b), the auxiliary with reduced *not* precedes the adverb and negation therefore has scope over it, which leads to the reading 'It isn't the case that it was regularly available'. In the second word order with the adverb preceding the auxiliary and the reduced negation, the adverb has scope over negation and the sentence can be paraphrased as 'It was regularly the case that it wasn't available'. In negative clauses with reduced negation, adverb placement is therefore not truly variable in the way it is in (1) but it is determined by the intended meaning of the clause. Negative clauses therefore

have to be distinguished from affirmative ones in an analysis of variation of adverb placement with auxiliaries (cf. also Waters 2013: 182f.).[1]

A second linguistic factor that has been identified in the literature besides negation as having an impact on adverb placement is prosody, and more specifically stress on the auxiliary. Huddleston & Pullum (2002: 782) observe that '[i]n general, the pre-[auxiliary] version is considerably improved by placement of stress on the [auxiliary], and even more when such stress is accompanied by ellipsis of post-[auxiliary] elements'. As a matter of fact, in such contexts, post-auxiliary placement may even be considered as ungrammatical. Baker (1971: 170) provides examples like the following:

(3)   a.   John admires Susan now, and he *always* **HAS** (admired her).
      b. * John admires Susan now, and he **HAS** *always* (admired her).

In (3), the auxiliary is given emphatic stress, and the pre-auxiliary position is clearly preferred. However, this preference does not seem to depend on emphatic stress on the auxiliary, as example (4) from Baker (1971: 171) shows.

(4)   a.   John has taken more from you in the past two days alone, than Bill *EVER* **has** from me.
      b. * John has taken more from you in the past two days alone, than Bill **has** *EVER* from me.

In the most natural pronunciation of the word order in (4a), primary stress falls on the adverb. But due to ellipsis of post-auxiliary material, the auxiliary is not entirely unstressed, either, as is suggested by the fact that the auxiliary cannot be reduced. The generalization Baker (1971: 171) therefore proposes is that post-auxiliary placement of adverbs is restricted when 'the auxiliary has nonlow stress' (1971: 171).

In our study, stress on the auxiliary cannot be taken into account as a variable since there is no reliable way to determine its presence in written sources. Although this is regrettable, the findings of Waters (2013), which are based on oral corpora, suggest that the importance of stress for pre-auxiliary placement of adverbs should not be overestimated. Waters examined the recordings of all the 31 clauses with an adverb in pre-auxiliary position in her British corpus (not including cases of ellipsis) and found only one instance in which the auxiliary was stressed. Hence, although stress on the auxiliary clearly favours pre-auxiliary placement of the adverb, much of the variation in adverb placement occurs independently of the prosodic properties of the auxiliary.

A third linguistic factor that is mentioned in the literature as affecting adverb placement in PDE is auxiliary type and the collocations involving the auxiliary. Similarly to findings reported by Jacobson (1975: 386), Waters (2013: 87) observes the highest frequency of pre-auxiliary placement with the modal *should* (15.8% for Toronto, 22.2% for York, but based on very small numbers of examples) and the lowest one with auxiliary *have* (2.5% for Toronto, 0.8% for York). Auxiliary *be* is not included in Waters' study, but it tends to have a comparatively low frequency of the marked order in Jacobson's (1975) data. Finally, Waters also observes that with modals pre-auxiliary placement is particularly frequent if the modal is

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[1] With unreduced negation, the reading where the adverb has scope over negation does not necessarily require adverb placement before the auxiliary. Instead, the adverb can occur between the auxiliary and negation, and variation is thus possible for the same reading (e.g. *They should really not do this* vs. *They really should not do this*). In written sources, as will be examined in this paper, the use of reduced negation is rare. Nevertheless, it remains possible that the usage patterns from the spoken language, where reduction is predominant, has an impact on adverb placement in writing. For further discussion of these issues see section 4.1 below.

followed by auxiliary *have*. In this context, frequencies of 48.4% and 40.0% can be observed for what is generally the marked order.

The fourth linguistic variable that has been shown to be relevant for adverb placement in PDE is adverb type. For example Huddleston & Pullum (2002: 782) observe that '[t]he degree of preference for the post-auxiliary position is variable' but '[i]t is less, for example, with modal adjuncts … than with frequency ones'. In their quantitative analyses, Granath (2002) and Waters (2013) confirm this observation. Granath (2002: 27) distinguishes two classes of adverbs, temporal ones (e.g. *already*, *always*, *often*) and modal ones (e.g. *actually*, *certainly*, *really*). Analysing the distribution of fourteen adverbs from each class in her six corpora, she shows that the frequency of pre-auxiliary placement is between 6% and 18% higher with modal adverbs (2002: 28). Based on a very similar kind of distinction with respect to adverb types, Waters (2013: 189) reaches comparable conclusions.

Finally, Jacobson (1975) examines two further variables: type of subject and type of clause. With respect to subjects, he distinguishes three variants: (a) personal pronoun, (b) regular full DP, (c) no overt DP. Whereas the difference between pronominal and full DP subjects is minimal, clauses without an overt subject have clearly higher frequencies of pre-auxiliary placement of adverbs (1975: 356). Waters (2013) does not examine clauses without an overt subject, but the distinction between pronominal and full DP subjects turns out not to be significant (2013: 190–1). As for clause type, the use of pre-auxiliary adverbs is generally around 5% higher in main clauses as compared to subordinate clauses in Jacobson's data (1975: 356). This variable has not been considered in any of the other works reviewed here.

