

REVISITING THE LOSS OF VERB MOVEMENT IN THE HISTORY OF ENGLISH

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Abstract Most of the discussions of the loss of verb movement in the history of English have focused on data related to the rise of *do*-support. In this paper, we extend the empirical basis to evidence from adverb placement. Our analysis of the distribution of finite main verbs with respect to adverbs in a range of prose texts in the history of English shows that the decline of V-movement in English starts in the middle of the 15th century and that verb movement past adverbs is lost to a large extent around the middle of the 16th century. These observations differ considerably from what data involving the sentential negator *not* indicate. According to that evidence, the loss of verb movement is a rather long process starting in the 16th century and coming to completion over 200 years later. In order to reconcile the conflicting diachronic evidence from adverb placement and the syntax of negation, we propose that the loss of verb movement in English is not a single event but occurs sequentially. In a first phase, verb movement to T is lost while movement to a lower inflectional head is maintained. In a second phase, verb movement starts being lost completely. We show that the Rich Agreement Hypothesis, which has been very prominent in accounts of variation with respect to verb movement, cannot capture these developments in a satisfactory way. Instead, it is verbal morphology more generally that will be argued to play a role in connection with the occurrence of verb movement. However, we do not postulate a strong correlation between morphology and syntax and propose that the loss of verb movement in English is the result of a combination of factors: changes in the verbal morphosyntax (loss of subjunctive, rise of periphrastic forms), an acquisitional bias towards simpler structures, the decline of the subject-verb inversion grammar found in early English, and effects of dialect contact.

Keywords Adverbs, Early Modern English, history of English, Middle English, Old English, negation, verb movement, word order change

1 INTRODUCTION

Languages vary in the distribution of finite main verbs with respect to adverbs and negation. A well-known example of this observation is the following contrast between English and French:

- (1) a. John often **reads** this newspaper. *English* (AdvV)
b. Jean **lit** souvent ce journal. *French* (VAdv)
- (2) a. John does not **read** this newspaper. *English* (NegV)
b. Jean ne **lit** pas ce journal. *French* (VNeg)

In English, main verbs follow certain adverbs and negation (1a, 2a) whereas they precede these elements in French (1b, 2b). The opposite word orders are ruled out in each language, as illustrated for adverbs in (3).

- (3) a. *John **reads** often this newspaper. *English* (*VAdv)

- b. *Jean souvent **lit** ce journal. *French* (*AdvV)

Ever since Emonds (1978), the type of variation shown in (1) to (3) has been extensively discussed in the generative literature (Bobaljik and Thráinsson 1998, Holmberg and Platzack 1995, Pollock 1989, Rohrbacher 1999, Vikner 1995, 1997 among many others). Although the details of these authors' analyses vary, there is a consensus that adverbs and negation occupy fixed positions in the structure (above the VP) and that variation in the placement of the verb can be analyzed in terms of whether the verb undergoes movement out of the VP or not (V-movement¹). In a language like French, the finite main verb moves to an inflectional head and thereby crosses adverbs and negation. We therefore get the VAdv/VNeg orders in (1b) and (2b). Given furthermore the standard assumption that a transitive main verb merges with its object, the movement analysis also accounts for the fact that in both (1b) and (2b) the verb and the object are not adjacent. In contrast to French, the finite main verb in English does not undergo movement, and it therefore remains to the right of adverbs and negation. Furthermore, an object generally has to be adjacent to the verb that selects it (1a/2a vs. 3a). V-O non-adjacency is possible only if the object is heavy. Such cases have traditionally been analyzed as instances of rightward movement of the object (Heavy NP Shift) rather than in terms of leftward movement of the verb. Thus, what clearly distinguishes a language that has V-movement from one that does not is whether adverbs or negation can intervene between a verb and an object that is not heavy.

The contrast between English and French with respect to V-movement is illustrated in (4), with F representing a functional head above VP.

- (4) a. ... F Adv/Neg V (O) *English* (Adv/NegV)
 b. ... V_i+F Adv/Neg t_i (O) *French* (VAdv/Neg)

In the literature, the variation in (4) has been analyzed in terms of a parameter that divides languages into those that have V-movement out of the VP and those that do not have such movement. As for the reason why languages select one parameter setting rather than the other, an influential proposal has been that the variation in (4) is closely related to morphological properties (Bobaljik and Thráinsson 1998, Holmberg and Platzack 1995, Kosmeijer 1986, Roberts 1985, Rohrbacher 1999, Vikner 1997 among others). More precisely, it has been observed that languages that have V-movement generally have relatively rich verbal agreement whereas those that have no verb movement have impoverished agreement (the Rich Agreement Hypothesis, RAH). Although some potential problems for the RAH have been raised in the literature, the validity of this correlation has recently been reasserted by Koenen and Zeijlstra (2014).

The variation in (4) can be observed not only synchronically, but also diachronically. English, for instance, used to have word orders of the French type, as the following Middle English (ME) examples from the 15th century show.²

¹ As the label of the landing site of a verb varies across different analyses (I, T, Agr etc.), we use the neutral term V-movement. Here, we will generally restrict its use to phenomena involving movement to the inflectional domain only. But cf. our discussion of Old English in section 2.2 on the possible relevance of the CP-domain in early English.

² All data in this paper are based on the following parsed historical prose corpora of English: the *The York-Toronto-Helsinki Parsed Corpus of Old English Prose* (Taylor, Warner, Pintzuk, and Beths 2003), the *Penn Corpora of Historical English* (Kroch and Taylor 2000, Kroch, Santorini, and Diertani 2004, Kroch, Santorini, and Diertani 2010) and *The Parsed Corpus of Early English Correspondence* (Taylor, Nurmi, Warner, Pintzuk, and Nevalainen 2006). We follow the referencing conventions used in these corpora.

- (5) a. Perfor I **aske now** mercy (CMKEMPE,141.3272) (VAdv)
 Therefore I ask now mercy
 ‘Therefore, I now ask mercy’
- b. Bott I **sawe noght** synne. (CMJULNOR, 60.289) (VNeg)
 But I saw not sin
 ‘But I did not see sin.’

In (5), an adverb and negation occur to the right of the finite verb in a position that breaks the adjacency between the verb and its object. Such data suggest that English underwent a diachronic change in the distribution of finite main verbs with respect to adverbs and negation. Although many present-day English (PDE) adverbs still occur in a postverbal position (6a), there are others that either can (6b) or must (6c) occur in a preverbal position. Furthermore, adverbs that do occur to the right of the main verb in PDE follow both the verb and its object and cannot intervene between the two (6d).

- (6) a. He ate late. – *He late ate.
 b. He smokes rarely. – He rarely smokes.
 c. *He smokes never. – He never smokes.
 d. He ate his dinner late. – *He ate late his dinner.
 He smokes cigars rarely. - *He smokes rarely cigars.

Given the analysis in (4) and the contrasts between (1a) and (5a) on the one hand and (2a) and (5b) on the other, the standard assumption in the literature has been that English lost V-movement in the course of its history (Roberts 1985, 1993, Kroch 1989, Pollock 1989 among many others). This loss is sometimes situated around the end of the 16th century (Roberts 1985, Kroch 1989) but remnants of V-movement have been identified until much later, i.e. the 19th century (Warner 1997). As for the rise of *do*-support, it has been considered as a consequence of the loss of V-movement.

The developments in the history of English have played an important role in the wider context of the discussion of cross-linguistic variation with respect to V-movement and the possible reasons for this parametric variation. In particular, given the proposed link between V-movement and richness of agreement, the history of English has been an important testing ground for the exact formulation of the RAH (cf. Vikner 1997, Rohrbacher 1999).

Although observations concerning the history of English have featured prominently in the discussion of the cross-linguistic variation with respect to V-movement, the empirical evidence on which these observations have been based remains incomplete. Thanks to the detailed quantitative study of the rise of *do*-support by Ellegård (1953), we have a relatively good picture of the changes related to negation as shown in (2a/5b). But there is very little empirical work on the development of the distribution of adverbs with respect to verbs as shown in (1a/5a). This imbalance is unfortunate given that the rise of *do* must involve factors that go beyond the loss of V-movement as is shown by the fact that a language can lose the latter without necessarily developing *do*-support (cf. Falk 1993 for Swedish).

The main goals of this paper are to fill the empirical gap observed above by examining the distribution of finite main verbs with respect to adverbs in the history of English, to provide a coherent account of the loss of V-movement integrating evidence both from adverb placement and from the syntax of negation, and to explore the theoretical consequences of our findings. We conclude that, contrary to what has generally been assumed, the loss of V-movement in English is not a single event but occurs in two distinct steps. Furthermore, we show that the developments in English are problematic for the RAH. Adopting basic Minimalist assumptions, we argue that morphological properties nevertheless play a role for

the occurrence of V-movement. But these properties concern verbal inflection more generally (cf. also Biberauer and Roberts 2010) and the correlation between them and syntax is a weak one. As a consequence, changes in the verbal morphosyntax (loss of subjunctive, rise of periphrastic forms) make the loss of V-movement possible but not necessary. Additional factors are argued to contribute to the decline of V-movement, in particular an acquisitional bias towards simpler structures, the decline of the subject-verb inversion grammar found in early English, and effects of dialect contact.

The paper is structured as follows. In section 2, we introduce the main features of the verbal syntax of the earliest stages of English (Old and Early Middle English). Section 3 then turns to the periods in the history of English during which changes with respect to V-movement have been argued to take place, and we provide quantitative evidence concerning the development of adverb placement with respect to finite main verbs in these periods. In section 4, we compare the results obtained in section 3 for adverbs to data involving sentential negation, i.e. the type of data that has generally been used as the primary source of evidence for the analysis of the loss of V-movement in English, and we show that the two types of diagnostics for the loss of verb movement do not yield identical results. Section 5 then integrates our findings into the theoretical debate surrounding the cross-linguistic variation with respect to V-movement, in particular the RAH, and an explanation of the changes in the verbal syntax in English is proposed.

2 VERBAL SYNTAX IN OLD AND EARLY MIDDLE ENGLISH

Although the crucial phase for the loss of V-movement falls in the Late Middle and Early Modern English periods (i.e. between around 1400 and 1700), we will first present the main aspects of finite verb placement in the earliest stages of English (Old and Early Middle English). This will provide the necessary background for our analysis of the later developments.

2.1 Methodology

Before discussing the verbal syntax of Old English, let us start by briefly making some general methodological observations that will also hold for later sections. In order to trace the development of V-movement, we will consider data involving adverbs and negation throughout the history of English. More specifically, with adverbs, we will focus on all affirmative clauses in which an overt subject precedes both a finite main verb and a one-word AdvP of any semantic type. The following considerations have led us to restrict our dataset in this way. First, we exclude negative clauses because scope interactions between negation and the adverb might influence the placement of the adverb. Second, clauses with adverbs in pre-subject position are not included in our study, either, as they generally involve the left periphery of the clause and can therefore not be used as diagnostics for V-movement (or the absence thereof). This observation also explains our focus on clauses with overt subjects. It is only with such clauses that we can be certain that a preverbal adverb is in the inflectional domain and not in the left periphery. Third, throughout this paper, we will focus on the distribution of AdvPs consisting of a single adverb. The reason for this is that claims concerning the absence of V-movement in PDE have been based on the occurrence of adjuncts in a position between the subject and the finite verb and that the large majority of such adjuncts are one-word adverbs in PDE (Biber et al. 1999:808, Hasselgård 2010:101f.). We thus focus on elements that show clear evidence for a shift from a postverbal position to a preverbal one in the late Middle and Early Modern English periods and hence for changes in the syntax of V-movement. As larger adjuncts are not commonly found in preverbal position

in PDE, such elements would be less revealing from the point of view of the diachronic development of V-movement.³ Finally, although we will make some brief observations on different adverb types in sections 3.3 and 5.1, we generally include adverbs of all semantic types in our database because, for many periods, relevant clauses are not sufficiently frequent for analyses involving fine-grained distinctions among adverb types to be possible.

2.2 Old English

Let us start by considering the situation in Old English (OE; texts from the 9th to the 11th centuries). One of the main observations that can be made with respect to the syntax of verbs in OE is that it has striking similarities with the modern West Germanic languages (cf. van Kemenade 1987): Whereas main clauses often have word orders that are reminiscent of the Verb Second (V2) property, subordinate clauses have frequent verb-final orders. However, the parallelism between OE and modern West Germanic is only partial as OE differs from languages like modern Dutch or German with respect to both V2 and verb-final. In the recent literature, this has led to an analysis of OE that is somewhat different from the standard account of West Germanic. There is a general consensus now that we have to distinguish three positions for the finite verb in the OE clause structure and (at least) two subject positions (cf. e.g. Cardinaletti and Roberts 2002, Fischer et al. 2000, Haerberli 2000, 2002, 2005, Hulk and van Kemenade 1995, van Kemenade 2011, 2012, van Kemenade and Westergaard 2012, Pintzuk 1999). This is schematically represented in (7).

(7) 1st constituent Vf1 SU1 Vf2 SU2 (...) Vf3

The distinction between Vf1 and Vf2 is based on variation with respect to V2 in main clauses. If the first element is of a particular type (a wh-phrase, a negative element or adverbs like *þa*, *þonne* ('then')), subject-verb inversion is systematic and we get V2 regardless of subject-type. This suggests that the verb occupies Vf1 in these cases. In clauses with other initial constituents, the situation is more complex. V3 is the norm if the subject is a pronoun, whereas there is a strong tendency for subject-verb inversion, and hence V2, to occur if the subject is a full DP. However, V3 can also be found with full DP subjects. To account for these observations, it has generally been assumed that the verb targets Vf2, and that the presence or absence of inversion is related to subject placement in SU1 or SU2. Factors of information structure have been argued to play an important role in the distribution of subjects over the two subject positions in (7), with discourse-given subjects such as pronouns generally occurring in SU1 and non-given ones in SU2 (cf. Bech 2001, van Kemenade 2012, van Kemenade and Westergaard 2012).

