

Medial NP-adjuncts in English: A diachronic perspective*

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1. Introduction

In Present-Day English, adjuncts can occur in three main areas of the clause: clause-initially (before the subject), clause-finally (after the main verb) or clause-medially (between the subject and the main verb). The focus of this paper will be the latter domain, which corresponds to the area between the subject and the finite main verb or, if the finite verbal element is an auxiliary, the area between the subject and the non-finite main verb either to the left or to the right of the finite auxiliary. In the literature, it is sometimes claimed that this clause-medial adjunct position is restricted to adverbs. However, as has regularly been shown (cf. e.g. Haegeman 1983, 2002, De Clerq, Haegeman and Lohndal 2012), medial NP- and PP-adjuncts are not entirely ruled out and they can be found in corpus data. This is illustrated in (1).

- (1) a. The Government *will **this week*** announce *a pay rise* ... (Haegeman 1983:74)
b. ... he *yesterday* published *his version of last week's events*...
(Haegeman 2002:79)
c. The actor *was **at that time*** living *in London*. (De Clerq et al. 2012:7)
d. ... Thompson *in one letter* talks *of his relationship with a girl*...
(Haegeman 2002:83)

Although medial NP- and PP-adjuncts are not entirely banned in Present-Day English, it is nevertheless the case that speakers often do not accept such word orders. Furthermore, their frequency of occurrence in corpora is very low and their use seems to be subject to register variation, with journalistic prose being a favourable context for the use of medial NP- and PP-adjuncts.

The main question these observations raise is why an adjunct position that is commonly occupied by adverbs is so restrictive with respect to hosting other types of adjuncts. The aim of this paper is to try to shed some light on this issue by examining the diachronic development of the syntax of medial NP-adjuncts in the history of English. In Old English, the occurrence of adverbs as well as NP-adjuncts in a surface position between the subject and the main verb is very common, as OE has head-final properties and the main verb, in particular in subordinate clauses, frequently occurs towards the end of a clause. What is therefore of interest from a diachronic point of view is the question how the distinctive properties of adverbs on the one hand and NP-adjuncts on the other with respect to medial placement emerged in the history of English. To address this issue, I will examine the development of NP-adjuncts in the currently available parsed historical corpora covering approximately 1000 years of history from Old to Late Modern English. These data will then be set against comparable data related to the placement of adverbs. The aim will be to identify the way in which the two types of elements developed the different distributional

* It is a pleasure for me to dedicate this paper to Liliane Haegeman, without whom neither this nor any of my earlier papers would ever have been written. I would like to thank Liliane for having made me discover and enjoy syntax and, from then onwards, for providing support and inspiration, and for being a wonderful friend.

I am grateful to two anonymous reviewers for their comments and suggestions. The research reported here was supported by Swiss National Science Foundation grants no. 124619 and 143302.

properties that characterize them today and to examine to what extent the diachronic evidence can contribute to an account of clause-medial adjunct placement in Present-Day English.

The paper is structured as follows. Section 2 provides an overview of observations made in the literature with respect to the status of clause-medial placement of NP-adjuncts and of accounts of the constraints on this word order option that have been proposed in earlier work. In section 3, the diachronic development of medial placement of NP-adjuncts with finite main verbs and its theoretical analysis will be discussed. Section 4 explores some additional issues that are raised by clauses with finite auxiliaries and non-finite main verbs. Finally, section 5 concludes the paper.

2. Medial NP-adjuncts in Present-Day English

This section presents some observations and analyses found in the earlier literature with respect to clause-medial nominal constituents in Present-Day English. My discussion relies heavily on Haegeman (2002), who refers to elements such as *tomorrow*, *yesterday*, *last week*, *one day*, or *next year* as NP-adjuncts, a label that I will adopt here without wanting to make any claims as to the exact internal structure of these items (cf. also Haegeman 2002:105, note 3). Haegeman observes that, while a temporal adverb like *recently* can occur in any area of the clause, the situation is more complex for NP-adjuncts due to the status of clause-medial placement. This contrast is illustrated in examples (2) and (3) (Haegeman 2002:81, examples 3 and 5).

- (2) a. **Recently** he left *for London*.
b. He **recently** left *for London*.
c. He left *for London* **recently**.
- (3) a. **Tomorrow** he leaves *for London*.
b. (*) He **tomorrow** leaves *for London*.
c. He leaves *for London* **tomorrow**.

The diacritic used in (3b) reflects somewhat conflicting observations made in the literature, with several authors ruling this word order explicitly out (cf. Haegeman 2002:81-83). These judgments include clauses with finite verbs as in (3b) but also clauses with finite auxiliaries as shown in (4) (examples from McCawley 1988:201).¹

- (4) a. * John *will* **tomorrow** finish *his assignment*.
b. * Nancy *must* **last Friday** have gone *to Florida*.