3. VARIABILITY IN ADVERB PLACEMENT WITH AUXILIARIES IN THE HISTORY OF ENGLISH

Having considered aspects of the variability in adverb placement in PDE, we will now examine the way this aspect of the grammar has developed throughout the history of English. To our knowledge, Jacobson (1981) is the only previous study that has examined adverb placement with respect to auxiliaries from a long-term diachronic perspective. Although the amount of material covered by Jacobson is respectable for a study carried out in the pre-electronic era, it remains too limited in many respects to allow us to obtain a detailed picture. On the basis of a relatively small amount of material, Jacobson (1981: 91ff.) summarizes his main diachronic findings by referring to three main periods, i.e. OE, ME and Modern English, and concludes that statistically significant decreases of pre-auxiliary adverb placement can be observed from each period to the next. However, a detailed diachronic analysis would require more fine-grained temporal distinctions. Another problem that Jacobson's study raises is that he does not distinguish what we will show are important variables such as auxiliary type (his data include copula *be*) or subject type (his data include subject gaps).

Given these shortcomings, we do not review Jacobson's findings in any detail here but will simply refer to his work where appropriate. Before presenting our own overview of the status of pre-auxiliary placement of adverbs from OE to LModE, we will start by mentioning some methodological aspects of our study.

3.1. Methods

All our data are drawn from the currently available historical parsed prose corpora of English, which cover a wide range of texts from the 9th century up to 1914: *The York-Toronto-Helsinki Parsed Corpus of Old English Prose* (Taylor, Warner, Pintzuk & Beths 2003; 9th to 11th centuries), the *Penn-Helsinki Parsed Corpus of Middle English 2* (PPCME2; Kroch & Taylor 2000; 1150–1500), the *Penn-Helsinki Parsed Corpus of Early Modern English* (PPCEME;

Kroch, Santorini & Delfs 2004; 1500–1710), *The Parsed Corpus of Early English Correspondence* (PCEEC; Taylor et al. 2006; 1410–1695), the *Penn Parsed Corpus of Modern British English* (PPCMBE; Kroch, Santorini & Diertani 2010; 1700–1914). Since we have found no substantial genre differences between correspondence and other texts in Middle English (ME) and Early Modern English (EModE) with respect to adverb placement, the data from the Penn corpora and the PCEEC are combined in our results for these periods.[2]

Given the discussion in section 2 and following in several respects Waters (2013), we will initially focus on clauses having the following properties:

(a)   The clause is an affirmative declarative main or subordinate clause. As pointed out in section 2, adverb placement in negative clauses may have a semantic impact and is therefore not variable in the way it is in affirmative clauses.

(b)   The clause contains an overt subject. The absence of an overt subject would not allow us to determine conclusively whether a pre-auxiliary adverb is in medial position. Instead, it could occupy a clause-initial position, i.e. the position that precedes an overt subject. Clause-medial placement before an auxiliary can only be identified when a subject is present.

(c)   The clause contains an adverb of any type in medial position between the subject and the non-finite verb. As suggested by Waters (2013: 184), the variable context for the purposes of studying variation in adverb placement with auxiliaries is best restricted to the clause-medial area because both clause-initial and clause-final adjuncts can be argued to have syntactically distinct properties (e.g. topicalization for clause-initial elements). Thus, the variable context is reduced to the variation shown in (1) (i.e. SAuxAdvV vs. SAdvAuxV).

(d)   The clause contains a finite auxiliary (modal, *have*, *be*) and one non-finite verb (either a main verb or copula *be*). Thus, clauses with more than one non-finite element are excluded. This is because such clauses introduce further distributional variability in medial position (i.e. besides pre- and immediate post-auxiliary placement also a position between the second auxiliary and the main verb) and the different options may not be entirely equivalent from a semantic point of view (Waters 2013: 183).

Although we will initially restrict our dataset in the way listed above, we will also make observations concerning alternative contexts at various stages in our discussion, such as clauses with negative clauses (cf. 4.1), or clauses without an overt subject (cf. 4.2).

Examples (5) and (6) illustrate the kind of data we will focus on in our analysis in the following subsection.[3]

(5)   *SAdvAuxV*
  a.   but he *never* **cold get** penny for them   (LEYCEST,201.054.1765; 1586)
  b.   where we *well* **were receyuyd**   (CHAPLAIN-E1-P2,4.28; 1506)
  c.   You *then* **are going** wild about Ossian.   (JOHNSON-1775,2,11.200; 1775)
  d.   … as other *lately* **have done** in Lincolnshire   (CLIFFO,54.014.88; 1540)

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[2]   For the PPCEME, we excluded all texts that are also contained in the PCEEC. Cf. https://github.com/beatrice57/pceec2/blob/main/docs/overlap-with-ppceme.html for a list of these overlap files. Furthermore, we restricted our searches in the PPCME2 to texts that can be assigned clearly to one of the periods we use. We therefore excluded all texts whose composition date and manuscript date belong to different periods (i.e. all PPCME2 files with the extensions mx1, m23, m24, m34, mx4).