As for the distinction between Vf2 and Vf3, it is mainly suggested by differences between main and subordinate clauses with respect to subject-verb inversion and verb-final order. Whereas subject-verb inversion is frequent in main clauses, it is generally absent in subordinate clauses unless the subordinate clause is a complement of a bridge verb or contains an unaccusative verb (e.g. Fischer et al. 2000:114ff., van Kemenade 1997). As for verb-final orders, they are very common in subordinate clauses, but much rarer in main clauses (e.g. Pintzuk 1999). Both clause type contrasts can be accounted for if the default position of the verb in main clauses is Vf2 (or Vf1) but Vf3 in subordinate clauses. As Vf3 is below SU2, subject-verb inversion is impossible in subordinate clauses regardless of subject type. Furthermore, if we assume that Vf3 is a head that Pintzuk (1999) identifies as taking its

³ It should be stressed, however, that, since AdvPs consisting of more than an adverb are considerably less common than one-word AdvPs in our corpora, the inclusion of larger AdvPs would not have altered our main findings in any substantial way.

Given the data in (11), SAdvV must be a word order that can be derived independently of head-final structure in OE.¹⁰ An analysis is suggested by (11b). In terms of the structure in (10), the subject pronoun occupies SU1. Furthermore, the floating quantifier could be argued to indicate the SU2 position. This means that the verb occupies T and the adverbs occur between SU1 and SU2.¹¹ Both of these conclusions tie in with proposals made elsewhere. That the finite verb can occasionally remain in T in main clauses is also assumed by van Kemenade and Westergaard (2012:98) to account for the absence of subject-verb inversion with certain non-discourse-given full DP subjects. In addition, from our proposal that variable directionality is related to the third verbal position Vf3 only and that Vf3 corresponds to T, it follows that the finite verb occurs in T in main clauses with head-final properties. As for the placement of the adverb between SU1 and SU2, earlier work has already shown that adverbs can be used as diagnostics for the purposes of distinguishing the two subject positions SU1 and SU2 in (10) (cf. Haeberli 2000, van Kemenade and Los 2006). Given that adverbs like *þa* or *þonne* ('then') can be argued to have the status of discourse particles (van Kemenade and Los 2006), van Kemenade (2011:89) assumes that, between what corresponds to FinP and TP in (10), there is a projection (PrtP) to the specifier of which discourse particles move. An analysis in terms of Spec,PrtP could therefore account for a considerable number of SAdvV cases in head-initial contexts since, as observed above, *þa* or *þonne* are by far the most common adverbs occurring in this word order.

In summary, we can identify three main positions in which finite verbs occur in OE. Evidence for the two higher positions, labelled as C and Fin in (10), comes from subject-verb inversion phenomena. As for the lowest position, T in (10), we have identified it on the basis of adverb placement data in subordinate clauses that are not complements of bridge verbs. Support for identifying Fin and T as distinct landing sites of V-movement is provided by the main clause/subordinate clause asymmetry with respect to verb placement. Finally, we have shown that SAdvV order is very frequent in OE and that, although many of these orders can be related to head-final structure, others are best analyzed in terms of V-to-T movement and an adverb occurring above TP.

2.3 Early Middle English

One of the major changes from OE to the early stages of the Middle English (ME) period is the decline of head-final structure. Although head-final TP may not have completely disappeared in early ME, it has become rare (Kroch and Taylor 1997, Haeberli and Ingham 2007). In most other respects, however, the OE verbal syntax is maintained in the earliest ME texts from the period 1150 to 1250. The OE system of subject-verb inversion discussed above can still be found in early ME (Kroch and Taylor 1997). This suggests that both C and Fin remain landing sites of V-movement. Furthermore, subordinate clauses that are not

¹⁰ However, the difference between the overall frequencies of SAdvV order (58.1% for main clauses, 84.8% for subordinate clauses) and the frequencies of SAdvV in clearly head-initial clauses (29.1% and 26.8%) suggests that a very large number of SAdvV orders must nevertheless be the result of head-final structure.

¹¹ Concerning the position of the finite verb, an alternative would be that OE already had word orders lacking movement of the verb out of the VP. However, examples like that in (i) below, which involves two adverbs, suggest that the verb does not remain in its base position in clauses with SAdvV order.

(i) and hi *færlice* **genamon** *eft þa boc* æt me (coaelhom,+AHom_20:169.3035)
and they suddenly took again the book to me
'and they suddenly took the book to me again'

In (i), an adverb intervenes not only between the subject and the verb, but also between the verb and the object. The latter fact suggests that the verb has left its base position.

complements of bridge verbs still provide evidence for V-movement to T. Short objects can be separated from the finite verb by an adverb in such clauses.¹²

- (12) a. and gif we **sheweð** þus *ure sinnes* ... (CMTRINIT,71.994, a1225)
 and if we show thus our sins
 ‘and if we show our sins in such a way ...’
 b. þo heo **worp** earest *hire echnen* þer upon (CMANCRIW-1,II.44.400, c1230)
 when she cast first her eyes there upon
 ‘when she first cast her eyes on it’

In addition, the emerging secondary negator ‘not’ regularly follows the finite verb in early ME subordinate clauses that are relevant for our purposes.

- (13) a. Gef ha ne **cunne** naut þe mete *graces* ... (CMANCRIW-2,II.314.4666, c1230)
 If she NE knows not the meal *graces* ...
 ‘If she does not know the mealtime prayers...’
 b. ðane þu ne **luuest** noht þe seluen (CMVICES1,37.447, a1225)
 when you NE love not you self
 ‘when you don’t love yourself.’

Based on the data in (12) and (13), we conclude that V-to-T movement occurs in early ME.¹³

As in OE, we also find SAdvV order in early ME main and subordinate clauses (Haeberli and Ingham 2007).¹⁴ If we focus on all texts from before 1250 in the *Penn-Helsinki Parsed Corpus of Middle English 2* (PPCME2),¹⁵ and we examine affirmative declarative main clauses with clearly head-initial structure (i.e. with a particle or an object pronoun following the finite main verb), we can observe two developments as compared to OE. First, the frequency of SAdvV decreases from 29.1% in OE (cf. fn. 9) to 18.4%. Second, the nature of the adverb in preverbal position changes. As pointed out above, the adverb ‘then’ is by far the most frequent one with SAdvV orders in OE. 78.6% of the head-initial SAdvV main clauses involve ‘then’. In our early ME data, however, only 4 out of the 14 clearly head-initial SAdvV main clauses contain ‘then’ (28.6%).¹⁶ In terms of van Kemenade and Los’s (2006) and van Kemenade’s (2011) analysis of OE, this suggests that the projection above TP loses its status as a projection dedicated to hosting discourse particles and becomes more generally available as a landing site for leftward movement of adverbs.¹⁷

¹² In the Middle and Early Modern English examples, the reference to the source is followed by the date of the text.

¹³ As was the case for the OE examples in (9a) to (9c), multiple extraposition of the elements to the right of the finite verb would be a possible but unattractive analysis for the cases in (12). Such an analysis can be excluded for (13), however, since there is no evidence (e.g. from clauses with a finite auxiliary and a non-finite main verb) that secondary negators can be extraposed at any point in the history of English.

¹⁴ Besides SAdvV, we can also find *SnotV* order in early ME. However, *SnotV* has been argued to be the result of residual head-final structure only (cf. Haeberli and Ingham 2007:18f.).

¹⁵ This corresponds to periods m1 and mx1 in the PPCME2. Not included in our analysis is *The Ormulum*, the only non-prose text contained in the PPCME2. The figures presented here are based on clauses containing finite main verbs only. The data in Haeberli and Ingham (2007) differ as they are based on both finite main verbs and finite auxiliaries.

¹⁶ $p < 0.001$ for the difference between OE and early ME (Fisher’s exact test).

¹⁷ That the preverbal position is a general adverb position is also suggested by Haeberli and Ingham’s (2007:8, fn. 8) observation that adverb type does not seem to play an important role with respect to the variation in SAdvV and SVAdv order in the period 1150-1250.

Although SAdvV regularly occurs in early ME main clauses, it is a phenomenon that is most frequent in subordinate clauses (Haeberli and Ingham 2007:7ff.). In our data, the frequencies of SAdvV order compared to SVAdv are double of those in main clauses (34.1% (n=44) for subordinate clauses containing a postverbal particle or object pronoun). Given furthermore that SAdvV in subordinate clauses predominantly occurs with subject pronouns, Haeberli and Ingham relate this order to the placement of the subject in the SU1 position in (10) and the occurrence of V in T, with the adverb being placed between FinP and TP. The frequency contrast between main and subordinate clauses with SAdvV order can therefore be considered as a direct continuation of the OE asymmetry resulting from V-to-T in subordinate clauses and predominant V-to-Fin in main clauses.

The amount of material available for the second early ME period in the PPCME2 (1250-1350) is very limited due to the general dearth of prose texts from this period. Three texts are included in the PPCME2, one from the beginning of the period that is too short to allow meaningful quantitative analysis and two longer ones from around 1340/1350, the *Ayenbite of Inwit* (AI) and *The Earliest Complete English Prose Psalter* (ECEPP). Taken together, the two late texts suggest that SAdvV order is in decline both in main and subordinate clauses and that the clause type asymmetry disappears as well.¹⁸

The evidence for the decline of SAdvV order in main clauses comes from ECEPP where its frequency reaches 2.5% (n=40).¹⁹ This decline might be related to the loss of the early English V2-like system that can be detected in most texts from 1350 onward.²⁰ In OE, the high frequency of subject-verb inversion together with the main clause/subordinate clause asymmetry provides evidence for V-to-Fin in main clauses. But with the loss of head-final structure in early ME and the subsequent decline of subject-verb inversion, there is little evidence for V-to-Fin left by the middle of the 14th century. This weakening of V-to-Fin opens up the possibility for clauses with the subject preceding the verb to be reanalyzed as involving V-to-T only (cf. also Biberauer and Roberts 2010:280). Thus, V-to-T starts becoming the norm in main clauses as well. At the same time, the SU1/SU2 distinction in (10) starts being weakened. Whereas this distinction can be related to discourse properties in OE, with discourse-given subjects occurring in SU1 and non-given ones in SU2, the situation changes in ME. The decline of subject-verb inversion with full DP subjects suggests that, initially, such subjects increasingly move to SU1 (cf. e.g. Haeberli 2002, van Kemenade and Westergaard 2012) and that this movement is therefore less systematically determined by discourse-giveness. At the same time, subject-verb inversion with pronouns in non-V-to-C contexts becomes more common (cf. Haeberli 2011:147 for ECEPP). This suggests that, in cases where the verb still moves to Fin, a discourse-given subject no longer has to move to SU1 but can remain in SU2. With full DPs occurring more often in SU1 and pronouns starting to remain in SU2, the two subject positions lose their distinctive properties. Given considerations of derivational economy, a plausible hypothesis would then be that the position requiring an additional movement (i.e. SU1) starts being weakened and ultimately disappears. The overall result of these changes is then that main clauses move towards V-movement to T only and to subject placement in Spec,TP. As a consequence, SAdvV declines as well.

¹⁸ As for *SnotV* order, it is virtually non-existent in the middle of the 14th century. Among 166 main and subordinate clauses with *not* following the subject, there are 4 cases in which *not* precedes the finite verb (2.4%).

¹⁹ As for AI, the frequency of SAdvV in main clauses remains at the level of the earliest ME texts (18.1% (n=72) as compared to 18.4% for the period 1150-1250). In terms of the proposals made for ECEPP below, this stagnation can be related to the fact that, as pointed out by Kroch and Taylor (1997:312), the main clause syntax of AI is conservative also with respect to V2.

²⁰ That ECEPP is among the texts that show a decline of V2 is shown by data presented in Haeberli (2011:147). In clauses with an initial non-subject and a transitive main verb, the frequency of subject-verb inversion is reduced by half compared to what is found in a sample of OE texts.

Unfortunately, ECEPP contains only three subordinate clauses with the elements that are relevant for our purposes (all having the order SVAdv). We therefore have to base our observations concerning subordinate clauses in the middle of the 14th century on AI. In this text, the frequency of SAdvV order is 13.3% (n = 60). This represents a significant decline compared to the earliest ME texts, where the frequency of SAdvV in clearly head-initial clauses is 34.1% (chi-square = 6.35; p < 0.025). Two developments can be argued to have led to this decrease. First, the contrast between the two subject positions SU1 and SU2 is weakened in ME subordinate clauses as well. Van Kemenade and Los (2006:244) relate this to “*pa/ponne* [...] losing their discourse marking properties”. Once the SU1/SU2 distinction becomes blurred, economy constraints can be argued to lead to the same development as in main clauses, i.e. to the loss of subject movement beyond Spec,TP. Van Kemenade and Los interpret these developments “as a final straightening out of the left periphery of the subclause to a fixed SVO order with a relatively straightforward functional structure in which the subject is licensed in an inflectional specifier position whose head attracts the finite verb” (2006:46). A second development may also have contributed to the decline of SAdvV order in subordinate clauses. As suggested above in connection with main clause SAdvV order in early ME before 1250, the OE discourse particle position between FinP and TP seems to have extended its role to hosting a wider range of adverbs. This extension can be related to the change in directionality in the transition from OE to early ME. A large number of SAdvV orders in OE involve structures in which the verb occurs under a head-final TP (cf. fn. 10). Once head-final TP starts disappearing, language learners reanalyze head-final cases of SAdvV as structures involving an adverb in a high position even if the adverb does not have the properties of a discourse particle. But if we assume that adverbs are merged in specific positions determined by semantic type (cf. Alexiadou 1997, Cinque 1999, Laenzlinger 1996), a general adverb position as the one postulated here above TP would have to be a landing site of adverbs moving out of their base position. Since there does not seem to be any independent motivation for this movement apart from reproducing a word order appearing frequently in the language learner’s input, it would be plausible to assume that over time this movement option starts being driven out of the grammar. This leads to a further decrease in SAdvV orders.

To sum up, while there are still three possible landing sites for the finite verb in the early ME period (C, Fin, T), V-to-Fin is weakened due to the loss of the OE main clause/subordinate clause asymmetry and the starting decline of the V2-like syntax. At the same time, the syntax of subjects starts being simplified as important evidence for the existence of two subject positions disappears in early ME. The overall effect of these developments is that both in main and subordinate clauses the finite verb mostly occupies T and the subject Spec,TP. SAdvV order, which requires subject movement to SU1, is therefore in decline, and we start approaching a situation as found in a language like French where, as the result of V-movement, adverbs generally cannot intervene between the subject and the verb. In the following section, we will consider the development of adverb placement with respect to the finite main verb after 1350.