¹ That clauses with auxiliaries should be treated on a par with those containing a finite main verb is commonly accepted. Thus, for example Quirk et al. (1985:491) start their discussion of medial placement of adverbials with examples like (i).

- (i) The driver **suddenly** started *the engine*.

But they then observe that “[i]n the following variants of [(i)], any native speaker would feel that the adverbials are still in the same position”, where “the following variants” refers to examples like (ii), where the adverbial occurs between the auxiliary and the non-finite main verb.

- (ii) The driver *has* **suddenly** started *the engine*.

As Haegeman points out, the restriction on the use of NP-adjuncts in medial position is sometimes also explicitly mentioned in pedagogical grammars.

Contrasting with these observations based on grammaticality judgments, corpus data discussed in the literature show that medial NP-adjuncts are by no means unattested. In particular journalistic prose is regularly mentioned as favouring the use of this word order option. The following two examples illustrate this register (Haegeman 2002:79/80).

- (5) a. A judge *last week* held *that a civilian clerk for the city of London police, Esther Thomas, could sue the paper under the Protection against harassment act.* (*Guardian*, March 2001, p. 2, col. 3)
- b. Frustrated rail passengers *will today still* face *chaos and delays on large parts of the network after the holiday break amid increasing anger among the 25 train-operating companies that Railtrack is failing to deliver its recovery programme.* (*Guardian*, 2 January 2001, p. 1, col. 1)

In a quantitative analysis of a corpus of newspapers and other prose work, Jacobson (1964:148), cited by Haegeman (1983:73), found that clause-medial placement of NP-adjuncts like *today* or *yesterday* is far more frequent in journalistic prose (19%) than in other prose texts (3%).² These data also show, however, that the medial word order option cannot simply be reduced to a single register as it can be found elsewhere albeit at a very low frequency.

Although mid-position NP-adjuncts can be found in language production, the fact that, with the possible exception of journalistic prose, they are rare and that native speakers tend to be reluctant to accept many examples of this type suggests that clause-medial placement of NP-adjuncts is strongly constrained. This observation raises two main questions. First, why is medial placement constrained with NP-adjuncts whereas adverbs freely occur in this position? Second, why does register play a role in the use of mid-position NP-adjuncts?

With respect to the first question, one factor that could be argued to play an important role is the length of the constituent occurring in medial position. Hasselgård (2010:101) observes that there is “a great dominance of adjuncts realised by one word in [...] medial position”, and she supports this claim by quantitative evidence according to which 79% of all cases with an adjunct in medial position in her corpus contain a one-word adjunct, 16% a two- to four-word adjunct, and 5% an adjunct that is five words or longer.³ Hasselgård (2010:102) suggests that this preference for one-word adjuncts could be related to the kind of principles of processing efficiency proposed in Hawkins’ work. According to Hawkins (2004), the human processor prefers to minimize the domains in which essential relations between linguistic items

² Jacobson’s figure for journalistic prose happens to be nearly identical to what Haegeman (2002:85) found in a small-scale study of NP-adjuncts in the first six pages of *The Guardian* of 5 June 2001 (clause-initial: 7; clause-final: 32; clause-medial: 10 (20.4%)).

³ Given Hasselgård’s discussion elsewhere, my understanding is that these data include clear parentheticals (i.e. adjuncts typographically set apart by commas or dashes). If such examples were left aside, the predominance of one-word adjuncts in medial position would undoubtedly be even more striking.

Note also that Hasselgård defines the medial domain somewhat differently from what I assume here. Her data for medial placement include cases in which an adjunct occurs between the main verb and its complement as she refers to the area between the subject and the verb’s complement as the medial position. Such clauses of the type V-adjunct-O will be treated as involving clause-final placement here.

are established (Minimize Domains, MiD). If we assume that one of these essential relations is the thematic relation between the subject and its predicate, the occurrence of an adjunct between the two increases the domain in which this relation is established and with each additional word contained in this adjunct the domain is further increased. This effect could be argued to be reinforced if we assume that agreement between the subject and the finite verb is also a relation that is relevant for the purposes of MiD. Thus, from the point of view of MiD, if medial adjunct placement is chosen, a one-word adjunct is preferred because it violates MiD only minimally whereas longer adjuncts lead to more important violations of MiD and are therefore less likely to be used.⁴

Although an approach along these lines may provide a promising account of the length constraints on clause-medial adjunct placement, it is not immediately clear whether it is sufficient to explain the properties of NP-adjuncts in this way. It is certainly the case that many NP-adjuncts contain more than one word (e.g. *this week* in (1a), *last week* in (5a)). But others such as *yesterday* (1b) or *tomorrow* (3b) consist of a single word and would therefore be expected to behave like the numerous one-word adjuncts like *recently* in (2b) that regularly occur in medial position. The fact that the one-word NP-adjuncts are etymologically complex (*yester-day*, *to-morrow*, *to-night*, *to-day*) should not be relevant for these purposes since certain other one-word adjuncts that could be decomposed (e.g. *some-times*) are perfectly acceptable in mid-position (*Miss Marple sometimes reads crime novels*).