[3] The references provided with the examples follow the conventions of the corpora used. In addition, with Middle, Early Modern and Late Modern English examples, the reference to the source is followed by the date of the text.

(6)   *SAuxAdvV*
    a.   or we **shall** *never* **keep** them here.   (LEYCEST,339.076.2392; 1586)
    b.   and that countre **is** *properly* **called** nowe Turkey.
                                                  (CHAPLAIN-E1-P2,13.207; 1506)
    c.   As he **was** *thus sadly* **debating** the Matter unto hymselfe
                                                (PERROTT-E2-H,33.15; 1592–1603)
    d.   … whom wee **have** *specially* **dispatched** thither (CLIFFO,54.014.88; 1540)

3.2. The development of pre-auxiliary placement of adverbs from OE to LModE

3.2.1. *Overview*

Table 1 below shows the development of the distribution of adverbs in a position between an overt subject and one non-finite main verb or copula *be* in all types of clauses from to the early 20th century. The adverb occurs either before the finite auxiliary or after it, and the auxiliary can be a modal, *have* or *be*.[4] For reasons of comparability, we adopt the periodization used in Haeberli & Ihsane (2016) for the placement of adverbs with respect to finite main verbs.[5]

Table 1. The distribution of adverbs and finite auxiliaries from Old to Late Modern English
        (YCOE, PPCME2, PPCEME, PCEEC, PPCMBE)

Periods	*SAdvAuxV*	*SAuxAdvV*	*Total*	*%SAdvAuxV*
Old English	772	2184	2956	26.1%
1150–1250	43	228	271	15.9%
1250–1350	6	91	97	6.2%
1350–1420	41	546	587	7.0%
1420–1475	23	729	752	3.1%
1475–1500	16	326	342	4.7%
1500–1525	16	343	359	4.5%
1525–1550	46	838	884	5.2%
1550–1575	52	816	868	6.0%
1575–1600	38	1090	1128	3.4%
1600–1625	32	1195	1227	2.6%
1625–1650	30	1123	1153	2.6%
1650–1700	61	2665	2726	2.2%
1700–1770	31	758	789	3.9%
1770–1840	38	990	1028	3.7%
1840–1914	41	723	764	5.4%

In OE, pre-auxiliary placement of the adverb is relatively frequent (26.1%). But throughout ME, the rate of SAdvAuxV declines gradually,[6] reaching a low point in the period 1420–1475

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[4] In the group of modals, all elements tagged as such in the parsed corpora are included, with the exception of *ought*, which, in contrast to the other modals, takes a *to* infinitive as a complement rather than a bare infinitive. Not included in our counts is also auxiliary *do*.

[5] This periodization is based on the divisions made in the parsed corpora for 1150–1420 and for 1700–1914. For the period 1420–1700, the more fine-grained divisions proposed by Ellegård (1953) are used since this is the period when the most important changes occur in the verbal syntax of English.

[6] The period 1250-1350 does not entirely fit into this regular downward pattern. This may be due to the limitations of the corpus, which contains only three texts for this period, two of them being from around 1350. Only 4 out of the 97 relevant examples are from the early part of the period 1250-1350. Hence, the temporal difference between

with a frequency of 3.1%. From then onward, the changes are minor. If we compare the figures of each period with those of the following one, only two developments are statistically significant: The decline from 1550–1575 to 1575–1600, and the rise from 1650–1700 to 1700–1770. All the other period-to-period developments from 1420 to 1914 are not statistically significant.

But even the decline of SAdvAuxV in early English may be a less substantial development than the figures in Table 1 suggest. OE is characterized by a large number of clauses with head-final structure, which alternate with clauses with head-initial structure (Pintzuk 1999). In head-final clauses, the order of auxiliaries and main verbs can be inverted due to the occurrence of what is generally referred to as Verb Raising and Verb Projection Raising (cf. Haeberli & Pintzuk 2012). Thus, a certain number of OE SAdvAuxV clauses may be underlyingly head-final. Some residues of this may also be found in early ME (1150-1250), but head-final structure in clauses with finite auxiliaries is entirely lost around this time. As a consequence, if we were to trace a history of SAdvAuxV word order with head-initial structure only, the figures would be lower already for OE and early ME, and the range of variation would be even smaller over the entire 1000-year time span we have examined.

3.2.2. *Pre-auxiliary placement in different contexts*

Given the observation reported in section 2 that certain linguistic contexts may have an impact on the frequency of use of SAdvAuxV order in PDE, we also examined our data in light of the following factors: clause type, auxiliary type, adverb type, and subject type.

- Clause type: The main clause/subordinate clause distinction only plays a role in OE and early ME, where a general clause type asymmetry with respect to verb placement can be found (cf. e.g. van Kemenade 1987, Pintzuk 1999 for OE, Haeberli & Ingham 2007 for early ME). After early ME, there are no substantial differences between main and subordinate clauses in our data.