3 ADVERB PLACEMENT FROM MIDDLE ENGLISH TO LATE MODERN ENGLISH

3.1 Adverbs and finite main verbs: General overview

It is generally agreed in the literature that late ME (1350-1500) has V-movement to the inflectional domain,²¹ and that this movement then starts being lost in the 16th century. If this is the case, we expect clear quantitative changes concerning the distribution of finite main verbs with respect to adverbs in this period. More precisely, as the verb starts losing the ability to move outside the VP, there should be a decrease in the frequency of VAdv orders and hence an increase in AdvV orders over time.

We examine this prediction by analyzing data from four parsed corpora: *The Penn-Helsinki Parsed Corpus of Middle English 2* (PPCME2; 1150-1500), *The Parsed Corpus of Early English Correspondence* (PCEEC; c.1410-1695), *The Penn-Helsinki Parsed Corpus of Early Modern English* (PPCEME; 1500-1700), and *The Penn Parsed Corpus of Modern British English* (PPCMBE; 1700-1910).²² These corpora contain prose text samples from a variety of authors and genres. As in our analysis of OE and early ME, we focus exclusively on affirmative declarative clauses with an overt subject and with a one-word AdvP of any semantic type, and we consider variation in adverb placement in the part of the clause following the subject.²³ Furthermore, we will collapse the data for main and subordinate clauses. Whereas there are very substantial frequency differences for SAdvV order between clause types in OE and the first ME period, these contrasts become less important from 1250 onwards (but cf. fn. 52 for some further observations).

Our data analyses are subdivided into historical periods following the divisions used by Ellegård (1953) in his study of the rise of *do*-support for 1420 to 1700²⁴ and the divisions used in the corpora examined (period M3 in PPCME2 corresponding to 1350-1420, and three 70-year periods in the PPCMBE).

Table 1 below provides quantitative evidence concerning the general developments in adverb placement with respect to the finite main verb from 1350 onwards. Examples (14) and (15) illustrate the types of sentences included in our counts with examples from late ME.

(14) *SAdvV*

- a. Kyng Arthure anone **graunted** hit, (CMBRUT3,79.2411; c1400)
King Arthur immediately granted it
'King Arthur immediately granted it'
- b. In this temple he often **prayed**. (CMFITZJA,A6R.88; ?1495)
- c. some poyntes that I wel **knowe** (CMREYNAR,9.81; 1481)
some points that I well know
'some points that I know well'

(15) *SVAdv*

- a. The Kyng **sent** anone messagers bider (CMBRUT3,50.1491; c1400)

²¹ Even Biberauer and Roberts (2010), who reject V-to-T movement for OE and early ME, postulate such movement for late ME (2010:278ff.). The evidence they provide for V-to-T in late ME is of the same type as shown in (9), (12) and (13) above for earlier English.

²² For our analysis of the PPCEME, we excluded all texts that are also contained in the PCEEC. Cf. http://www-users.york.ac.uk/~lang22/PCEEC-manual/corpus_description/overlap.htm 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 m23, m24, m34, mx4).

²³ A final observation with respect to the data examined concerns the particles *away*, *back* and *forth*. These are tagged as adverbs in the corpora. However, we will not include them in our database and treat them on a par with particles such as *up* or *down* instead.

²⁴ The only difference compared to Ellegård concerns period 5 (1525-1550), which is further subdivided by him into 1525-1535 and 1535-1550. For our data, there were no grounds to treat this period differently from the others.

- The king sent immediately messengers thither
 ‘The king immediately sent messengers there’
- b. Thou **seist** wel, good suster; (CMAELR4,16.456; a1450)
 You say well, good sister
 ‘You speak well, good sister’
- c. **zif** God **ziue** frely tyme, ... (CMWYCSER,I,475.3592; c1400)
 if God gives freely time ...
 ‘if God gives time freely’

TABLE 1 *The distribution of adverb and finite main verb from Middle to Late Modern English in PPCME2, PPCEME, PCEEC, and PPCMBE*

Periods	SAdvV	SVAdv	Total
1. 1350-1420	164 (9.9%)	1486 (90.1%)	1650
2. 1420-1475	161 (8.5%)	1744 (91.5%)	1905
3. 1475-1500	123 (16.5%)	622 (83.5%)	745
4. 1500-1525	211 (37.3%)	355 (62.7%)	566
5. 1525-1550	432 (33.9%)	844 (66.1%)	1276
6. 1550-1575	370 (34.9%)	690 (65.1%)	1060
7. 1575-1600	460 (34.0%)	891 (66.0%)	1351
8. 1600-1625	641 (40.9%)	925 (59.1%)	1566
9. 1625-1650	466 (39.8%)	705 (60.2%)	1171
10. 1650-1700	1259 (43.8%)	1618 (56.2%)	2877
11. 1700-1770	571 (54.4%)	478 (45.6%)	1049
12. 1770-1840	662 (56.5%)	510 (43.5%)	1172
13. 1840-1914	504 (54.2%)	426 (45.8%)	930

Table 1 shows that, up to 1475, the downward trend in the frequency of SAdvV order observed in early ME continues. Whereas the overall frequency of SAdvV order is at 12.6% in the period 1250-1350, it goes down to 9.9% in the period 1350-1420 before reaching its lowest level at 8.5% in the period 1420-1475.²⁵ In terms of the analysis adopted in section 2, this development can be related to a further decline of the distinction between the two subject positions SU1 and SU2.

The second main observation we can make on the basis of the data in Table 1 is that after a long decline of SAdvV order, this trend is reversed at the end of the 15th century. Two statistically highly significant increases in the occurrence of SAdvV order can be identified in the periods 1475-1500 (16.5%) and 1500-1525 (37.3%).²⁶ The 125 years following this initial rise of SAdvV order are then characterized by minor changes and overall stagnation. Initially, the frequency of SAdvV declines somewhat but this development is statistically insignificant.²⁷ At the beginning of the 17th century, a new rise can be observed, but it is only in the period 1650-1700 that the values for SAdvV order are significantly higher than those in the period 1500-1525.²⁸ Another significant rise then occurs in the transition from the period

²⁵ The figures for the period 1350-1420 are quite heavily influenced by one text that has a relatively high frequency of SAdvV order, *The Brut or The Chronicles of England* (86 clauses with SAdvV out of 323 (26.6%)). If we leave this text aside (cf. Haerberli 2014:7 for a possible account of its distinctive status), the frequency of SAdvV is lowest in the period 1350-1420, with 6.3%. There would then already be a significant increase from 1350-1420 to 1420-1475 ($p < 0.05$). For our purposes, the exact identification of the low point in the development of SAdvV is not crucial, however.

²⁶ Period 2 vs. period 3: chi-square = 36.35, $p < 0.001$. Period 3 vs. period 4: chi-square = 73.08; $p < 0.001$.

²⁷ Period 4 vs. period 5: chi-square = 2.02, $p = 0.16$.

²⁸ Period 4 vs. period 10: chi-square = 8.12, $p < 0.005$.

1650-1700 to the period 1700-1770.²⁹ From period 11 onwards, we find stability with frequencies around 55% up to the 20th century.

From a theoretical point of view, these results could be interpreted as meaning that V-movement declines in two phases in the history of English as the loss of V-movement leads to an increasing number of clauses with SAdvV order in each of these phases, the first one starting at the end of the 15th century and the second one starting at the end of the 17th century.

Although plausible, these conclusions may be too hasty, however. In present-day English (PDE), SAdv order is still very productive, but this order is generally not considered as being the result of V-movement to the inflectional domain. Instead, the traditional analysis is in terms of an option in adverb placement involving right adjunction to the VP.³⁰ The increase in SAdvV and the concomitant decrease in SAdv could therefore simply be a frequency shift in the usage of this adverb placement option, rather than a decline in V-movement. To evaluate the development of V-movement more conclusively, we have to consider word orders in which the adverb is postverbal but the position of the verb with respect to the adverb can plausibly be accounted for only in terms of V-movement. This is what we will do in the following two subsections.

3.2 Adverbs and finite main verbs: Clauses with objects

As observed in section 1, what clearly distinguishes languages that have V-movement from those that do not is whether postverbal adverbs productively intervene between a verb and a direct object. From the point of view of language change, this means that a language that loses V-movement loses the possibility for adverbs to occur between a finite main verb and its object.

Given this observation, we will focus on a subset of the data in Table 1, namely clauses with one nominal object, and we will examine how verb-object non-adjacency (SAdvO) develops as compared to the adjacent orders SAdvVO and SVOAdv. For the purposes of our analysis, we exclude two types of objects: (a) personal pronouns as the occurrence of object shift with pronouns (Roberts 1995) interferes with the productivity of SAdvO order in ME and Early Modern English (EModE); (b) objects consisting of more than three words as SAdvO orders with long objects might be derived through “heavy NP shift”, an option that, under the traditional analysis, derives SAdvO in PDE in terms of rightward movement of

²⁹ Period 10 vs. period 11: chi-square = 35.18, $p < 0.001$.

³⁰ As in section 2, we will adopt non-Kaynian clause structures for simplicity’s sake. Once again, we do not think that our main points are affected by this choice in any substantial way.

A rightward adjunction analysis would typically hold for an example like (ia). At least in certain cases, however, some form of V-movement may nevertheless be involved with postverbal adverbs. This is shown in (ib).

- (i) a. Sue looked at him carefully.
b. Sue looked carefully at him.

(ib) contains a verb with a PP complement and an intervening adverb. This suggests that PDE has a form of V-movement that allows the verb to move away from its PP complement (cf. Pesetsky 1989, Johnson 1991 for analyses along these lines). But the landing site of this movement cannot be very high as the verb still remains below other diagnostics for V-movement (*Sue never looks carefully at him.* vs. **Sue looks never carefully at him*) and it cannot be separated from a nominal object, which, in terms of Pesetsky’s and Johnson’s analyses, must undergo object shift (**Sue examined carefully the document*). Thus, if we assume that (ib) involves a short type of V-movement targeting a very low head, it could be considered as a residue of the long V-movement of the French type that we find in early English. Our focus in this paper will be on long V-movement as it is that type that shows a clear diachronic development in English, and we will generally leave issues related to short V-movement aside here. But see fn. 49 for some further observations.

the object rather than through V-movement.³¹ Illustrations of the different word order patterns included in our counts are given in (16) to (18), and the quantitative results are shown in Table 2.

(16) *SAdvVO*

- a. And he gladly **accomplished** *all goddis preceptes* (CMFITZJA,A4R.52; ?1495)
And he gladly accomplished all God's commands
'And he gladly fulfilled all of God's commands'
- b. Thys damesell than **behelde** *thys poure knyght* (CMMALORY,46.1538; a1470)
This damsel then saw this poor knight
'This damsel then saw this poor knight'

(17) *SVAdvO* (*cf. also 15a, c*)

- a. he **loued** wel *Lazar* (CMAELR4,20.555; a1450)
he loved well Lazarus
'He loved Lazarus a lot'
- b. that hyt **causyd** aftyr *many mannys dethe*. (CMGREGOR,196.1547; c1475)
that it caused after many men's death
'that it caused the death of many men afterwards'

(18) *SVOAdv* (*cf. also 15a*)

- a. I **loue** *no mete* better (CMREYNAR,56.471; 1481)
I love no food better
'I love no food more.'
- b. he **hadde** *þe book* wip hym alwey (CMPOLYCH,VI,355.2599; a1387)
he had the book with him always
'he always had the book with him'

TABLE 2 *The distribution of adverb, finite main verb, and short nominal direct object from Middle to Late Modern English in PPCME2, PCEME, PCEEC, and PPCMBE*

Periods	SAdvVO	SVAdvO	SVOAdv	Total
1. 1350-1420	29 (12.1%)	129 (53.7%)	82 (34.2%)	240
2. 1420-1475	23 (12.1%)	77 (40.5%)	90 (47.4%)	190
3. 1475-1500	8 (11.3%)	17 (23.9%)	46 (64.8%)	71
4. 1500-1525	24 (34.8%)	15 (21.7%)	30 (43.5%)	69
5. 1525-1550	53 (34.2%)	30 (19.3%)	72 (46.5%)	155
6. 1550-1575	61 (43.0%)	21 (14.8%)	60 (42.2%)	142
7. 1575-1600	94 (50.6%)	22 (11.8%)	70 (37.6%)	186
8. 1600-1625	94 (44.6%)	25 (11.8%)	92 (43.6%)	211
9. 1625-1650	66 (39.5%)	20 (12.0%)	81 (48.5%)	167
10. 1650-1700	163 (42.1%)	36 (9.3%)	188 (48.6%)	387
11. 1700-1770	106 (60.9%)	15 (8.6%)	53 (30.5%)	174
12. 1770-1840	132 (69.5%)	8 (4.2%)	50 (26.3%)	190
13. 1840-1914	88 (60.3%)	15 (10.3%)	43 (29.4%)	146

³¹ It should be pointed out, however, that the restriction to objects containing at most three words does not have an influence on the general developmental trends identified below. Thus, if we include all clauses containing a non-pronominal object in our counts, i.e. also those with four or more words, the pattern in the decrease of SVAdvO order is entirely parallel to that observed in Table 2. The developments simply take place at a slightly higher level, i.e. around 5 to 10% above the figures for SVAdvO shown in Table 2, as would be expected.

Table 2 shows that verb-object non-adjacency is very frequent in the period 1350-1420. More than half of the clauses in our dataset have the order SVAdvO.³² But in the 15th century, verb-object non-adjacency starts declining. The share of SAdvO among the three word orders in Table 2 first drops from 53.7% to 40.5% and then, in the period 1475-1500, to 23.9%. Both of these decreases are statistically significant.³³ After 1500, there is a further downward trend but it is slow and none of the changes from one period to the next are statistically significant. In the period 1575-1600, we finally reach the level of around 10% that holds until the 20th century.³⁴ Thus, instead of the two significant developments around 1500 and 1700 observed with SAdvV/SVAdv order in Table 1, we can only identify one such development with respect to SVAdvO order in Table 2 and it is situated in the 15th century. This suggests that the main change with respect to V-movement to the inflectional domain occurs in this period.

Furthermore, the data in Table 2 allow us to rule out the possibility, considered at the end of section 3.1, that changes with respect to SAdvV/SVAdv order are only due to shifts in the usage frequencies of adverb placement options. In particular the changes around 1500 cannot be related to a decrease in the use of adverb adjunction to the right. Right adjunction is represented by the word order SVOAdv in Table 2. If we consider the development of this word order pattern from 1350 onwards, we can observe that its frequency starts at 34.2% in the period 1350-1420 and then slightly rises to frequencies ranging around 40 to 50% in the period 1420-1700.³⁵ It is therefore not the case that what used to be right-adjoined adverbs

³² Similar frequencies can also be found in the early ME periods discussed in section 2.3. In the period 1150-1250, SVAdvO order occurs in 46.1% of the relevant clauses (n=91), whereas in the period 1250-1350 the frequency is 57.7% (n=26).