These observations suggest that a simple word-length distinction cannot account for the behaviour of NP-adjuncts. The way NP-adjuncts could be distinguished from typical medial adjuncts, however, is by taking structural properties into account. Typical mid-position adjuncts are structurally very simple as they “are for the most part rather short adverb phrases, especially solitary adverbs” (Quirk et al. 1985:493). As for NP-adjuncts, some are straightforwardly more complex as for example *this week*, which, apart from the N-head *week*, must involve a second head, say D, hosting the demonstrative. By analogy, one-word NP-adjuncts such as *tomorrow* could be argued to be DPs as well, but simply with an empty D-head. Further structural complexity could be assumed if we follow McCawley (1988:202) (cited by Haegeman 2002:83) in analysing temporal NP-adjuncts as PPs with a zero preposition. Thus, whereas typical clause-medial adjuncts consist of a single projection headed by an adverb, one-word NP-adjuncts can be argued to contain (at least) one or two additional structural layers. This contrast could then be related to Hawkins’ MiD principle provided that empty heads have the same status with respect to MiD as overt ones in that they count for the purposes of counting the size of a domain. For the purposes of our discussion later in this paper, I will assume that this is the case. However, given that the structures Hawkins uses in his analyses are very surface-oriented and generally lack empty elements, it would remain to be seen in more detail whether such a hypothesis could easily be integrated into the general system that Hawkins outlines.

Structural differences also play an important role in Ernst’s (2002) analysis of adjunct placement. The fact that “[t]here may be restrictions on relatively heavy adjuncts in VO languages between the subject and the verb” (2002:449) is crucially

⁴ Hasselgård (2010:101) cites Biber et al. (1999:808) for a very similar intuition. According to these authors, adjuncts in medial position “interrupt the flow of obligatory components of the clause. For example, they may separate the subject from the verb, the auxiliary verb from the main verb, or the verb from its complement. It is thus not surprising that these positions have a strong preference for one-word adverbials”.

related by Ernst to a theory of weight in which weight is determined by (a) category membership and (b) stress/focus. With respect to category membership the following hierarchy is proposed: CP > PP > DP > AP > AdvP with complement > AdvP without complement > Adv. This hierarchy is then argued to have an impact on adjunct placement, with the light adjuncts at the very bottom of this hierarchy favouring preverbal placement. However, while in a Hawkins-type analysis the observed restrictions on medial placement can be argued to follow from independently motivated processing constraints, the effect that weight and the related structural hierarchy have in Ernst's analysis seems to be of a more stipulative nature.

Another factor that could potentially have an influence on the status of word orders with medial adjuncts is the way in which they are structurally derived. In principle, the minimal assumption would be that medial NP-adjuncts occur in the same structural position(s) as medial adverbs, i.e. in the inflectional domain between the subject and the main verb either in dedicated specifier positions (as postulated e.g. by Alexiadou 1997 and Cinque 1999 for adverbs) or in adjoined positions (cf. e.g. Ernst 2002). The restrictions on medial placement of NP-adjuncts would then be entirely due to the kind of constraints discussed in the previous paragraphs. An alternative to such an approach would be that word orders with medial NP-adjuncts are not derived in the same way as those with medial adverbs, and that this difference has an impact on their use. An approach in which medial NP-adjuncts and adverbs are treated as syntactically distinct is proposed by Haegeman (2002). Following work by Benincà and Poletto (2004) and Cardinaletti (2004), Haegeman (2002) assumes that NP-adjuncts occupy an IP-edge position whereas adverbs occur IP-internally. For NP-adjuncts to be able to occupy an initial and a medial position, a subject position above the IP-edge and one below must be postulated. Following Cardinaletti, Haegeman assumes that the higher subject position, labelled Spec,SubjP, hosts the "subject of predication" and that "[s]uch a subject is the prominent argument that the sentence is about" (2002:103). Medial NP-adjuncts can only be derived if the subject occurs in this higher subject position and thus qualifies as a subject of predication, whereas medial adverbs are possible independently of subject placement. Although Haegeman does not explicitly do so, it could be argued then that this derivational difference is the source of the more restricted use of medial NP-adjuncts as compared to medial adverbs. However, it is difficult to see how this hypothesis would be sufficient to fully explain the marginal status of medial NP-adjuncts in Present-Day English as they would in principle be expected to be entirely acceptable provided that the subject qualifies as a subject of predication. Some further structural assumptions or factors of the type discussed earlier may therefore be needed for a full account.