- Auxiliary: We obtain relatively systematic hierarchies with respect to pre-auxiliary/copula placement of adverbs over the history of English: auxiliary *be* < modal < auxiliary *have* < copula *be* for most periods before 1770; auxiliary *be* < auxiliary *have* < modal < copula *be* after 1770. Furthermore, the increased rate of SAdvAux order with collocations of the type 'modal + auxiliary *have*' observed by Waters (2013) for PDE can be observed in LModE, but not in the earlier periods. However, the frequency differences across the different contexts are rather small, and SAdvAux remains marginal regardless of the type of auxiliary that is used.

- Adverb: In studies of PDE, modal (or, in Ernst's 2002 terms, predicational) adverbs generally occur more frequently in pre-auxiliary position than temporal (or functional) ones. A similar contrast can also be found in the historical data, but mainly in the two most recent periods (1770-1840, 1840-1914). But once again, the differences remain moderate.

- Subject: A contrast between full DP subjects and pronominal subjects can be identified in the early periods between 1250 and 1700, with the rate of SAdvAuxV being consistently higher with full DP subjects than with subject pronouns. The more recent periods from 1700 onwards are in line with what Jacobson's (1975) and Waters' (2013) studies suggest

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the data included under 1250-1350 and those under 1350-1420 is small, which may have contributed to the absence of a quantitative contrast in Table 1.

for PDE in that no subject type contrast can be detected. In section 4.2, we will return to subject type as a variable with a focus on clauses without an overt subject.

Before possible accounts of the tendencies with auxiliaries and adverbs can be explored, more detailed quantitative analysis will be needed to establish their statistical significance. We will have to leave this for future work.

3.3. Conclusions

In summary, SAdvAuxV has always been a very marginal word order option throughout the history of English. While the frequency was somewhat higher in OE, possibly due to the influence of head-final structure, SAdvAuxV as opposed to SAuxAdvV has occurred with frequencies between 2% to 7% over the last approximately 800 years. These frequencies would even be considerably lower if we measured SAdvAuxV against the total number of all clauses containing an adverb after the subject (below 4% if we also included SAuxVAdv in our counts). The question that these observations may raise then is how the variable word order SAdvAuxV/SAuxAdvV in clause-medial position has been maintained despite the fact that one of the two options is a highly marginal option. Typically, in cases of competition between two variants, one of the options drives the other one out over time (as is the case for example with adverb placement with finite main verbs, with SAdvVO having driven SVAdvO order out, cf. Haeberli & Ihsane 2016). In terms of the standard S-shaped curve representing change with two competing options, frequencies from 2% to 7% would be considered as falling well within the completed phase of a change (e.g. Nevalainen & Raumolin-Brunberg 2003: 55). We may wonder then why SAdvAuxV has been able to remain viable for such a long time despite its very low frequency of occurrence and why it has not been lost at some point in the history of English. This is the issue we will explore in the next section of this paper.

4. THE MAINTENANCE OF SADVAUXV ORDER

An initial answer to the question why a low-frequency syntactic phenomenon like SAdvAuxV order can be entirely stable over a very long period of time could be that the SAdvAuxV/SAuxAdvV variation has simply never been subject to the dynamics of a change as represented in an S-shaped curve. Although the frequency of the surface word order SAdvAuxV declines considerably from OE to 1350 (cf. Table 1: 26.1% (OE), 15.9% (1150–1250), 6.2% (1250–1350)), it is by no means certain that this development corresponds to the final phase of an S-shaped change away from predominant SAdvAuxV order towards predominant SAuxAdvV. Furthermore, if our hypothesis is correct that in head-initial contexts the frequency of SAdvAuxV order in OE may have been lower than suggested in Table 1, there is stability as far as the underlying grammar is concerned in that the structural option corresponding to SAdvAuxV in a head-initial structure has not changed substantially throughout the history of English. As a consequence, we do not get the sociolinguistic dynamics of a change in which a new option drives an old one out.

Even if something along these lines were correct, it would nevertheless be conceivable that a low-frequency phenomenon like SAdvAuxV could be in danger of falling out of use over time. There are indeed languages, as for example French, where pre-auxiliary placement of adverbs is to a large extent banned. What we will argue in the following subsections is that various phenomena have prevented this from happening over the course of the history of English.

4.1. Negation and ellipsis

We start our discussion by considering the situation in PDE. A plausible factor for the maintenance of SAdvAuxV order in PDE is the fact, observed in section 2, that there are two contexts in which AdvAux order is obligatory and therefore not in competition with AuxAdv: (1) Negative clauses with reduced negation and a reading where the adverb has scope over negation (cf. *It regularly wasn't available.* ≠ *It wasn't regularly available.*); (2) Clauses in which the auxiliary has non-low stress as found for example in cases of ellipsis (*John admires Susan now, and he always HAS.* vs. **John admires Susan now, and he HAS always.*). This suggests that in PDE semantic factors (context 1) and prosodic ones (context 2) support the maintenance of a syntactic structure that allows adverbs to occur in a pre-auxiliary position. Even though it is only in specific semantic and prosodic contexts where AdvAux is required, we may nevertheless assume that, once the syntax derives a given structure, its use can then also be occasionally extended to other contexts.