³³ SVAdvO compared to SAdvVO/SVOAdv, period 1 vs. period 2: chi-square = 7.43, $p < 0.01$; period 2 vs. period 3: chi-square = 6.17, $p < 0.025$.

³⁴ A potential question that may arise here is why, in our data, the frequency of verb-object non-adjacency remains at a non-negligible level of around 10% from the end of the 16th century to the 20th century although this order is not generally considered as grammatical in PDE. There are various factors that may explain why we can still observe a considerable number of word orders falling into the category SVAdvO in our data: (a) Although it is on its way out now, the V-movement option has been maintained with main verb *have* in British English until today (possibly by analogy to auxiliary *have*). Several examples in our data set indeed involve finite main verb *have* (e.g. 11 out of 20 cases of SVAdvO in period 9 involve main verb *have*, or 8 out of 15 in period 11). (b) Punctuation occasionally suggests that certain adverbs are used parenthetically. (c) Some degree adverbs such as *rather* or *quite* are sometimes parsed as VP-adverbs in the corpora (SVAdvO) although an analysis of these adverbs as modifiers contained in the object would be conceivable as well. (d) A similar observation can be made with respect to certain PPs that follow the object in SVAdvO order. They could sometimes be interpreted as modifying the object rather than the VP, thus making the object heavy and a potential candidate for heavy NP shift. (e) Objects of three or less words may not be entirely banned from undergoing heavy NP shift (cf. e.g. contrastive focus).

Although the options in (a) to (e) may not account for all the remaining cases of SVAdvO order from the middle of the 16th century onwards, they cover a considerable number of those and the frequencies could therefore be argued to be closer to 0 than the data in Table 2 suggest. However, as it can be difficult to determine e.g. whether an adverb is used parenthetically or whether an adjunct modifies the VP or the object, we did not try to eliminate examples that could be of type (a) to (e) from our data. Instead, we simply adopted the structures proposed in the corpora and based our quantitative data on those. Assuming that the scenarios in (a) to (e) are spread more or less evenly over the different periods, this decision should not affect our overall conclusion that the major developments with respect to V-movement take place around 1500. The level at which SVAdvO stabilizes after 1550 (around 10% as in our data or below if certain cases had been excluded) is not essential in this respect.

³⁵ The main exception is the period 1475-1500 with a frequency of SVOAdv of 64.8%. Both the rise from the previous period and the subsequent fall are statistically significant. Thus, it looks as if, initially, the loss of a postverbal adverb placement option (SVAdvO) is replaced by another one (SVOAdv), and that it is only then that the natural alternative in terms of a V-movement analysis, i.e. SAdvVO, takes over. We have to leave it open why this would have been the case. What is essential for our purposes is simply the fact that in the long-term development in Table 2 right adjunction does not lose ground at the expense of preverbal adverb placement.

simply shift to a preverbal position, otherwise we would expect an overall decrease in SVOAdv order while SAdvVO increases. The developments around 1700, however, could indeed be related to a decline in right adjunction of adverbs as there is an increase in SAdvVO order but no evidence for further changes in V-movement.

3.3 Adverbs and finite main verbs: Evidence from individual adverbs

In addition to SVAdvO order, SVAdv could also be a diagnostic for V-movement if certain adverbs were unable to occur in a right-adjoined position in the relevant period. To determine whether an adverb cannot right-adjoin we may consider contexts with non-finite verbs. Under the assumption that non-finite verbs do not undergo movement at any point in the history of English, the only possible analysis of an adverb to the right of a non-finite verb is in terms of right-adjunction. Hence, if an adverb never follows a non-finite verb, we can conclude that it cannot right-adjoin. By looking at the behaviour of this adverb in clauses with finite main verbs, we could then obtain further evidence on the development of V-movement since each postverbal occurrence would have to be the result of movement.

An important problem that this approach faces is that the numbers of occurrences of individual adverbs are generally very limited in our corpora. It is therefore often impossible to trace the diachronic development of a given adverb as the numbers for the individual periods tend to be too low to yield significant results. Similarly, it can also be difficult to reliably identify an adverb as having the property of not being able to right-adjoin. However, there is one adverb that is very frequent and that can quite clearly be shown to have the properties we are looking for, namely the adverb *never*.

In PDE, the adverb *never* is generally banned from a postverbal position both with finite and non-finite main verbs. Instead, it systematically occurs preverbally (cf. *He never reads this newspaper* vs. **He reads (never) this newspaper (never)*; *He will never read this newspaper* vs. **He will read (never) this newspaper (never)*). This observation is confirmed by corpus data. In a corpus containing 460 clauses with *never*, Jacobson (1964) reports no occurrence in end (i.e. postverbal) position. Right adjunction of *never* therefore seems to be ruled out in PDE.

If *never* has the same syntactic properties throughout the history of English, it could be used as a clear diagnostic for the development of V-movement. For our purposes, we need to determine the status of *never* in ME. To do so, we examined all clauses containing an overt subject, a finite auxiliary, a non-finite main verb and the adverb *never* (and its spelling variants) in a position following the subject in the PPCME2. We found that, among 231 clauses of the relevant type between 1250 and 1500, there is only one (0.4%) with *never* after the non-finite main verb. In this 15th century example, postverbal *never* is immediately followed by the sequence *þe lesse*.³⁶ Given that the *Oxford English Dictionary* lists several late ME examples in which this sequence is already spelt as one word just like PDE *nevertheless*, it could be argued that we are dealing here with a larger unit than with simple *never*. Thus, we are left with no clear counterexample, and it seems safe to conclude that, as in PDE, right-adjunction of *never* is not an option in late ME.

A look at the diachronic development of the placement of *never* with respect to finite main verbs should now allow us to trace the decline of V-movement in the same way this was possible with SVAdvO orders in section 3.2. Table 3 below provides the relevant data (cf. Ellegård 1953:184 for similar findings).

³⁶ The relevant example is given in (i) below :

(i) & þow xalt **haue** neuyr þe lesse *grace* (CMKEMPE,48.1092; c1450)
and you shall have never the less grace
'and you shall nevertheless have grace'

TABLE 3 *The distribution of never and finite main verb from Middle to Late Modern English in PPCME2, PPCEME, PCEEC, and PPCMBE*

Periods	<i>SneverV</i>	<i>SVnever</i>	Total
1. 1350-1420	9 (14.1%)	55 (85.9%)	64
2. 1420-1475	26 (20.2%)	103 (79.8%)	129
3. 1475-1500	15 (46.9%)	17 (53.1%)	32
4. 1500-1525	17 (70.8%)	7 (29.2%)	24
5. 1525-1550	84 (89.4%)	10 (10.6%)	94
6. 1550-1575	112 (95.7%)	5 (4.3%)	117
7. 1575-1600	91 (93.8%)	6 (6.2%)	97
8. 1600-1625	123 (93.2%)	9 (6.8%)	132
9. 1625-1650	75 (93.8%)	5 (6.2%)	80
10. 1650-1700	211 (98.1%)	4 (1.9%)	215
11. 1700-1770	73 (100%)	0 (0%)	73
12. 1770-1840	82 (100%)	0 (0%)	82
13. 1840-1914	62 (98.4%)	1 (1.6%)	63

Once again, we can observe a major phase of change around 1500. Whereas the frequency of *SVnever* order is 79.8% in the period 1420-1475, it rapidly drops to 10.6% in the period 1525-1550, with the declines from period to period being statistically significant in two out of the three cases.³⁷ After 1550, we see the tail end of the change, with some remaining examples of *SVnever* order in the first few periods and virtually none in the Late Modern English data.

Given that, as argued above, *never* cannot be right-adjoined during this period, the surface word order change shown in Table 3 can be interpreted as a direct reflection of the development of V-movement. The data thus suggest that V-movement starts declining in the middle of the 15th century and that it is to a large extent lost by 1550. No further developments can be identified after 1550.

Unfortunately, it is difficult to come up with similar evidence for other adverbs. One potential candidate would be the adverb *always*. Like *never*, it is also to a large extent absent from postverbal position in PDE (Jacobson 1964). However, *always* only occurs in very few clauses in each of the periods that are relevant for the change examined here. Even if we add another frequency adverb like *often*, the data remain too limited to allow meaningful quantitative analysis.

What is more revealing is a look at two manner adverbs, *heartily* and *humbly*. These are used very frequently in the correspondence corpus (PCEEC) in contexts like the following:

(19) *SVAdv*

- a. I pray yow hertly þat ... (PASTON,I,279.093.2680; 1462)
I pray you heartily that ...
'I pray you heartily that ...'
- b. Hans Nagell and Claus Baker **recommande** theym humbly unto you.
(RERUM,II,383.019.222; 1505)
Hans Nagell and Claus Baker commend them humbly to you

³⁷ Period 2 vs. period 3: chi-square = 9.64, $p < 0.005$. Period 3 vs. period 4: chi-square = 3.21; $p < 0.1$. Period 4 vs. period 5: chi-square = 5.32, $p < 0.025$. It is only the transition from period 3 to period 4 that is not significant. Given that the percentages fit perfectly well into the general trend, the lack of significance is likely to be due to the small sample sizes in these two periods.

- ‘Hans Nagell and Claus Baker commend themselves humbly to you’
SAdvV
- c. And therefore we heartily **pray** you to ... (ORIGIN1,33.007.60 ; 1497)
 And therefore we heartily pray you to ...
 ‘And therefore we heartily pray you to ...’
- d. and she and my sister Ellynor humbly **recomend** them unto you,
 (PLUMPTO,167.077.1215 ; 1502)
 and she and my sister Ellynor humbly commend them to you
 ‘and she and my sister Ellynor humbly commend themselves to you’

In contrast to *never*, the adverbs *heartily* and *humbly* are not incompatible with adjunction to the right. However, in the PCEEC data involving non-finite verbs, the right-adjoined position (SAuxVAdv) is used considerably less frequently than the position to the left of the main verb (17.5% (n=63)). Adjunction to the right may therefore not interfere too strongly in our attempts to measure the decline of V-movement.

Table 4 shows the development in the placement of the adverbs *heartily* and *humbly* with respect to a finite main verb.

TABLE 4 *The distribution of ‘heartily/humbly’ (hly) and finite main verb in Middle and Early Modern English in PCEEC*

Periods	<i>ShlyV</i>	<i>SVhly</i>	Total
1. 1350-1420	0 (0.0%)	3 (100.0%)	3
2. 1420-1475	9 (15.5%)	49 (84.5%)	58
3. 1475-1500	20 (26.0%)	57 (74.0%)	77
4. 1500-1525	18 (69.2%)	8 (30.8%)	26
5. 1525-1550	47 (79.7%)	12 (20.3%)	59
6. 1550-1575	22 (78.6%)	6 (21.4%)	28
7. 1575-1600	94 (82.5%)	20 (17.5%)	114
8. 1600-1625	112 (90.3%)	12 (9.7%)	124
9. 1625-1650	92 (92.0%)	8 (8.0%)	100
10. 1650-1700	61 (87.1%)	9 (12.9%)	70

The picture that emerges from the data in Table 4 is nearly identical to that for *never* in Table 3. After the period 1420-1475, the frequency of SVAdv order drops by over 60% within a little over 50 years. What is particularly interesting here is that, although there are considerable numbers of occurrences of the adverbs *heartily* and *humbly* in the correspondence data, they modify a very limited number of verbs (mainly *pray*, *thank*, *recommend*, *beseech*). As a consequence, cases such as those shown in (19) occur repeatedly in the correspondence data and have a somewhat formulaic ring to them. Nevertheless, contrary to what one might expect from formulaic expressions, the word order is not conservative but changes in accordance with what we have seen in the other contexts.

3.4 Summary

The findings of this section are graphically represented in Figure 1 below.

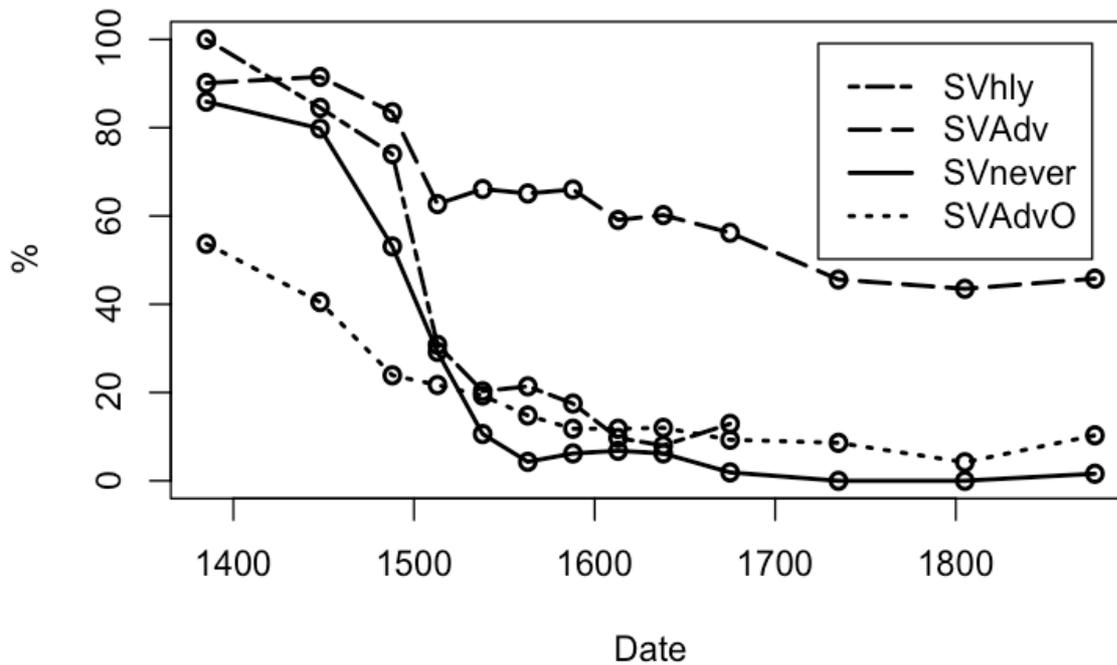


FIGURE 1 *Adverb placement in the Penn Corpora and PCEEC*

Our analysis of the distribution of finite main verbs with respect to adverbs in the history of English has shown that there are two major phases of decline of the SVAdv word order, one around 1500 and a second one around 1700. Given that, due to adjunction to the right, SVAdv order is not an unambiguous indicator of V-movement, we then focused on the development of word orders that can be considered as clear diagnostics of V-movement, i.e. SVAdvO orders, SVnever orders and, to a lesser extent, the order SVheartily/humbly. These types of evidence suggest that the decline of V-movement past adverbs to T starts in the middle of the 15th century and is to a large extent completed by the middle of the 16th century. The second decline of SVAdv order seems to be related to changes in the distributional properties of adverbs rather than to movement properties of the verb.