Before turning to the diachronic development of medial placement of adjunct NPs, let us briefly consider the register issues and, more specifically, the question as to why, as mentioned earlier, journalistic prose seems to be a particularly favourable context for this phenomenon in Present-Day English. Ernst (2002) mentions the register effect in connection with the following pair of examples involving adjunct PPs (2002: 173).

- (6) a. *Maureen (*for several years) walked (for several years).*
 b. *The relief officials have for several days tried to move tons of supplies into the devastated valley.*

Ernst observes that cases like (6b) are "typical of more formal and journalistic prose" (2002:173). After adding several additional examples of this type, he concludes that

what they show is that “acceptability in [the medial] position climbs as the length of the string of postverbal material increases”. Thus, the lightness of an adjunct in principle favours medial placement, but the heavier the rest of the clause is the heavier a medial adjunct can be: “[I]t is relative (not absolute) heaviness that is at stake” (Ernst 2002:173). Ernst does not make this fully explicit, but given that he mentions relative heaviness in connection with register differences, his hypothesis would have to be that medial NP-adjuncts occur more frequently in formal and journalistic prose because the postverbal domain is heavier in these registers than in others. However, this hypothesis remains to be evaluated on the basis of a detailed corpus study involving different types of registers.

An alternative account of the register effects with medial adjuncts is provided by Hasselgård (2010:102ff.), who invokes information-structural factors. Hasselgård starts by pointing out that “medial position is not associated with any kind of focus, in contrast to initial and end position which involve thematic and end focus respectively” (2010:102). The relatively frequent occurrence of medial NP-adjuncts in journalistic prose could then be related to the fact that “news articles, typically reporting what happened the day before the newspaper is distributed, often have relatively self-evident adverbials such as *now*, *last night*, *yesterday* etc. in medial position” (2010:105). Such adverbials are not focus-worthy, and the medial position allows the speaker/writer to background them informationally. In terms of this account, other genres would differ from journalistic prose in that adjuncts of this type play a more important information-structural role.⁵

In the following sections, I will present data tracing the historical development of medial NP-adjuncts, and I will examine how it can be integrated into the analyses of the situation in Present-Day English as presented above.

3. Medial NP-adjuncts in clauses with finite main verbs in the history of English

For this study of the development of medial NP-adjuncts in the history of English, data were collected from the currently available parsed historical corpora of English, covering a wide range of prose texts from the 9th century up to 1914: *The York-Toronto-Helsinki Parsed Corpus of Old English Prose* (Taylor, Warner, Pintzuk and Beths 2003; 9th to 11th centuries), the *Penn-Helsinki Parsed Corpus of Middle English 2* (PPCME2; Kroch and Taylor 2000a; 1150–1500), the *Penn-Helsinki Parsed Corpus of Early Modern English* (PPCEME; Kroch, Santorini and Delfs 2004; 1500–1710), *The Parsed Corpus of Early English Correspondence* (PCEEC; Taylor et al. 2006; 1410–1695), the *Penn Parsed Corpus of Modern British English 2* (PPCMBE2; Kroch, Santorini and Diertani 2016; 1700–1914). Given that the NPs in medial position that are cited in the literature are generally of the temporal kind, I retrieved all affirmative clauses containing a constituent labelled as NP-TMP in the parsed corpora.⁶ Some of these clauses were then manually removed: (a) clauses

⁵ A proposal along these lines can also be found in Jacobson (1964:148): “The reason for the higher percentage of [medial placement] in news-columns must be that these nearly always report what has happened during the day or the day before and that therefore the adverbs *to-day* and *yesterday* are rather unimportant in the context”.

⁶ The parsed corpora also distinguish other non-argumental NPs: NP-ADV (a relatively restricted class including adverbial free relatives (e.g. *come what may*), adverbial genitives (e.g. *needs, thanks to...*) or certain set phrases (e.g. *face to face*)), NP-DIR (e.g. *that way, southwards*), NP-LOC (e.g. *home*), NP-MSR (e.g. *a long time*), and NP-ADT (described in the corpus manual as a catch-all category that covers any remaining cases of adjunct NPs). Since the NPs included under these labels generally do not occur in medial position, I did not include them in my searches.

containing an adjunct that patterns with adverbs like *recently* in (2) and is entirely unproblematic in medial position in Present-Day English (*sometimes*, *once* or *twice* and spelling variants thereof); (b) *oftentimes* and spelling variants thereof on the grounds that the initial part of the compound regularly occurs in medial position in Present-Day English; (c) parenthetical adjuncts that are typographically set off by a comma before and/or after the adjunct since the distribution of parentheticals is known to be less constrained.⁷ Based on the remaining data, I examined the distribution of temporal NP-adjuncts in all main and subordinate clauses with a finite main verb (not including copula *be*) from Old to Late Modern English.⁸