Although the two factors mentioned above can be argued to play a role in the maintenance of SAdvAuxV order in PDE, they are not sufficient for an account covering the entire history of English. As pointed out in section 2, adverb scope over negation requires pre-auxiliary placement only if negation is reduced. If it is not, the same reading can be obtained by means of adverb placement after the auxiliary but before negation (*It was regularly not available.*). As a consequence, context (1) cannot have played a role in supporting the status of SAdvAuxV before the emergence of reduced *not*. According to Rissanen (1994, 1999) and Warner (2005), the beginning of this development can be traced back to the first half of the 16th century. Semantic constraints can therefore not have favoured the maintenance of SAdvAuxV order before that period, and their relevance then developed in parallel with the increase in use of reduced *not* from the 16th century onwards.

It is difficult to measure the emergence of this factor in a precise way. This is because reduced negation is simply not very common in our data. Possibly as a consequence of this, the first relevant example in our corpus, shown in (7), can only be found in the middle of the 18th century. But even after that, examples of this type are rare.

(7)   I *really* **can't** tell.   (HOLMES-TRIAL-1749,48.828; 1749)

Data covering all types of negative clauses (including those with non-reduced negation), however, could be interpreted as showing some signs of the emergence of reduced negation as a motivation for pre-auxiliary placement of adverbs. It would be conceivable that, despite the infrequent occurrence of reduced negation in writing, the more widespread use of cases like (7) in spoken registers could have had an impact on pre-auxiliary placement in negative clauses in general, which is then also manifest in writing. If we compare the rates of SAdvAuxV order in negative clauses containing *not* and a modal or auxiliary (*have*, *be*, *do*) in our corpus with those in affirmative clauses as shown in Table 1, we can indeed observe a certain development. In the subperiods from 1500 to 1650, the frequency of SAdvAuxV order in negative clauses is generally below that for affirmative clauses. This is the phase when reduced negation starts emerging according to Rissanen and Warner. Although the differences between negative and affirmative clauses are not statistically significant for the individual 25-year subperiods we distinguished in Table 1, statistical significance is reached for the entire period from 1500 to 1650 (2.2% SAdvAuxV for negative clauses (n = 719) vs. 3.8% for affirmative clauses (n = 5619); p = 0.03). Then, in the period 1650–1700, the two rates are nearly identical (2.4% for negative clauses (n = 339) vs. 2.2% for affirmative clauses (n = 2726)). Finally, in the period 1700–1914, the difference between the two clause types is inverted, with SAdvAuxV being more frequent in negative clauses than in affirmative clauses. Again, no statistically significant

results are obtained for each individual subperiod, but the 214-year period as a whole does show a statistically significant contrast (6.8% SAdvAuxV for negative clauses (n = 296) vs. 4.3% for affirmative clauses (n = 2581); p = 0.05). This increase with SAdvAuxV order in negative clauses from the 18th century onwards could then be argued to be a side effect of the emergence of semantically motivated pre-auxiliary placement with reduced *not*.

The second factor identified above as supporting the maintenance of SAdvAuxV order in PDE, i.e. non-low stress on the auxiliary, is also one that does not seem to have played a role throughout the history of English. Evidence for this comes from data involving ellipsis. As pointed out above, in ellipsis contexts adverb placement is not variable in PDE as adverbs must precede the auxiliary. In our corpora, this restriction can only be observed from the end of the 17th century onwards. Before that, variation in adverb placement with ellipsis can be found as the following two examples from the 17th century illustrate.

(8)   a.   *SAdvAux*
             as soone as I *possibly* **could** I have according to your command repayred into the
             country   (BARRING,117.069.1247; 1629)
       b.   *SAuxAdv*
             for my desyre and my poore wive's is to be with yow, I assure yow, as soone as we
             can *possiblye*, God permitting.   (BARRING,191.129.2218; 1631)

(9)   a.   *SAdvAux*
             and to give him all the satisfaction I *possibly* **could**: …
                                                              (BEHN-E3-H,192.205; 1688)
       b.   *SAuxAdv*
             The captain, on his part, fail'd not to have all things in a readiness, in the most
             magnificent order he **could** *possibly*: …   (BEHN-E3-P2,178.126; 1688)

Data like those in (8) and (9) suggest that ellipsis contexts do not have a special status with respect to pre-auxiliary placement before the 18th century. They can therefore not be considered as having a particular role in the maintenance of SAdvAuxV order before then, either.

In summary, there are two contexts in PDE in which adverb placement with respect to auxiliaries is not truly variable and SAdvAux order is required. These contexts can be argued to make an important contribution to the maintenance of what we have shown otherwise to be a very low frequency word order phenomenon. But the possible influence of these contexts can be traced back at best to the 16th century with the emergence of reduced negation in the case of negative clauses and to the 18th century with the disappearance of post-auxiliary placement of adverbs in elliptic constructions. In the next subsection, we will examine whether any other factors supporting SAdvAuxV order can be identified for earlier English.