4 SENTENTIAL NEGATION FROM MIDDLE ENGLISH TO LATE MODERN ENGLISH

Earlier discussions of the loss of V-movement in the history of English have had the development of *do*-support as their primary empirical basis. We may therefore raise the question now whether the conclusions we have reached in the context of the placement of adverbs confirm those obtained on the basis of the rise of *do*-support. As illustrated in example (4), negation and adverbs have traditionally been treated as having the same status as diagnostics of V-movement. So we would expect then, on the basis of our discussion in section 3 and the fact that *not* can never be found in a right-adjoined position in the history of English (**He will leave not*), that *Vnot* orders were predominant up to around 1475 and that their frequency then declines rapidly to reach a very low level by 1550.

Interestingly, this expectation is not borne out. According to Ellegård's (1953:161) data, *do*-support as a replacement of *Vnot* is only a very marginal emerging option during the century we have identified as a period of major change with respect to adverb placement. The frequency of *do* in negative declarative clauses is 1.2% in the period 1425-1475, 4.8% in 1475-1500, 7.8% in 1500-1525, and 21.2% in 1525-1550. Thus, *do*-support remains a clear minority option at a time when, according to our evidence from adverb placement, V-movement has to a large extent been lost.

This conclusion is confirmed by our data. For Table 5 below, we examined all negative declarative main and subordinate clauses with an overt subject and no auxiliary other than *do* in the Penn corpora and the PCEEC. We removed two types of clauses for the purposes of our quantitative analysis: (a) from 1500 onwards, clauses containing a main verb that occurs with the order *SVnot* ten or more times in a given period; (b) from 1600 onwards, clauses from biblical texts and sermons. The aim of the first restriction is to avoid that lexical factors have too much of an influence on our quantitative findings. As is well known (cf. e.g. Ellegård 1953:199ff.), certain verbs are more resistant to the rise of *do* than others. The most striking case is main verb *have*, which is not subject to variation in our corpus and which, with the exception of two examples, systematically occurs without *do* in negative declaratives. Since *have* occurs more than ten times in each period, it is not included anywhere in our counts after 1500. Another verb that is completely excluded from our data after 1500 is *know*. Although this verb shows variable behaviour already from the middle of the 16th century onwards and although by 1700 the frequency of *do*-support is higher than that of the *Vnot* order, *Vnot* keeps occurring regularly with *know* until the 19th century. Finally, the verb *doubt* is excluded from 1500 to 1700, whereas *believe*, *come*, *do*, *go*, *hear*, *mean*, *need*, *see*, and *wot* occur more than ten times in some periods between 1500 and 1700 but not in others. They are only excluded in the periods in which they occur frequently with *Vnot* order. The second restriction in our database has the aim of avoiding some potential genre-related distortions in our quantitative data. More precisely, biblical texts and sermons are not included from 1600 onwards as they show a conservative, clearly above-average use of *SVnot* order.

Once verbs with high numbers of *Vnot* orders and religious prose are eliminated from our database, we obtain the following quantitative results.³⁸

TABLE 5 *The syntax of not from Middle to Late Modern English in PPCME2, PPCEME, PCEEC and PPCMBE*

Periods	<i>SnotV</i>	<i>SVnot</i>	<i>Sdo-notV</i>	Total
1. 1350-1420	4 (0.7%)	589 (99.1%)	1 (0.2%)	594
2. 1420-1475	2 (0.2%)	510 (98.3%)	8 (1.5%)	519
3. 1475-1500	0 (0.0%)	216 (99.5%)	1 (0.5%)	217
4. 1500-1525	3 (1.6%)	106 (86.2%)	15 (12.2%)	123
5. 1525-1550	9 (1.1%)	379 (85.8%)	58 (13.1%)	442
6. 1550-1575	4 (0.9%)	214 (65.9%)	108 (33.2%)	325
7. 1575-1600	8 (0.2%)	273 (58.1%)	196 (41.7%)	470
8. 1600-1625	2 (0.5%)	252 (68.5%)	114 (31.0%)	368
9. 1625-1650	0 (0.0%)	206 (58.9%)	144 (41.1%)	350
10. 1650-1700	11 (1.1%)	310 (30.1%)	707 (68.8%)	1028
11. 1700-1770	13 (3.4%)	44 (15.2%)	236 (81.4%)	290
12. 1770-1840	4 (1.0%)	42 (10.4%)	358 (88.6%)	404
13. 1840-1914	8 (2.7%)	7 (2.5%)	271 (94.8%)	292

The data in Table 5 show that until 1500 *SVnot* is virtually the only way to express sentential negation with a finite main verb. *SnotV* order and *do*-support are used very sporadically at that point. It is only from 1500 onwards that *SVnot* order starts declining. However, the decline is slow, and in the period 1525-1550 we remain far from the low frequency that we would expect on the basis of the adverb data, with *SVnot* still being used in 85.8% of the negative clauses examined. *SVnot* even remains the majority option until 1650. The productivity of *SVnot* up to the middle of the 17th century is also illustrated by the fact that, in

³⁸ For the overall figures including high frequency verbs and religious prose see Haerberli and Ihsane (2014).

addition to the high frequency verbs, this word order occurs with 103 other main verbs during the period 1625-1650. It is only in the second half of the 17th century that *SVnot* starts its decisive decline that leads to the present-day situation where *do*-support is obligatory in contexts without another auxiliary. Within about a hundred years the use of *SVnot* drops by over 40%, from 58.9% in the period 1625-1650 to 15.2% in the period 1700-1770.

One final important aspect of the data in Table 5 concerns the word order *SnotV*. In a language that loses V-movement, *SnotV* might be expected to be the natural successor to the *SVnot* order. This is indeed the change that occurred in Swedish (Falk 1993). In English, however, *SnotV* never seems to be a viable option after the early ME period. The frequency of occurrence of this word order is negligible in all periods in Table 5. Furthermore, in most of the examples counted as *SnotV*, *not* is immediately followed by *only*, so we find a word order that is still possible in PDE.³⁹

5 ANALYZING THE DECLINE OF V-MOVEMENT

5.1 A sequential loss scenario

From the point of view of V-movement, the results in Table 5 lead to an entirely different scenario as compared to that obtained on the basis of the adverb data in Tables 1 to 4. Whereas the adverb data suggest that there is a rapid decline in V-movement starting in the middle of the 15th century, the negation data seem to show a very slow decline starting from 1500 with V-movement remaining very strong up to 1650. The major decline in V-movement then appears to occur from 1650 onwards. As for the completion of the change, we can identify it only in the 18th century in the negation data, whereas the evidence from adverbs suggests completion in the middle of the 16th century.

This contrast between adverbs and negation is illustrated in Figure 2. It compares word orders for which the frequencies of occurrence develop towards 0% in the period under investigation, i.e. *SVnot* order for negation and *SVheartily/humbly* (*SVhly*), *SVnever*, and *SVAdvO* for adverbs.

³⁹ As for example in:

(i) ... after a spot of treatment *he not only played* on without complaint ... but promised to emerge 100% fit for the match ... (<http://www.guardian.co.uk/sport/2012/jul/02/roger-federer-xavier-malisse-wimbledon>)

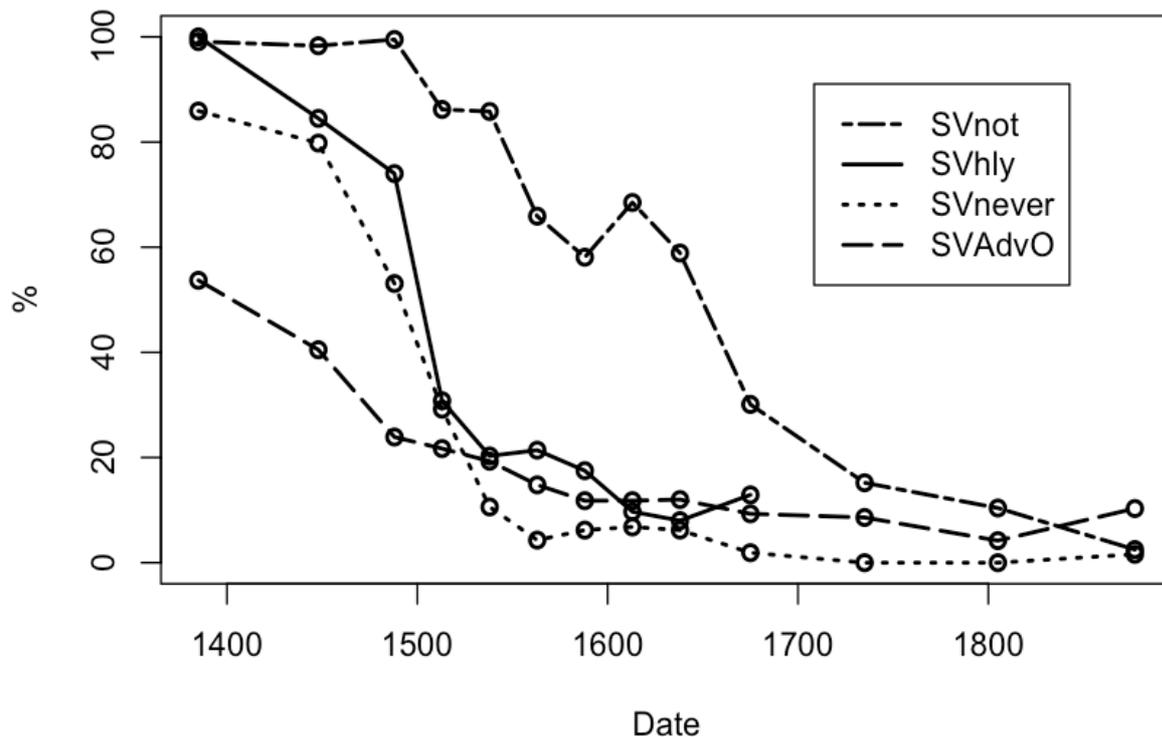


FIGURE 2 *The placement of Adverbs and Negation in the Penn Corpora and PCEEC*

The question that arises then is why there is such a mismatch between the evidence from adverb placement and the evidence from negative clauses. What we propose here is that the loss of V-movement to the inflectional domain is not a one-step process as it has generally been described. Instead, we interpret the findings in Figure 2 as meaning that the loss consists of two distinct stages, the first one affecting movement beyond adverbs, and the second one affecting movement beyond negation.

In structural terms, this development can be analyzed as follows. Assuming that English finite clauses have a single dedicated position for negation (NegP) that is immediately above VP from early ME onwards (cf. Haeberli 2011, Haeberli and Ingham 2007), the second step, which leads to the decline of *Vnot* order and which starts in the 16th century, corresponds to the complete loss of finite main verb movement. As for the first step in the change, which begins in the middle of the 15th century and which is completed in the middle of the 16th century, it leaves the verb in a position above NegP but at the same time in a position that is lower than the head position it occupies in the early 15th century. In our discussion in section 2, we concluded that by late ME, the main target of V-movement is T. Stage one of the loss of V-movement must therefore change the target of V-movement from T to a head between T and Neg. The main questions then are what the nature of this intermediate landing site of V-movement is and why the change happened sequentially.

Before turning to these questions, let us briefly consider one important consequence of the sequential loss scenario proposed above. In the references cited in section 1, movement of the finite main verb is generally treated as an all-or-nothing option: Either a language has finite V-movement to the inflectional domain, or it does not have it. The decline of V-movement in the history of English suggests, however, that there can be intermediate stages during which V-movement is available but that it does not target the highest area of the functional domain. There is therefore not a simple V-movement parameter, but parametric variation determining movement to different heights in the structure.

There is growing evidence suggesting that such a view is correct. Most interesting for our purposes here is work by Han (2000) and Han and Kroch (2000), which also deals with the loss of V-movement in the history of English. Although Han and Kroch focus on a different empirical domain, their conclusions converge to a large extent with ours. Considering some contrasts in the frequency of use of *do*-support in interrogatives, negative declaratives and negative imperatives between 1400 and 1650, Han and Kroch conclude that, when *do*-support emerges in interrogatives in the early 15th century, English starts losing V-movement to a high functional head. However, they assume that movement to a lower functional head is still possible at that time. According to Han and Kroch's analysis, it is then the emergence of *do*-support in negative imperatives in the second half of the 16th century that indicates the beginning of the change towards a grammar that lacks V-movement out of the VP entirely. Thus, the sequential loss scenario proposed here on the basis of the placement of adverbs and negation receives entirely independent confirmation from another study on the development of V-movement in the history of English.

That negation and adverbs do not give the same result when used as diagnostics for V-movement is not exclusive to our data, either. Wiklund et al. (2007) indeed make a similar observation for Regional Northern Norwegian (ReNN). Interestingly, however, the pattern they identify is exactly the opposite of what we have found for the intermediate stage in the loss of V-movement in English. Whereas the finite main verb can optionally occupy a position to the left of adverbs in ReNN, it can never move past sentential negation.

Finally, evidence from the distribution of adverbs alone has also been used to postulate different targets of V-movement in the inflectional domain. This is the case for the Romance language family. The Romance languages have often been treated in the literature as behaving uniformly with respect to V-movement. However, once we assume an adverbial hierarchy of the type proposed by Cinque (1999) (cf. also Alexiadou 1997, Laenzlinger 1996) and an articulated clause structure with projections hosting adverbs of specific types, we can observe that the finite verb does not seem to target the same position across Romance (cf. e.g. Ledgeway 2012:140ff, Schifano 2014). In her comparative analysis of a range of varieties of Romance, Schifano (2014) indeed identifies four distinct landing sites of V-movement to the inflectional domain, with the highest one being used in French, the next lower one in northern regional Italian, the third one in European Portuguese, and the lowest one in Spanish.