3.1. Data

As (7) shows with clauses from different periods, temporal NP-adjuncts in medial position can be found throughout the history of English.⁹

- (7) a. *for þat þe he þis dai aros of deaðe.* (CMTRINIT,97.1303; 1225)
 because he this day arose of death
 ‘because this day he arose from death’
- b. *Myn Maister Markham yesterday rode owte of London be-tymes.*
 (PASTON,II,142.319.8721; 1456)
 My Master Markham yesterday rode out of London early
 ‘My Master Markham rode out of London yesterday at an early hour’
- c. *One of my Fellow Prisoners last night receiv'd a letter from his wife ...*
 (PHENRY-E3-H,341.46; 1685)
- d. *If the head mistress each week looks over the mark-book in the presence of the class and the teacher ...*
 (BEALE-1898-2,31.460; 1898)

In addition to clauses with medial NP-adjuncts as in (7), the data collected also include all clauses with the corresponding elements in pre-subject position and in postverbal position. Any number of additional elements may occur in these clauses. In order to trace the diachronic development of medial NP-adjuncts throughout the history of English, the frequency of medial placement was measured (a) against the total of all clauses with an NP-adjunct and (b) against the total of all clauses with an NP-adjunct following the subject (only medial or postverbal). The latter method was used for Table 1 below as this allows us to compare the data for NP-adjuncts with

As for the focus on affirmative clauses, the aim is to avoid any potential issues of scope that could have an influence on the distribution of the NP-adjunct in negative clauses.

⁷ This method based to the presence of commas does of course not allow us to identify all adjuncts that would have been prosodically marked as parenthetical in spoken language as it is unlikely that commas were consistently used in this context by all authors throughout the history of English. The aim here is therefore simply to reduce the influence of parenthetical intonation on our data to a minimum.

⁸ Substantial clause type differences can only be found in Old English and Early Middle English (1150-1250), with medial adjunct placement being more frequent in subordinate clauses than in main clauses. Given that for most periods this variable does not make a difference, I leave it aside for the purposes of Table 1.

⁹ Historical examples are followed by the reference as used in the corpora and, at the end, the year of composition of the text.

those for adverbs reported in Haerberli and Ihsane (2016). The figures in the final column of Table 1 are taken from that source.¹⁰

Table 1 *The distribution of NP-adjuncts and finite main verbs as compared to adverbs from Old to Late Modern English*

Periods	SXV (X = NP)	SVX (X = NP)	Total (X=NP)	% SXV (X = NP)	Total (X=Adv)	%SXV (X = Adv)
Old English	296	522	818	36.2%	13410	70.2%
1150-1250	12	44	56	21.4%	782	38.2%
1250-1350	0	16	16	0.0%	185	13.5%
1350-1420	4	90	94	4.3%	1650	9.9%
1420-1475	11	173	184	6.0%	1905	8.5%
1475-1500	3	86	89	3.4%	745	16.5%
1500-1525	7	69	76	9.2%	566	37.3%
1525-1570	8	182	190	4.2%	2336	34.3%
1570-1640	22	600	622	3.5%	2917	37.7%
1640-1710	20	504	524	3.8%	4048	42.6%
1710-1770	10	264	274	3.6%	1049	54.4%
1770-1840	16	330	346	4.6%	1172	56.5%
1840-1914	11	395	406	2.7%	930	54.2%

The frequencies in Table 1 show that, while medial NP-adjuncts are common in Old English, their frequency declines rapidly thereafter. The Early Middle English period 1150-1250 is a transitional period during which the rate of medial placement of NP-adjuncts remains non-negligible. But from 1250 onwards this word order becomes a highly marginal phenomenon with frequencies mainly ranging around 3% and 4%. The occasional peaks at 6.0% or 9.2% do not differ in statistically significant ways from the surrounding periods.¹¹

¹⁰ The periodization in Table 1 follows to a large extent the divisions used in the Penn corpora. The only exception is the period 1420-1570, which is divided into four subperiods here rather than the two in the Penn corpora. This is because the time around 1500 is a period of major change in the verbal syntax of English and a more fine-grained division has turned out to be useful for the adverb data examined by Haerberli and Ihsane (2016).

Note also that, after 1570, the periods adopted for the NP-adjunct data in Table 1 and those used by Haerberli and Ihsane differ slightly in some cases (1570-1640 is matched in Table 1 with the adverb data for 1575-1625 in Haerberli and Ihsane; 1640-1710 is compared to 1625-1700 for adverbs; 1710-1770 is compared to 1700-1770). These minor differences are unlikely to have affected the general picture that emerges from the comparative data in Table 1.