4.2. Clauses without an overt subject

As shown in Table 1, the frequency of SAdvAuxV order gradually declines after OE, reaching a low point in the period 1420–1475. The question then is what prevented SAdvAuxV from declining even further in the late 15th century and the 16th century, assuming that the effects of reduced negation on SAdvAuxV were still rather weak in the 16th century. We have not been able to identify any contexts for that period in which pre-auxiliary placement of adverbs is obligatory as it is in certain negative clauses and elliptic constructions in PDE. However, there is one context where AdvAuxV is at least very heavily favoured, and that is clauses without an overt subject position. This context includes conjoined clauses in which the subject of the second conjunct is omitted and clauses in which a movement trace occurs in the subject position

(as found mainly in subject (free) relatives and subject indirect questions).[7] Relevant examples for the AdvAuxV/AuxAdvV variation are given in (10) (conjoined clauses) and (11) (clauses with a trace).

(10) a.   *AdvAuxV*
           Thus they foughte style two owres and more and __ *never* **wolde** have reste,
                                         (BEHN-E3-H,192.205; 1688)
           thus they fought still two hours and more and   never would have rest
           'Thus, they fought another two hours and would never have a rest.'
       b.   *AuxAdvV*
           And kynge Pellam lay so many yerys sore   wounded and __ **might** *never*
           and king   Pellam lay so many years sorely wounded and   might never
           be hole   tylle…   (CMMALORY,64.2171/2; a1470)
           be whole until …
           'And King Pellam lay sorely wounded for so many years and was never able
           to recover until…'

(11) a.   *AdvAuxV*
           the unnaturallest   man to the house that __ *ever* **was** borne
                                         (HASTING,51.017.508; 1592)
           the most-unnatural man to the house that   ever was born
           'the most inhuman man in the family that was ever born'
       b.   *AuxAdvV*
           him who __ **hathe** *ever*   bene ready to frende   you
                                         (HASTING,41.012.388; 1588)
           him who   has   always been ready to befriend   you
           'him who has always been ready to befriend you'

The two tables below provide a quantitative overview of the distribution of adverbs with respect to finite auxiliaries (modals, auxiliary *have*, auxiliary *be*) in second conjunct clauses without an overt subject (Table 2) and in subordinate clauses with a trace (Table 3) from Early Middle to Late Modern English. The first percentage column in each table gives the rate of AdvAuxV order in clauses without an overt subject whereas the second percentage column repeats the rate of SAdvAuxV order in clauses with an overt subject from Table 1 for the sake of comparison.

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[7] Our counts are based on subordinate clauses marked as having a trace in subject position in the parsed corpora we examined. Besides relative and interrogative clauses, this class of clauses also includes comparative clauses (ia) and clauses introduced by *as* (ib).
(i)   (a)   … and have given greater signs of loyallty and willingness then __ *ever* **was** done by any people,
                                         (PEPYS-E3-P2,8,332.280; 1667)
       (b)   … the prince of Parma was not at Antwerp as __ *before* **was** reported
                                         (LEYCEST,397.083.2564; 1586)

Table 2. The distribution of adverbs with respect to finite auxiliaries and non-finite main verbs from Early Middle to Late Modern English in conjoined clauses without an overt subject (PPCME2, PPCEME, PCEEC, PPCMBE)

Periods	AdvAuxV	AuxAdvV	Total	%AdvAuxV	%SAdvAuxV with overt subject
1150–1250	8	18	26	30.8%	15.9% (n=271)
1250–1350	1	2	3	33.3%	6.2% (n=97)
1350–1420	25	13	38	65.8%	7.0% (n=587)
1420–1475	33	16	49	67.3%	3.1% (n=752)
1475–1500	6	4	10	60.0%	4.7% (n=342)
1500–1525	6	6	12	50.0%	4.5% (n=359)
1525–1550	30	33	63	47.6%	5.2% (n=884)
1550–1575	19	37	56	33.9%	6.0% (n=868)
1575–1600	41	42	83	49.4%	3.4% (n=1128)
1600–1625	34	63	97	35.1%	2.6% (n=1227)
1625–1650	19	56	75	25.3%	2.6% (n=1153)
1650–1700	43	129	172	25.0%	2.2% (n=2726)
1700–1770	9	36	45	20.0%	3.9% (n=789)
1770–1840	7	50	57	12.3%	3.7% (n=1028)
1840–1914	3	24	27	11.1%	5.4% (n=764)

Table 3. The distribution of adverbs with respect to finite auxiliaries and non-finite main verbs from Early Middle to Late Modern English in subordinate clauses with a trace in subject position (PPCME2, PPCEME, PCEEC, PPCMBE)

Periods	AdvAuxV	AuxAdvV	Total	%AdvAuxV	%SAdvAuxV with overt subject
1150–1250	24	50	74	32.4%	15.9% (n=271)
1250–1350	7	12	19	36.8%	6.2% (n=97)
1350–1420	90	66	156	57.7%	7.0% (n=587)
1420–1475	20	57	77	26.0%	3.1% (n=752)
1475–1500	14	30	44	31.8%	4.7% (n=342)
1500–1525	40	55	95	42.1%	4.5% (n=359)
1525–1550	52	95	147	35.4%	5.2% (n=884)
1550–1575	40	112	152	26.3%	6.0% (n=868)
1575–1600	71	151	222	32.0%	3.4% (n=1128)
1600–1625	48	187	235	20.4%	2.6% (n=1227)
1625–1650	34	124	158	21.5%	2.6% (n=1153)
1650–1700	67	363	430	15.6%	2.2% (n=2726)
1700–1770	7	117	124	5.6%	3.9% (n=789)
1770–1840	6	137	143	4.2%	3.7% (n=1028)
1840–1914	8	65	73	11.0%	5.4% (n=764)

The results of Tables 2 and 3 are graphically represented in figure 1.