Given these observations about Romance, we may wonder whether, by distinguishing different adverb types, we are able to identify further intermediate stages in the loss of V-movement in English as it would be conceivable that each of the landing sites identified by Schifano corresponds to an intermediate step in the loss. Such a scenario could be postulated if the class of adverbs preceding the finite verb were gradually expanded in a way that reflects the adverbial hierarchy from top to bottom. Starting from a semantically very restricted set of adverbs that are located high in the adverbial hierarchy, more and more adverb types should start preceding the verb over time.

An examination of our corpora in view of this scenario does not provide any evidence for its validity. In the period 1420-1475, which has the lowest frequency of SAdvV order in the entire history of English (8.5%), there is no clear restriction on the semantics of the adverbs preceding the finite verb. Example (20) gives an overview of these adverbs in our corpus (adverbs are given in PDE spellings).

- (20) Adverbs in the order SAdvV, 1420-1475: *again, always, anon, before, best, boldly, cruelly, dearly, ever, first, goodly, here, highly, mightily, marvellously, never, unwisely, singularly, so, suddenly, specially, steadfastly, sweetly, then, there, thus, utterly, well.*

The adverbs in (20) represent a semantically heterogeneous group, which, in terms of a structural hierarchy of adverbs as proposed by Cinque (1999:106), cannot be located only at the top of the structure. A clear example here is the adverb *well*, which occurs in the fifth lowest projection in Cinque's structure that contains 30.⁴⁰

As proposed in section 2.3, it is likely that, in ME, leftward movement of the adverb plays an important role in the derivation of SAdvV order before the decline of V-movement. Leftward movement disrupts the basic hierarchical order of adverbs, and it therefore prevents us from using adverb type as a criterion for determining the exact location of the verb in a fine-grained inflectional structure.

Comparisons of preverbal adverbs in the crucial periods after 1475 do not suggest additional stages in the loss of V-movement, either. As pointed out in section 3.3, a precise diachronic analysis is difficult due to the generally low numbers of occurrences of individual adverbs per period in our material. But on the basis of our evidence, we have not been able to identify clear shifts of specific adverbs (with the exception of those mentioned in section 3.3) or adverb classes from post- to pre-verbal position at different chronological stages of the corpora examined. Given all the above observations, we are led to conclude that movement past adverbs is lost in a single step and that no intermediate stages affecting different adverb types can be identified.

In the remainder of this paper, we will examine how the diachronic development of V-movement as identified above can be analyzed.

5.2 The Rich Agreement Hypothesis

As pointed out in section 1, a recurrent theme in the literature on V-movement has been the question of the possible influence of morphological properties on the syntax. It has frequently been proposed that the availability of V-movement in a language is related to the presence of rich verbal agreement morphology and the lack of V-movement to the absence of such morphology (the Rich Agreement Hypothesis (RAH); e.g. Bobaljik and Thráinsson 1998, Holmberg and Platzack 1995, Kosmeijer 1986, Roberts 1985, Rohrbacher 1999, Vikner 1997). Given the important role the RAH has played, let us briefly examine to what extent properties of the verbal agreement morphology could account for the diachronic developments we have observed in the previous sections.

An initial observation to be made is that proposals in terms of the RAH generally refer to V-movement as an all-or-nothing option. If a language has a certain type of agreement morphology, it must have V-movement. If it does not have such morphology, it cannot have V-movement (the strong version of the RAH) or no predictions are made concerning the existence of V-movement (the weak version of the RAH). Nothing in these accounts would allow one to distinguish different landing sites of V-movement. So if, as proposed here, V-movement can target different positions in the inflectional domain, additional factors have to be postulated that determine where a verb stops. Agreement morphology alone would not be sufficient to fully account for the distributional properties of finite verbs. For our purposes, this means that the RAH could at best explain one of the two diachronic developments we have identified for English. Let us briefly consider whether this is the case.

Various versions of the RAH have been proposed in the literature. They differ with respect to what is considered as rich agreement and with respect to whether the relation between morphology and syntax is strong or weak. It would lead us too far afield here to review all the different versions of the RAH that can be found in the literature. Instead, we

⁴⁰ Illustrations from the period 1420-1475 are given in (i).

- (i) a. Unto that they all well accordyd. (CMMALORY,5.110)
b. ... if we wel do. (CMAELR4,7.185)

simply focus on the most recent approach, which is put forward by Koenenman and Zeijlstra (2014). These authors defend the RAH in its strong form against apparent counterevidence discussed in the literature, and they address shortcomings of earlier versions of the RAH.

According to Koenenman and Zeijlstra (henceforth K&Z), a language has rich agreement and hence V-movement “if and only if the regular paradigm manifests featural distinctions that are at least as rich as those featural distinctions manifested in the smallest pronoun inventories universally possible” (2014:576). The relevant features K&Z identify are [\pm speaker], [\pm participant] and [\pm plural]. According to this definition, PDE has poor agreement because the features [$-$ participant] and [$-$ plural] are sufficient to distinguish 3rd person singular (3sg) agreement *-s* from all the other (zero) forms, and there are therefore no distinctions involving the feature [\pm speaker]. In Icelandic, on the other hand, which has different forms throughout the regular paradigms with the exception of one syncretism per tense (2sg/3sg in the present, 1sg/3sg in the past), the distinctions cannot be made without reference to all the three types of features identified by K&Z. As for the link to V-movement, K&Z propose that languages with rich agreement have a head in the inflectional domain that encodes argumenthood. This head, Arg(ument), must be affixed to V and, under the assumption that lowering is not a possible process, affixation is only possible through raising of V. For languages with poor agreement, K&Z assume that they do not have the head Arg and that V therefore does not leave the VP.

Let us now consider K&Z’s proposals in the light of the developments we have observed for the history of English. The basic ME verbal paradigm for the present indicative qualifies as rich in K&Z’s system as it has different forms for 1sg (*-e*), 2sg (*-est*) and 3sg (*-eth*, *-es*) and for the plural (*-eth*, *-en*), thus making [\pm speaker] necessary for the distinction between 1sg and 2sg, [\pm participant] for the distinction between 2sg and 3sg and [\pm plural] for the distinction between the plural and the singular forms.

As long as the ME agreement system is maintained, V-movement cannot be lost according to K&Z’s proposal: If agreement morphology is rich, the Arg-head is present in the structure and the verb must move to Arg. So is there any weakening of this system during the period we are interested in, i.e. around the middle of the 15th century when the evidence from adverb placement suggests a decline of V-movement? If we focus on the present tense, we can indeed observe a certain weakening of the 1st person singular form (cases without *-e*) and the plural (increasing reduction of *-en* to *-e* or zero). However, these developments do not have any influence on the features needed to define the different agreement endings. As long as there are three different forms in the singular and there is a singular/plural distinction for one of these, the three features [\pm speaker], [\pm participant] and [\pm plural] are needed. So what would be necessary for agreement not to count as rich any more is the loss of either 2sg or 3sg morphology. It is only after such a loss that English could have lost V-movement.

3sg morphology has been maintained until today, and it is indeed consistently present throughout the different periods of our corpora, initially realized as *-(e)th*, subsequently as *-s*. So the crucial morpheme to test the validity of K&Z’s proposal for the history of English is the 2sg *-(e)st* morpheme. It is the loss of this morpheme that turns the rich agreement paradigm of early English into the poor one in PDE according to K&Z’s definition. If we focus on the status of 2sg morphology in the period 1350-1500, we can observe that the agreement ending *-(e)st* is systematically used with the 2sg subject *thou* in our corpus.⁴¹ In terms of K&Z’s proposals, the first stage in the decline of V-movement can therefore not be related to any developments in the richness of agreement morphology.

⁴¹ *The Northern Prose Rule of St Bennet* is an exception here. This text is the only northern text in our corpus, and, as is well known (cf. e.g. Lass 1992:137), northern varieties lost verbal inflectional distinctions earlier than other varieties of ME.

But could agreement play a role in the second stage, which leads to the complete loss of V-movement? This second phase starts at the beginning of the 16th century, with V-movement slowly declining throughout the century. But again, no major developments in the 2sg morphology can be observed in this period as the *-(e)st* ending is still systematically used with the 2sg subject *thou* in our corpus. The same holds for the 17th century, when V-movement starts its final decline.⁴² Thus, we do not find the morphological change that would make the decline of V-movement possible in K&Z's framework.

In one respect, 2sg agreement is weakened, however. In the late ME period, the pronoun *you*, which is originally a 2pl pronoun, starts replacing *thou* more and more. Some time in the 16th century, *you* can be argued to have reached the status of an unmarked 2sg pronoun (Hope 1993:95), and by the 18th century *thou* is restricted to special registers like verse or religious discourse (Lass 1999:148). The 2sg agreement ending *-(e)st* never occurs with *you*. Thus, as *thou* declines and *you* becomes more common, the number of occurrences of *-(e)st* decrease.

We may wonder then whether these developments could have affected the status of V-movement in any way. In particular, one could imagine that the growing restrictions on the use of *thou* in the 15th and 16th centuries have removed it and the 2sg ending *-(e)st* from contexts that would be relevant for the purposes of L1 acquisition. However, such a hypothesis is unlikely to be correct. In its final stages, *thou* is typically used by the dominant member in socially asymmetrical relations. One of these is the parent-child relation (cf. e.g. Hope 1993:86/87 for court records from the second half of the 16th century, Walker 2007:168, 291 for witness depositions and drama comedy from 1560 to 1760). Thus, 2sg morphology would be expected to occur regularly in a child's input. Furthermore, *thou* seems to continue to play a role among equals. For example, Walker (2007:204, 224) observes the use of *thou* by young male characters of the gentry in drama comedy to mark in-group membership until the beginning of the 18th century. Overall, it thus seems rather implausible to say that the use of *thou* in the periods that are relevant for us is too restricted to have an impact on the acquisition of 2sg *-(e)st*. And as long as *-(e)st* is acquired, the verbal paradigm continues to manifest the featural distinctions [\pm speaker], [\pm participant] and [\pm plural], which entail V-movement in K&Z's system. So we would not expect any changes in the syntax of V-movement until the 17th century.

In summary, analyses in terms of the RAH generally cannot account for a sequential loss of V-movement. Furthermore, the most recent version of the RAH developed by K&Z predicts changes in the syntax of V-movement in English to occur only once 2sg agreement is lost. However, this prediction is not borne out. At the beginning of both phases of the decline we have identified, agreement morphology qualifies as rich in terms of K&Z's definition, and their hypothesis therefore seems to be incompatible with the way V-movement declines in English.⁴³

5.3 Sequential loss of V-movement – an analysis

⁴² Among 174 main clauses with the 2sg subject *thou* between 1500 and 1700, we have found only five clear exceptions to the use of the *-(e)st* ending in our corpora.

⁴³ The same conclusion is likely to hold for the version of the RAH formulated by Bobaljik and Thráinsson (1998). In their framework, a language must have V-movement if tense and agreement morphology can co-occur. Once again 2sg is the crucial context here, as it is the 2sg ending that co-occurs longest with past tense morphology in English (*-(e)d-st*). Unfortunately, 2sg past tense forms are rare in our corpus and the observations made in the literature on the loss of *-st* in the past tense are not entirely conclusive, either (cf. e.g. Lass 1992, 1999). However, there is no clear evidence suggesting that the loss of the 2sg ending in the past tense occurs considerably earlier than in the present tense. The expected morphological change is therefore likely to be too late for Bobaljik and Thráinsson's system to account for the decline of V-movement in the 15th century. For a more detailed discussion of the issues raised in this section, see Haeberli and Ihsane (2014).

Although agreement morphology has been shown above not to be a plausible factor in the decline of V-movement in English, we will argue that morphological properties nevertheless play a certain role in this development. As a starting point, we take Biberauer and Roberts's (2010) proposal that we have to distinguish two types of richness of verbal morphology: Richness of agreement morphology (i.e. inflection of a nominal nature) and richness of tense morphology (i.e. inflection of a truly verbal nature, where 'tense' is a cover term for tense, mood and aspect). The former is relevant for the licensing of null subjects only, whereas the latter determines the occurrence of V-movement. Languages with a rich tense inflection have V-movement, languages with an impoverished tense inflection leave the verb *in situ*. Observing that the Romance languages have more synthetic verbal paradigms than the Germanic languages, Biberauer and Roberts argue that, due to this contrast, the Romance languages have V-to-T movement whereas V-movement to T does not occur in Germanic. Instead V-movement in Germanic targets the C-domain.

Although we will adopt Biberauer and Roberts's main idea of shifting the focus from agreement to other morphological properties, there are several aspects of their account that are problematic from our perspective. First, the notion of morphological richness is not defined clearly and it therefore remains open at what point a language would change from being morphologically rich to morphologically poor. Secondly, as our discussion of early English in sections 2.2 and 2.3 has shown, we do not agree with the claim that the Germanic languages do not license V-movement to T. Finally, Biberauer and Roberts assume that V-movement consistently targets T. But in terms of the sequential loss scenario proposed here, at least two heads have to be available for V-movement in the inflectional domain.

The last issue can be addressed easily by assuming a richer clause structure. Biberauer and Roberts (2010:266) indeed do not exclude the possibility that modal and aspectual features are associated with corresponding functional heads. Let us therefore make the standard assumption that below TP in our structure in (10), there are two additional potential landing areas for V-movement outside the VP, one related to mood and one to aspect. Assuming furthermore that NegP is hierarchically low in the historical periods that are relevant for our purposes (cf. section 5.1), we get the following structure.

(21) CP - FinP - TP - MP - AspP - NegP

The sequence of inflectional projections between FinP and NegP in (21) corresponds to what is also assumed by Han (2000) and Han and Kroch (2000) in their independently motivated sequential loss analysis of late ME and EModE.

If early English has V-movement to T, the question that arises then is how this movement is derived and whether, as Biberauer and Roberts suggest, morphological properties related to tense/mood/aspect can be argued to play a role. The starting point for the approach that we will adopt here is the observation that V2 languages have V-movement of a type that cannot be morphologically motivated as there seems to be no plausible way to link V-movement to the C-domain to any morphological properties. V-movement to Fin in the V2-like system found in early English can be considered as being of this type as well. There must therefore be a mechanism that derives V-movement independently of morphology. Adopting standard Minimalist terminology, we assume that targets of V-movement enter an Agree relation with the verb due to their unvalued V-feature and an EPP-feature as a movement trigger (cf. also Biberauer and Roberts 2010:265/6). Unvalued V and EPP can in principle be present on a head independently of any specific kind of morphology. This is what we assume to be the case for C and Fin in early English.