Finally, it should also be pointed out that the percentages obtained for adverbs and NP-adjuncts in Table 1 and Table 3 below for the three periods after 1710 are not based on exactly the same datasets. For adverbs as examined in Haerberli and Ihsane's work, the first version of the PPCMBE was used, whereas for the present study of NP-adjuncts the PPCMBE2 is used. The PPCMBE2 is an expanded version of the PPCMBE1 with an overall size that is multiplied approximately by three. For a relatively rare phenomenon like medial placement of NP-adjuncts, it seemed appropriate to use the bigger corpus even if this meant that the comparisons with adverbs are not based on exactly the same material. But once again, it is unlikely that this difference has a substantial influence on the overall picture we obtain for the situation in Late Modern English.

¹¹ Measuring the frequency of medial NP-adjuncts against the total number of NP-adjuncts (i.e. including clause-initial NP-adjuncts) does not lead to a fundamentally different picture. We start with a frequency of 27.1% of medial NP-adjuncts in Old English, followed by a first decline to 17.6% in the

As the final column in Table 1 shows, this development is strikingly different from what is found with adverbs. In Old English, preverbal adverb placement is nearly twice as common as preverbal NP-adjunct placement. The same ratio can also be observed for the Early Middle English period 1150-1250. The decline then proceeds with both orders, and in the periods 1350-1420 and 1420-1475 the difference between the two is no longer statistically significant (chi-square = 3.3, $p = 0.07$ for 1350-1420; chi-square = 1.36, $p = 0.24$ for 1420-1475). But from 1475 onwards, the two diachronic trajectories separate, with SAdvV increasing rapidly. The contrast between the two contexts is statistically significant from 1475 onwards (chi-square = 10.7, $p = 0.001$ for 1475-1500). The increase in preverbal adverb placement occurs in two main steps (the first one around 1500, the second one around 1700), with this word order becoming the majority option in Late Modern English. In contrast, medial NP-adjunct placement remains stable at a very low frequency throughout Early and Late Modern English. Figure 1 below summarizes these quantitative findings.

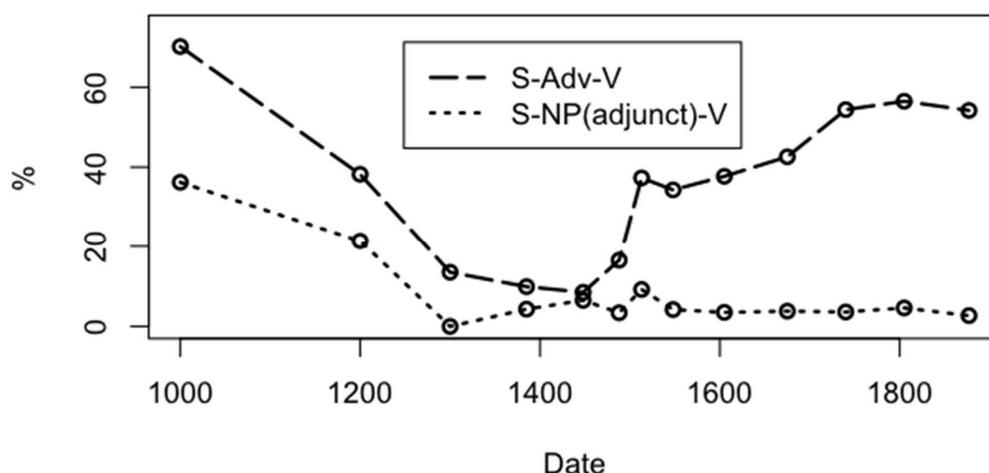


Figure 1 *Medial placement of adverbs and NP-adjuncts from Old to Late Modern English*

3.2. Analysis

In this subsection, I will take Haerberli and Ihsane's (2016) analysis of adverb placement as a starting point to explore the question as to why NP-adjuncts do not undergo the same diachronic development. As Figure 1 illustrates, there are two main differences to be accounted for: (a) Initially, the diachronic development is identical, but medial adverb placement is much more frequent; (b) From around 1500 onwards, medial placement of adverbs increases rapidly while there is stagnation at a low level with NP-adjuncts.