Figure 1. The placement of adverbs with respect to finite auxiliaries in conjoined clauses without an overt subject, subordinate clauses with a trace and clauses with an overt subject from Early Middle to Late Modern English
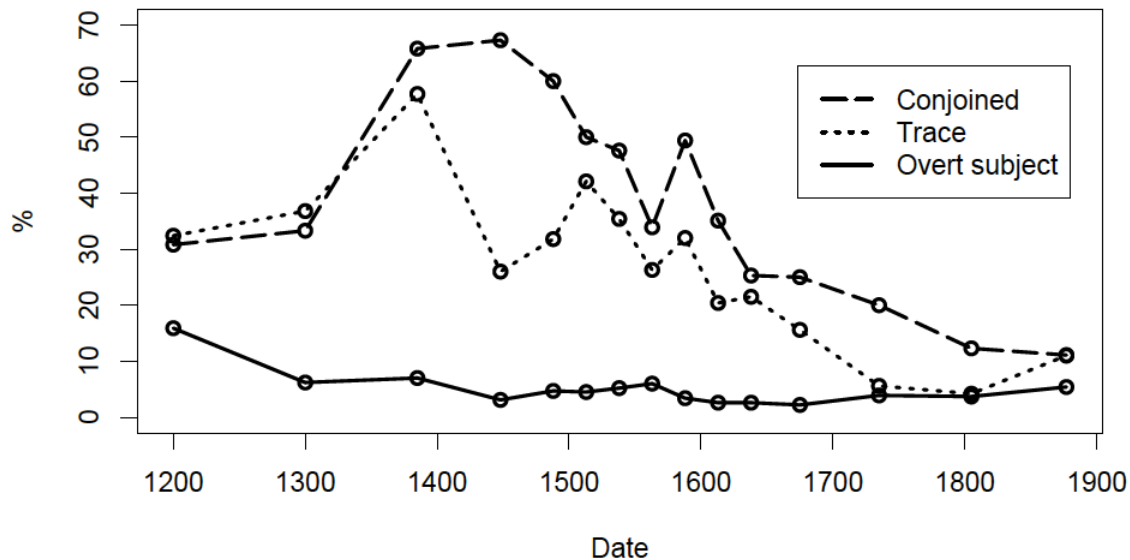
The data above show that in clauses without an overt subject the rate of pre-auxiliary placement of adverbs is substantially higher than in clauses with an overt subject. For most periods up to 1700, the differences are highly significant.[8] Furthermore, the rate of AdvAuxV order is generally higher in conjoined clauses than in clauses containing a trace, but these differences are only occasionally significant (in five periods overall). Focusing on the contrast between clauses with an overt subject and those without, we can observe that, after a peak around 1400, the difference gradually declines and starts losing statistical significance from the 18th century onwards, first with clauses containing a trace, then, in the period 1840–1914, also with conjoined clauses. Nevertheless, the rates of AdvAuxV order for clauses with a subject gap remain somewhat higher than for clauses with an overt subject up to the end of the 19th century, and this contrast is confirmed by Jacobson's (1975: 356) data based on more recent texts.

   In our discussion in section 3, we only included clauses with overt subjects on the grounds that, in clauses without an overt subject and the order AdvAuxV, we cannot conclusively determine whether such clauses are the result of a non-overt subject in a structure of the type SAdvAuxV or in a structure of the type AdvSAuxV. An initial hypothesis could be then that the differences between Table 1 and Tables 2/3 are simply due to the fact that the rates for clauses without subjects combine two structures with the adverb in different positions (Adv*SU*AuxV and *SU*AdvAuxV) whereas those for clauses with an overt subject correspond to a single structure (SAdvAuxV but not AdvSAuxV). Although this contrast may indeed contribute to the quantitative difference between clauses with an overt subject and those with a gap, we do not think that it is the sole source.

   Evidence for this claim comes from data that take into account the pre-subject adverb position in an otherwise identical clause type context. Table 4a shows the distribution of adverbs in (free) relative clauses and indirect questions with an overt subject and a trace other than the subject for two large periods, late ME (1350–1500) and EModE (1500–1700). This table includes the pre-subject adverb position (AdvSAuxV) and the two orders in which the adverb is adjacent to the auxiliary (SAdvAuxV and SAuxAdvV). This allows us to calculate the frequency of pre-auxiliary placement with AdvSAuxV and SAdvAuxV combined. These

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[8] The only exception is found in the first two ME periods with conjoined clauses where the differences are not statistically significant. However, this is likely to be due to the low number of tokens.

figures can then be compared to the data for subject trace clauses in Table 4b, which are based on Table 3.