Under these assumptions, there cannot be a strong correlation between V-movement and morphology. However, we propose that in the inflectional domain, morphological properties

may nevertheless have some influence on the presence of V-features and therefore on movement. Consider for example T. When temporal morphology is expressed on the verb, it is plausible to assume that T must carry an unvalued V-feature. Similarly, V itself can be argued to carry an unvalued T-feature representing the tense morphology attached to the verb. T and V thus enter an Agree relation and if T carries an EPP-feature, the verb undergoes movement to T. On the other hand, if a language has no tense inflection on the verb, the presence of T on V and of V on T is not needed (but not necessarily excluded, either, given what we have proposed for the CP domain).

With the assumptions made so far, there would still seem to be no connection at all between V-movement and inflectional morphology as movement is triggered by V- and EPP-features that can in principle be assigned freely to an inflectional head. But consider now what happens when there is more than one inflectional head. Let us assume that a language has morphologically realized tense and mood distinctions. Both T and M must then have an unvalued V-feature, and V has unvalued T- and M-features. If, as in (21) above, TP is above MP, the derivation would proceed as follows. M is merged and enters an Agree relation with V. As a consequence, V on M and M on V are valued. Next, T with its unvalued V-feature is merged. For V on T and T on V to be valued, an Agree relation between T and V has to be established. What could be argued now, along the lines of Chomsky's (2000) Defective Intervention Constraint, is that, although M is inactive at this point, its valued V-feature acts as an intervener between T and V and therefore prevents T from selecting V as its goal. As a consequence, V must be moved at least as high as M for it to be equally close to T as M and thereby to be able to enter an Agree relation with T. In other words, the presence of an EPP-feature on M can be motivated in terms of locality constraints on Agree. More generally, V-movement out of the VP for reasons of locality is necessary whenever there is more than one inflectional head with a V-feature. If there is only one inflectional head with a V-feature, the Agree relation between the inflectional head and V can be established with V *in situ*.⁴⁴

On the basis of these proposals, we derive a weak version of Biberauer and Roberts's hypothesis that movement of the verb out of the VP is related to morphological richness with respect to tense, mood and aspect.⁴⁵ Biberauer and Roberts do not define richness in a precise way, but according to the proposals made above, a language qualifies as rich and, hence, has V-movement if two or more of the T/M/Asp heads are morphologically realized by the verb. It would go beyond the scope of this section to explore the cross-linguistic implications of these proposals in detail, but a brief look at the languages that have been examined most thoroughly in connection with V-movement in the literature, i.e. Romance and Germanic, shows that the right results are obtained. For example, the Romance languages have V-movement and they generally make three morphologically relevant distinctions on V (present, past, and future for tense, indicative and subjunctive/conditional for mood, perfective and imperfective for aspect).⁴⁶ Among the Germanic languages, Icelandic also shows clear

⁴⁴ The consequences of the approach outlined here are to a large extent identical to those of Bobaljik and Thráinsson's (1998) framework, which was based on earlier Minimalist hypotheses. Whereas Bobaljik and Thráinsson relate cross-linguistic differences to the number of projections occurring in the syntactic structure, what counts in our system is the number of active inflectional heads marked with an unvalued V-feature. In principle, parametrization concerning the presence or absence of functional projections would also be possible in the system adopted here, but we leave it open whether this type of parametrization indeed plays a role or not.

⁴⁵ In a typological overview, Biberauer and Roberts mention "[p]oor tense ... hence no V-to-T" for a language like English and "rich tense ... hence V-to-T" for languages like Italian or French (2010:267). This suggests that they adopt a strong version of the "rich tense hypothesis". Here, we accept the possibility that V-movement can occur independently of morphological richness.

⁴⁶ One issue we have to leave open here is how the variation in Romance V-movement as described by Schifano (2014) could be integrated into the system proposed in the text. On the basis of the distribution of finite verbs with respect to different types of adverbs, Schifano identifies four distinct targets of V-movement in the

evidence for V-movement to the inflectional domain, and it has morphological distinctions for tense (present, past) and for mood (indicative, subjunctive).⁴⁷ M acting as an intervener, V has to leave the VP for T to be able to enter an Agree relation with T in Icelandic. English and the Mainland Scandinavian languages, however, do not have V-movement. Although they do have tense morphology on verbs, V can remain in the VP for the Agree relation with T to be established because there is no productive verbal mood distinction between indicative and subjunctive that would require the presence of a V-feature on M.⁴⁸ Since aspect is not morphologically realized on verbs in these languages either, no intervener occurs between T and V and the verb does not have to move out of the VP.⁴⁹

Let us now consider the consequences of the proposals made above for the analysis of the loss of V-movement in the history of English. Leaving aside V-movement to C, we identified four major phases in our discussion in sections 2 to 4:

(1) *OE and early ME*

In OE and early ME, finite verbs move to Fin or to T. In main clauses, the main target of V-movement is Fin, but V-to-T can be found as a minority option as well. The distribution in subordinate clauses is inverted, with V-to-T being the most common option and V-to-Fin to a large extent restricted to complement clauses of bridge verbs. This situation can be analyzed in terms of an unvalued V-feature in Fin and variation with respect to the presence of an associated EPP-feature. For an unvalued V-feature on Fin to be able to establish an Agree relation with V, V has to move to T since the presence of tense morphology on the verb means that T carries a V-feature that acts as an intervener once it has been valued. V on T must therefore be associated with an EPP-feature. With V occurring in T, it becomes available for an Agree relation with unvalued V on Fin. The presence or absence of an EPP-feature on Fin then determines whether V-to-Fin occurs or whether V remains in T. In main clauses, Fin

inflectional domain in Romance. According to the assumptions made in the text, the Romance languages should generally have V-movement to a high functional head. Since both tense and mood distinctions are made in the inflectional morphology of Romance, T and M should have unvalued V-features and V should have unvalued T- and M-features. For reasons of locality, the verb should therefore move at least to the second highest head, or, if the highest head carries an EPP-feature, to the highest inflectional head. This gives two possible landing sites in the inflectional domain rather than the four that would be needed according to Schifano. At first sight, there are two ways to obtain the kind of variation suggested by the Romance languages within the system proposed here. One possibility is that the relation between the presence of V-features on inflectional heads and inflectional morphology is more complex than we have been assuming so far. An alternative option is that it is not necessarily the head of the V-movement chain that needs to be spelled out but that lower copies in the inflectional domain can be phonologically realized. We have to leave a closer examination of these issues for future research.

⁴⁷ Cf. also Biberauer and Roberts (2010:288) for the suggestion that mood may be an important factor related to the presence of V-to-T in Icelandic.

⁴⁸ Cf. König and van der Auwera (1994:238, 286, 334) on mood in the Mainland Scandinavian languages. As for the PDE subjunctive found in the mandative construction (e.g. *I require that he be there at 8.*), we follow Roberts (1985:41, fn. 12) among others in assuming that this involves an empty modal.

In this connection, it is also worth pointing out that in Faroese, where V-to-T is nearly lost (cf. Heycock et al. 2012), a productive mood distinction between indicative and subjunctive is no longer made (König and van der Auwera 1994:205). Thus, the loss of V-to-T in Faroese is compatible with the assumptions made here.

⁴⁹ However, for V to remain accessible as a goal for T, V has to move at least to the edge of *v*P (i.e. *v*) as would be required by the Phase Impenetrability Condition and the standard assumption that *v*P is a phase (Chomsky 2000, 2001). This opens up the possibility that V-movement to the phase edge corresponds to the short type of V-movement discussed in fn. 30.

Another consequence is that V2 cannot be related to an Agree relation between C and V since V on T intervenes and languages such as the Mainland Scandinavian ones, which do not have V-to-T, do not have the process required to circumvent the intervention effect. V-movement to C must therefore be related to an Agree relation between C (with EPP) and T or *v*.

generally bears an EPP-feature, but a variant without EPP co-exists. The status of Fin in early English can thus be analyzed as a case of competition between two featurally distinct options of the same functional head (Kroch 1989, 1994). However, in subordinate clauses in which the complementizer is merged in Fin (i.e. in clauses other than the complements of bridge verbs), the complementizer blocks V-to-Fin and the use of the variant of Fin with the EPP-feature is ruled out. At this point SAdvV orders involve structures with the subject above Fin in SU1, the verb in T, and the adverb between FinP and TP (Spec,PrtP at an early stage, a more general landings site for adverbs later).

(2) *Mid-14th to mid 15th century*

The loss of the main clause/subordinate clause asymmetry after OE and the beginning of the decline of subject-verb inversion in the 14th century lead to the weakening of the V-related EPP-feature on Fin. As a consequence, T starts becoming the main landing site for V-movement even in main clauses. This development can be related to the following plausible hypotheses (Roberts 2007:233, 235):

- (22) a. Language learners prefer simpler representations to more complex ones.
b. Given two structural representations R and R' for a substring of input text S, R is simpler than R' if R contains fewer formal features than R'.

Once the unambiguous evidence for V-to-Fin starts being lost, subject-initial main clauses become structurally ambiguous, and in terms of (22) V-to-T is preferred due to the absence of the EPP-feature on Fin. At the same time the distinction between the two subject positions SU1 and SU2 becomes blurred and subject movement to SU1 declines as well, a process that can once again be related to (22). With the verb predominantly in T and the subject in Spec,TP, the frequency of SAdvV order decreases until the middle of the 15th century. Remaining cases of SAdvV order are derived as before through residues of subject movement to SU1 and Adverb fronting to a position between FinP and TP.

(3) *Mid-15th to mid 16th century*

As shown by the decline of SVAdvO order and SVAdv with certain adverbs, V-movement past adverbs is lost in the period from the middle of the 15th century to the middle of the 16th century. The beginning of this development can be related to the decline of V-to-Fin. Once EPP on Fin is lost, there is no evidence for the presence of an unvalued V-feature on Fin, either. This is because V-to-T can be derived on the basis of an unvalued V-feature and an EPP-feature on T alone. Whereas the presence of V on T is required due to the tense distinctions in the verbal inflectional morphology throughout the history of English, the presence of V on Fin in early English is only syntactically motivated. Once the syntactic evidence for V on Fin is lost, (22) leads the language learner to postulate a Fin-head that lacks V as V no longer has any effects.

Thus, we are left with V on T and an associated EPP-feature. But for V on T to be valued, T would not necessarily have to bear an EPP-feature as the necessary Agree relation can be established non-locally. The next head below is M. Given that early English has a productive morphological indicative-subjunctive distinction both in the present and the past, we assume that M carries a V-feature and V an M-feature. M therefore acts as an intervener for the Agree relation between T and V, and V has to move at least to M. Some evidence in the language learner's input could indeed be interpreted as involving V-to-M only and, hence, for the emergence of a variant of T without EPP. As pointed out earlier, SAdvV order in the ME period involves different types of adverbs (cf. example 20). Our assumption so far has been that, as long as there is V on Fin and V-movement necessarily targets Fin or T, SAdvV

involves V-movement to T and Adv fronting between FinP and TP. But once V on Fin is lost, an alternative structure becomes available at least for adverbs that occur high in the adverbial hierarchy. In such cases, the adverb can be analyzed as occupying its base position between T and M and the verb as occupying M.⁵⁰ A variant of T without EPP thus emerges and enters into competition with T with EPP. (22) leads the language learner to prefer the innovative structure as it lacks EPP as well as the features that are needed to front the adverb above TP.

Other developments in late ME further weaken V-movement. Whereas there are clear inflectional distinctions between indicative and subjunctive in OE, these distinctions are considerably reduced during the ME period.⁵¹ One consequence of this is that main verbs in the subjunctive are more and more replaced by periphrastic constructions involving a modal auxiliary (e.g. Mustanoja 1960:453). This leads to a decline in the evidence for V on M, as M in these cases is no longer related to the verb but to the auxiliary. Even more importantly, subjunctive morphology declines so substantially that, by about 1500, there are no subjunctive inflectional endings left at all (Lass 1999:161). With the decline of the morphological evidence for M on V and for V on M, a variant of M without V could emerge. This is indeed what happens due, once again, to a structural reanalysis driven by (22). In this case, the relevant data in the learner's input are SAdvV orders with adverbs that are merged low in the structure (below M). Such orders can be analyzed either (i) as V-movement to M (or higher) and leftward movement of the adverb as in early ME or (ii) as structures involving neither V-movement to M nor adverb movement. Whereas M carries a V-feature in (i), it lacks such a feature in (ii). According to (22), the second option is preferred, and, as a consequence, the variant of M with a V-feature is driven out of use. Given that SV*not* is still fully productive at this point, we propose that V then targets the head above NegP, i.e. Asp, in the structure in (21). This result is obtained by assuming that Asp has a V-feature and that the continued presence of V on T (due to the morphological present-past distinction) forces V on Asp to be associated with an EPP-feature so that T can enter an Agree relation with V. We will come back to these points in our discussion of the final phase in the loss of V-movement.

To summarize so far, we have identified three important factors in the decline of V-movement past adverbs. First, with the decline of V2, the early English V-movement system is destabilized due to the loss of evidence for V on Fin. Second, the decline of the subjunctive in ME is at the origin of a further weakening of V-movement as V on M is lost as well. The third important factor in this account is that SAdvV orders can still be found in the 15th century, possibly as late residues of very frequent occurrences of SAdvV in OE and early ME. These SAdvV orders involve adverbs of different semantic types, and they can therefore be argued to have led language learners to postulate structures in which the verb is located lower in the structure than in earlier English, in line with (22). These structures then end up entirely replacing those with V-movement to higher heads by the middle of the 16th century.

In connection with the role of SAdvV order, an additional observation may be of importance. If we consider the frequencies of SAdvV order in individual texts, we can observe that they are systematically well above average in texts of northern origin. In the period 1350-1420, when the average rate of SAdvV is near its lowest at 9.9%, the only northern text, *The Northern Prose Rule of St. Benet*, has a frequency that is significantly

⁵⁰ As for the exact location of the adverb, both a specifier or an adjunction analysis would be conceivable. The structure in (21) only includes projections for which we have evidence on the basis of verb placement. By representing only these, we do not exclude the possibility that other projections related to tense, mood/modality or aspect occur in the clause structure of English and that these projections host adverbs as in the frameworks proposed by Alexiadou (1997) or Cinque (1999). Alternatively, in line with more traditional approaches, adverbs could be licensed in adjoined positions. For our purposes, nothing hinges on this issue.