Let us start by considering the first issue, and more specifically the situation in Old English. Haerberli and Ihsane relate the high frequency of preverbal adverb placement in Old English to two factors. First, following Pintzuk (1999) and much subsequent work, it is assumed that Old English shows variation with respect to directionality: The finite verb can occupy a head position (T in Haerberli and Ihsane's

period 1150-1250. Then from 1250 onwards, the frequencies are low, generally around 1% to 2.5% with a single peak in the period 1420-1475 at 4.0%.

analysis) that takes its complement to the left or to the right.¹² The former option derives verb-final or verb-late clauses in which even elements like objects or particles precede the verb. In such clauses, adverbs also occur in a position before the verb. However, Haeberli and Ihsane argue that, although a head-final analysis may account for a large part of the SAdvV orders in Old English, it cannot be maintained for all of them. As has been shown (cf. e.g. Pintzuk 1999, 2005, Pintzuk and Haeberli 2008), clauses involving certain postverbal elements such as pronouns and particles are not compatible with a head-final structure since these elements cannot undergo rightward movement past a verb. Instead, their occurrence in postverbal position must be due to a head-initial structure. But even in such clauses, adverbs can occur between the subject and the finite main verb, and they do so with a non-negligible frequency (28.7% (n = 345); cf. Haeberli and Ihsane 2016:506). Interestingly, a large majority of these cases (more than 70%) involve the adverb ‘then’ (*þa*, *þonne*), which has been argued to have the status of a discourse particle (van Kemenade and Los 2006). Adopting a proposal made by van Kemenade (2011), Haeberli and Ihsane therefore assume that medial adverb placement with head-initial structure may initially have involved a discourse particle position (Spec,PrtP) occurring between TP (hosting the verb in its head) and a higher subject position. Haeberli and Ihsane situate this subject position above the Fin head but do not attribute a more specific label to it. This subject position is distinguished from a lower one in Spec,TP. A partial clause structure based on these proposals is given in (8), which also includes elements of Haeberli and Ihsane’s structural analysis below TP that will be relevant for our later discussion.

(8) SU1 ... Fin [_{PrtP} *þa*, *þonne* [_{TP} SU2 [_{TV}] ... Adv ... [_{Asp} Ψ] [_{VP} Ψ]]]

Given that adverbs other than ‘then’ can be found in this position (e.g. *eac* ‘also’, *nu* ‘now’, *sona* ‘soon’, *swa* ‘so’), albeit at low frequencies, it must be assumed that the use of PrtP in OE is being extended to other adverbs that do not have the status of discourse particles. I will represent this extension in (9) by labelling the projection above TP as an unspecified functional projection FP.

(9) SU1 ... Fin [_{FP} *Prt/Adv* [_{TP} SU2 [_{TV}] ... Adv ... [_{Asp} Ψ] [_{VP} Ψ]]]

As for NP-adjuncts, head-final structure can also be invoked as a source for medial placement. But is the second derivational option, which involves head-initial structure, also available for NP-adjuncts? In order to address this question, we have to identify clauses that are clearly head-initial (i.e. clauses that have a non-extraposable element like a pronoun or a particle to the right of the verb) and that contain an NP-adjunct. Unfortunately, there are only 26 clauses of this type in our corpus. But in none of these does the NP-adjunct occur in medial position. This finding may suggest that the medial position is not available for NP-adjuncts in head-initial structures in Old English. Due to the small amount of data, this conclusion has to remain somewhat speculative, but in terms of the analysis of adverbs outlined in the previous paragraph, such a restriction would not be entirely surprising. As pointed out, the medial position with head-initial structure is primarily used by the discourse particle

¹² For simplicity’s sake, I will refer to variation in directionality here rather than to the presence or absence of different leftward movements that would have to be assumed within a purely head-initial clause structure. The main points to be made below should not be affected by this choice in any substantial way.

þa/þonne in Old English (Spec,PrTP). This element is structurally and prosodically light. It would be plausible to assume then that, although the discourse particle position starts hosting other elements as well, they remain similar in nature. This would be the case of other adverbs, but not for the more complex NP-adjuncts.

If these hypotheses are on the right track, the frequency differences with respect to medial placement with different types of adjuncts in Old English could be accounted for in terms of the options that are available to derive this word order: both head-initial and head-final structure with adverbs, only head-final structure with NP-adjuncts.

After the Old English period, head-final structure declines. There is some evidence for residues of head-final structure in the functional domain in the earliest Middle English period 1150-1250 (cf. e.g. Haeberli and Ingham 2007:18, Kroch and Taylor 2000b:138-142) but after that English can to a large extent be considered as purely head-initial in the functional domain. Given the importance of head-final structure for deriving SXV order in Old English, it is not surprising that this order rapidly declines in Early Middle English both with adverbs and with NP-adjuncts. Haeberli and Ihsane (2016:508-510) identify two further developments in this period that are of relevance for our purposes. First, the distinction between the two subject positions SU1 and SU2 in (8) and (9) becomes blurred, and the language moves towards a system, shown in (10), where the subject and the finite verb occur in a specifier-head relation in TP.