Table 4a. The distribution of adverbs with respect to subjects, finite auxiliaries and non-finite main verbs in Late Middle and Early Modern English (free) relative clauses and indirect questions with a non-subject trace (PPCME2, PPCEME, PCEEC)

Periods	AdvSAuxV	SAdvAuxV	SAuxAdvV	Total	AdvSAuxV + SAdvAuxV	% AdvSAuxV + SAdvAuxV
1350–1500	20	9	170	199	29	14.6%
1500–1700	161	45	1172	1378	206	14.9%

Table 4b. The distribution of adverbs with respect to finite auxiliaries and non-finite main verbs in Late Middle and Early Modern English (free) relative clauses and indirect questions with a subject trace (PPCME2, PPCEME, PCEEC)

Periods	AdvAuxV	AuxAdvV	Total	% AdvAuxV
1350–1500	124	153	277	44.8%
1500–1700	352	1087	1439	24.5%

If AdvAuxV in clauses with a subject trace were simply a combination of pre-subject placement of adverbs and placement of adverbs between the subject position and the auxiliary, we would expect the rates shown in the final columns in Tables 4a and 4b to be roughly identical. However, this is by no means the case. Pre-auxiliary placement is much more frequent in clauses with a subject trace than would be expected on the basis of the corresponding clauses with an overt subject, and the differences are highly significant for both periods. This suggests that the high rate of AdvAuxV in clauses with a subject gap cannot simply be related to the potential inclusion of adverbs in pre-subject position in our counts. Instead, what could also be argued to play a role is that the absence of an overt subject in the subject position favours the use of the structural option that derives SAdvAuxV orders.[9] As to why a subject gap might have such an effect, a possible hypothesis would be that prosodic factors are involved. More precisely, the adverb could be argued to have the role of filling a prosodic gap left by the subject in a way that is reminiscent of Stylistic Fronting in Icelandic (cf. e.g. Maling 1980 on the subject gap condition with Stylistic Fronting, and Wood 2011 on the role of prosody). A more detailed exploration of the interaction between prosody and syntax in the history of English would be required to evaluate the above hypothesis, but this would go beyond the scope of this paper.[10] Instead, what is essential for the purposes of the issue addressed in this section is the observation that clauses without an overt subject provide a context in which AdvAuxV is heavily favoured to a large extent from early ME up to around 1700. As a consequence, this context can be argued to have contributed to the maintenance of SAdvAuxV order in ME and EModE.

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[9] The alternative would be that it is pre-subject placement of the adverb that is favoured in the absence of an overt subject. However, if we assume that this structural option involves the left-periphery, which contains layers of structure that are related to interpretation (topic, focus), it would be unclear why the use of these layers should be influenced by the (non-)overtness of the subject.

[10] Note that the period during which the subject gap effect can be observed coincides with the period showing the (much smaller) subject pronoun/full DP subject contrast identified in section 3.2.2. It would therefore be tempting (but equally speculative at this point) to extend a prosodic account to that effect as well.

5. CONCLUSION

In PDE, clause-medial adverbs can occur both to the immediate right of finite auxiliaries and to the immediate left. However, the former option is strongly preferred by speakers and considerably more frequent in corpora. In this paper, we have examined how this situation emerged diachronically. We have shown that the PDE imbalance with respect to the status of SAdvAuxV and SAuxAdvV corresponds to a large extent to what can be observed throughout the entire history of English. Leaving aside the influence of head-final structure in the earliest periods of English, the frequency of SAdvAuxV order measured against SAuxAdvV systematically ranges between 2% and 7% in the historical corpora we examined.

A typical scenario in cases of linguistic variation is that one of the two options is driven out over time. Our findings show that this is not what has happened with the SAdvAuxV/SAuxAdvV variation and that instead a clear minority option has been maintained for over 1000 years. This leads to the question as to why the word order SAdvAuxV has been so resistant to loss in the history of English. We have identified several factors that may play a role. First, the variation with respect to adverb placement may never have developed the typical sociolinguistic dynamics observed in cases where an innovation drives another option out. Although we see a considerable increase in the surface word order SAuxAdvV at the expense of SAdvAuxV after OE, the transition from OE to ME can be argued to be much smoother if we focus on underlying (head-initial) structure. Secondly, throughout the history of English, there are factors that either favour pre-auxiliary placement of adverbs or make it necessary. In ME and EModE, pre-auxiliary placement of adverbs is strikingly more frequent in clauses without an overt subject, with rates reaching 20–70% rather than the 2–7% found with clauses with an overt subject. Once the importance of this context starts weakening, two different ones emerge from the 16th century onwards in which adverb placement is not variable and SAdvAuxV order is mandatory: (i) clauses with adverb scope over reduced negation, and (ii) clauses with non-low stress on the auxiliary as found for example with ellipsis. In all these contexts, semantic (scope) or prosodic (subject gap, ellipsis) factors can be argued to lead language learners to postulate a syntactic option that derives AdvAux order. Assuming that these specific contexts cannot be encoded in the syntax in any way, the syntactic option deriving AdvAux then becomes available more generally, giving rise to the observed low-frequency occurrence of SAdvAuxV order and its stability over time in other environments. An issue that we will have to leave open here and to which we will return in future work is how these developments can be captured in structural terms.

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