⁵¹ By the end of the ME period, indicative and subjunctive with weak verbs can only be distinguished in 2sg and 3sg present and in 2sg past due to the presence of distinctive morphemes in the indicative.

higher (9/36 (25.0%); $p < 0.005$). Furthermore, in an extended database including texts for which the dating is not entirely precise (manuscript date between 1420 and 1500 and an estimated date of composition of the original between 1350 and 1420), the two northern texts have the highest frequencies of SAdvV order (*The Mirror of St. Edmund (Thornton Ms.)* 7/26 (26.9%), *Dan Jon Gaytryge's Sermon* 10/21 (47.6%), non-northern texts combined 38/377 (10.1%). A further striking property of the northern texts is that SAdvV occurs mainly in subordinate clauses (24 out of all 26 SAdvV orders (92.3%) occur in subordinate clauses), whereas this is not the case in the other texts (75/193 (38.9%). The situation in the northern texts is thus reminiscent of the Scandinavian languages where SAdvV is to a large extent a subordinate clause phenomenon.

The frequent occurrence of SAdvV order in northern late ME can be argued to have had an effect on the development of southern varieties. As is well known, migration from the north to the south was very common in the late ME period (e.g. Nevalainen and Raumolin-Brunberg 2003:39). This has been claimed to have had an impact on certain aspects of the grammar of southern varieties since northern ME had distinctive properties, many of which have been related to earlier contact with Scandinavian (e.g. Kroch, Taylor and Ringe 2000, Nevalainen and Raumolin-Brunberg 2003:168ff., 177ff.). We may assume then that SAdvV order is strengthened in southern ME varieties due to contact with northern ME.⁵² This together with an acquisitional bias towards simpler structures leads to the relatively rapid loss of V-movement to a position above Asp.

(4) 16th century and beyond

The question that remains now is why the developments starting in the 15th century do not immediately lead to the complete loss of V-movement, i.e. why V-movement to the Asp head past negation is maintained when V-movement past adverbs is in full decline. From a morphological point of view, there would be no need to postulate a V-feature and an associated EPP-feature on Asp, as there is no aspectual inflectional morphology on finite main verbs in late ME. However, according to the assumptions made so far, V-features can be postulated on the basis of syntactic evidence alone, and such evidence is abundant for V on Asp in the 15th century due to systematic *SVnot* order in negative clauses. In terms of the structure in (21), systematic *SVnot* means that Asp must have a V- and an EPP-feature.⁵³ The crucial difference between adverbs and negation is that when V-movement starts declining in the 15th century there is no evidence available to the language learner to suggest the lack of V-movement past negation whereas such evidence is available for adverbs. There are indeed only 2 clear cases of sentential negation expressed by *SnotV* order in the 738 negative main clauses in our data in Table 5 from 1420 to 1500 (0.3%), suggesting that *SnotV* is not a viable

⁵² Some support for this hypothesis comes from the development of SAdvV order in different clause types. After clear clause type asymmetries in OE and the earliest ME period, there is no statistically significant difference between main and subordinate clauses with respect to the frequency of occurrence of SAdvV order in the period 1250 to 1350 any more. The same is true for the period 1350 to 1420 without St. Benet. In the data from 1420 to 1550, however, this state of affairs changes. Subordinate clauses again tend to have higher rates of SAdvV order than main clauses. In terms of a contact scenario, this clause type contrast can be argued to have emerged due to the high frequency of SAdvV order in subordinate clauses in northern varieties.

⁵³ In the context of negative clauses, an additional point should briefly be made concerning the structure in (21). At the stage when the verb precedes negation but not adverbs, object pronouns are the only elements that regularly occur between V and *not* in our data, and they do so until *Vnot* order is lost. (i) shows an example from the late 18th century.

(i) but the infatuated Jews understood them not, ... (WOLLASTON-1793,11.69)

Thus, there must be a position for object pronouns between Asp and Neg in (21), i.e. a position corresponding to what has been labelled Spec,AgrOP in earlier work. As pointed out in fn. 50, our analysis would be compatible with additional functional projections apart from those presented in (21).

option in the period that is crucial for us. Furthermore, northern influence does not alter the picture here. In the three northern texts mentioned above, there is only one example with the order *SnotV* against 47 with the order *SVnot*, and in this single example *not* is followed by *only*, a context that can give rise to preverbal *not* without *do* in PDE (fn. 39). There is therefore solid evidence for V-movement past negation across varieties of English in the 15th century. (22) applies only when an input text can be analyzed in more than one way, which is not the case for negative clauses in late ME. Hence, the status of Asp as a head attracting the verb remains unaffected by (22) in the 15th century.

But why does the word order *SVnot* nevertheless end up declining from the 16th century onwards? For *SVnot* order to be weakened, Asp must start losing its unvalued V-feature. Here the emergence of periphrastic *do* may have played an important role. According to Garrett (1998), auxiliary *do* has habitual aspect marking as a primary function in the 13th and 14th centuries, and he therefore considers “habituality as the starting-point” (1998:320) in the development of periphrastic *do*. If this is correct, it would be plausible to assume that *do* is merged as an aspectual marker under Asp. In the presence of *do*, Asp lacks an unvalued V-feature as it is realized by a free morpheme and it is therefore independent of the main verb. The status of *do* as an Asp-head can then be argued to be maintained as *do* develops its semantically empty periphrastic use.⁵⁴ As *do* is used increasingly from the 15th century onwards, the V-feature on Asp is in decline.⁵⁵ Although (22) cannot be applied in a strict sense to this case as we do not have the same input text for two structural representations, it would nevertheless be plausible to argue that, since the two options can be semantically equivalent, the acquisitional bias towards simplicity plays a role here as well. From the point of view of simplicity, the option with *do* is preferred to V-to-Asp because the latter contains additional formal features, namely V and a related EPP-feature, whereas the former lacks those. This preference may be less strong than in the other cases discussed in connection with (22) so far since the reduction of formal features comes at a price in the form of additional phonological content.

Further developments may have contributed to the weakening of the V-feature on Asp. First, other periphrastic constructions emerge in this period that express aspectual properties. In particular, the only purely aspectual distinction in PDE, i.e. the one between progressive and non-progressive, starts emerging from the 16th century onward (e.g. Nehls 1988, Elsness 1994). The fact that this distinction involves auxiliary *be* means that in contexts in which V-movement would previously have occurred we again have a situation in which this is no longer the case. Instead, we can assume that *be* is directly inserted under Asp and that Asp therefore lacks a V-feature. Similarly, with modals being reanalyzed, at the beginning of the 16th century, as elements merged in the inflectional domain rather than moved there from V, the number of clauses providing evidence for a V-feature and an associated EPP-feature on Asp is further reduced (cf. also Lightfoot 2006). Finally, in affirmative declarative contexts without periphrastic *do*, no difference can be made between a main verb in Asp and a main verb in its base position according to (21) because even if an adverb is present the two positions cannot be distinguished. Assuming again that (22) favours the non-movement option

⁵⁴ Such non-habitual uses already occur, albeit as a minority option, in the 13th/14th century data that Garrett examines. Cf. Garrett (1998:314ff.) for an account of how non-habitual uses of *do* may have emerged in negative and interrogative clauses. Given that auxiliary *do* never has any semantics that would make it a plausible candidate for any another inflectional head such as M or T, we may assume that the weakening of the aspectual semantics does not go together with a syntactic reanalysis. But cf. fn. 56 below for a possible later development.

⁵⁵ These proposals imply that the loss of V-movement is not the cause of the emergence of *do*-support but rather that it is caused by the latter. Cf. also Lightfoot (2006) for viewing the correlation between the two phenomena in this way.

in an ambiguous context, simple affirmative declarative main clauses are a context in which the V-feature on Asp is bound to be driven out.

The factors listed above either reduce the amount of evidence available for V on Asp or they favour the rise of an Asp-head that lacks V. Taken together, they can be argued to lead to the gradual decline of V-to-Asp movement in English. Given that in negative contexts the only option in the language learner's input compatible with Asp without V is the word order *Sdo-notV*, it is this order that replaces the *SVnot* order associated with Asp with a V-feature.⁵⁶ However, as the quantitative development of *SVnot* order shows, the loss of V-to-Asp is considerably slower than the loss of V-movement to the higher inflectional heads. One possible reason for this is that, as mentioned above, the acquisitional bias towards *Sdo-notV* is arguably less strong than in the cases discussed earlier. But some observations made by Warner (2005, 2006) may be of importance, too. Warner shows that, whereas in stylistically less complex registers *do*-support in negative declarative clauses gradually rises throughout the 16th century, the frequency of *do* drops in the second half of the 16th century in stylistically more complex texts. Warner therefore concludes that *do*-support gets a new evaluation in stylistically more complex registers in that the use of *do* temporarily receives a hostile evaluation whereas the use of *Vnot* is positively evaluated. Thus, sociolinguistic factors may interfere with the decline of V on Asp whereas this does not seem to be the case with the decline of V on Fin or V on M. A possible explanation of this contrast would be that negation and the use of *do* are rather salient properties of a grammar, and speakers may therefore be aware to some extent of variation that is related to these properties while no such awareness may exist for the syntax of adverbs.

In summary, adopting a Minimalist account of V-movement, we have proposed that several factors contribute to the sequential loss of V-movement in the history of English. The starting point is the decline of evidence for unvalued V on Fin with the loss of the main clause/subordinate clause asymmetry and the decline of subject-verb inversion. Subsequently, the loss of subjunctive morphology and the rise of periphrastic constructions as a replacement strategy also weaken the status of V on M. The occurrence of SAdvV orders with a wide range of adverbs in the input together with an acquisitional bias towards simpler structures then lead language learners to start postulating structures in which the verb only moves to Asp. This corresponds to the first step in the sequential loss of V-movement around 1500. At this point, no true alternative to *SVnot* order is available in negative clauses, and the verb continues to move out of the VP to the lowest inflectional head (Asp). However, the emergence of periphrastic *do*, the general trend towards periphrastic constructions expressing aspectual distinctions, and the categorial reanalysis of modals weaken V and its associated EPP-feature on Asp from the beginning of the 16th century. This, together once again with an acquisitional bias towards simpler structures, leads to the decline of V on Asp over the

⁵⁶ In simple affirmative contexts, the situation is different. An affirmative clause with or without a V-feature on Asp cannot be distinguished at the surface. Together with the assumption that a structure with some phonological material is dispreferred to an identical one without that material, this may account for why in the long run non-emphatic periphrastic *do* in affirmative clauses was not viable despite its initial rise until the second half of the 16th century.

A question that the analysis in the text raises is how the grammar rules out word orders of the type *SnotV* in PDE. One possibility is that, as the use of *do*-support starts being limited to negatives and interrogatives, Neg becomes a head that must be lexically realized and that, if no other auxiliary is available, this is done by *do*. In cases of contracted negation, the auxiliary together with negation are inserted under Neg (cf. also Zwicky and Pullum 1983 for treating cases of the type *auxn't* as single lexical items). With non-contracted negation, the auxiliary is inserted under Neg, whereas negation occupies the specifier. *SnotV* may therefore be ruled out through lexical constraints on Neg.

following 200 to 300 years, with sociolinguistic factors possibly slowing this development down somewhat.

6. CONCLUSIONS

Most of the discussions of the loss of V-movement in the history of English have focused on data related to the rise of *do*-support. In this paper, we have extended the empirical basis of these discussions to evidence from adverb placement. Our analysis of the distribution of finite main verbs with respect to adverbs in a range of prose texts over a time span of around 1000 years shows that the decline of V-movement in English starts in the middle of the 15th century. Furthermore, evidence from verb-object (non-)adjacency and from some specific adverbs suggests that V-movement past adverbs is lost to a large extent by the middle of the 16th century. These observations concerning the development of V-movement differ considerably from what data involving the sentential negator *not* indicate. According to that evidence, the loss of V-movement is a long process starting in the 16th century and coming to completion over 200 years later.

In order to reconcile the conflicting evidence from adverb placement and the syntax of negation, we propose that the loss of V-movement in English is not a single event but occurs sequentially (see also Han 2000, and Han and Kroch 2000 for such a proposal put forward for entirely independent reasons). During the first phase, which starts in the 15th century and features the decline of SAdv order, V-movement to high inflectional heads (Fin, T, M) is lost while V-movement to a lower inflectional head (Asp) is still maintained. It is only during the second phase that finite verbs stop moving out of the VP entirely. This phase is characterized by the replacement of *Vnot* order by *do*-support, and it starts in the 16th century.

Concerning the causes of the decline of V-movement, we have shown that neither the first phase nor the second one can clearly be linked to changes in verbal agreement morphology, contrary to what we would expect if the Rich Agreement Hypothesis were to hold. Instead, following proposals made by Biberauer and Roberts (2010), we have argued that it is the morphosyntax of tense/mood/aspect that plays a role. More precisely, the loss of subjunctive morphology and the emergence of various periphrastic constructions have the potential of weakening the status of M and Asp as heads attracting the verb. However, we do not consider the relation between inflectional morphology and V-movement as a strong one. Hence, the changes in the morphosyntax do not trigger the loss of V-movement but they make it possible. Other factors are needed to set the changes in motion. An initial important development that we have identified is the decline of subject-verb inversion, which destabilizes the V-movement system as it removes any remaining evidence for V on Fin. Subsequently, the crucial factor driving the change is an acquisitional bias towards simpler structures, where simplicity can be defined in terms of the amount of formal features a structure contains (Roberts 2007). In the first phase of the change, it is the occurrence of SAdvV orders involving a semantically diverse group of adverbs in the input that lead language learners to postulate simpler structures with the verb in a low position (Asp). In the second phase, the emergence of *do* as an element that can be inserted in the inflectional domain introduces a featurally simpler option that finally drives the *Vnot* option out. In the first phase, dialect contact with northern varieties may have accelerated the development, leading to its relatively quick completion within a century. The somewhat slower progression of the second change is arguably related to a weaker acquisitional bias due to the presence of additional overt material (*do*) and to sociolinguistic factors.

Our focus in this paper has been the status of V-movement throughout the history of English from its beginnings to the modern period. Future research will have to show whether

similar developments in other languages such as the Mainland Scandinavian ones can be integrated into the account outlined here.

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