(10) ... *Fin* [_{FP} **Prt/Adv** [_{TP} SU [_{TV}] ... *Adv* ... [_{Asp} Ψ] [_{VP} Ψ]]]

If we assume that T'-adjunction of adjuncts is ruled out, the likelihood for an adjunct to occur between the subject and the verb is thus further reduced. Second, to account for remaining SAdvV orders up to the middle of the 15th century, Haeberli and Ihsane propose that high subject placement marginally persists until then, and that SAdvV continues being derived as in (9) above. Since *þa/þonne* lose their status as discourse particles in Middle English (cf. van Kemenade and Los 2006:244), the position between the high subject and the verb extends its role more and more and becomes a position that can host any type of adverb. What we may assume then is that NP-adjuncts start occurring in this position as well. Hence, SXV is derived identically with adverbs and NP-adjuncts at this point, as shown in (11), but due to the decline of the higher subject position SXV has the status of a marginal word order option with both elements.

(11) SU1 ... *Fin* [_{FP} **Adv/NPadjunct** [_{TP} SU2 [_{TV}] ... *Adv* ... [_{Asp} Ψ] [_{VP} Ψ]]]

After 1475, this situation changes rapidly. The frequency of SAdvV order is multiplied nearly by five within 50 years whereas no significant development can be observed with NP-adjuncts. Haeberli and Ihsane account for the situation with adverbs by assuming that verb movement to a high inflectional head (T) is lost and replaced by verb movement to a lower inflectional head (first M, then Asp).¹³ As a

¹³ The hypothesis that verb movement to T is replaced by verb movement to Asp rather than by complete absence of verb movement is based on the fact that the word order *V-not* remains very strong in the 16th century and beyond. Cases of *V-not* are analysed by Haeberli and Ihsane as involving verb movement to Asp past negation occurring in a NegP between AspP and VP. The loss of *V-not* orders around the 18th century then corresponds to the loss of *V-to-Asp*. From then onwards, the verb remains in its lowest position in the VP.

consequence, any adverbs merged in the inflectional domain between T and Asp now occur preverbally rather than postverbally. This is illustrated in (12).

(12) ... *Fin* [_{FP} *Adv/NP_{adjunct}* [_{TP} *SU* ... *Adv* ... [_{Asp} *V*] [_{VP} *∅*]]]

The question that remains then is why the identical word order pattern with NP-adjuncts does not undergo the same diachronic development. There are two main possibilities to account for this contrast. First, it could be argued that NP-adjuncts are banned from the medial position(s) occupied by adverbs between T and Asp in (12), and clauses with a medial NP-adjunct must therefore be derived in a different way. The alternative, shown in (13), is that the grammar does not distinguish between the two types of adjuncts and they can in principle be merged in the same structural positions.

(13) ... *Fin* [_{FP} *Adv/NP_{adjunct}* [_{TP} *SU* ... *Adv/NP_{adjunct}* ... [_{Asp} *V*] [_{VP} *∅*]]]

Independent factors of the type described in section 2 above would then have to account for the restrictions on medial placement of NP-adjuncts (e.g. processing constraints (Hawkins), relative heaviness/lightness (Ernst), information structure (Hasselgård)).

The first scenario is potentially plausible given Haegeman's (2002) approach to medial NP-adjuncts in Present-Day English. As discussed in section 2, Haegeman proposes that NP-adjuncts do not occur in the inflectional domain but at the IP-edge and that clause-medial placement of an NP-adjunct involves subject movement beyond the IP-edge. The structure I proposed in (11) above for medial NP-adjuncts in Late Middle English (1350-1475), corresponds very much to Haegeman's hypotheses: NP-adjuncts occupy a position above TP (i.e. Haegeman's IP-edge) and the subject is in an even higher position (Haegeman's Spec,SubjP). Thus, we could assume that the way in which clauses with medial NP-adjuncts are derived has been stable since the Late Middle English period. The loss of verb movement to T therefore had an effect on the distribution of adverbs only but not on that of NP-adjuncts.

Although this convergence of two independently proposed analyses is encouraging, I will argue in the next section on the basis of evidence from clauses with a finite auxiliary and a non-finite main verb that the historical development of NP-adjuncts is somewhat more complex than suggested by the data examined so far.

4. Medial NP-adjuncts in clauses with a finite auxiliary and a non-finite main verb

4.1. Data

In clauses with a finite auxiliary, two medial positions between the subject and the main verb have to be distinguished: (a) Position M1 between the subject and the auxiliary; (b) Position M2 between the auxiliary and the non-finite main verb.¹⁴ Temporal NP-adjuncts can be found in both positions throughout the history of

¹⁴ To be precise, an additional distinction could be made here for cases where the finite auxiliary is followed by a non-finite auxiliary (or possibly even two) and then the main verb. However, such cases do not occur very frequently, and a separate quantitative analysis would not seem to be of much relevance for our purposes. M2 therefore includes word orders of the type SAux_{finite}X_{NP}Aux_{non-finite}V as well as SAux_{finite}Aux_{non-finite}X_{NP}V.

English. Example (14) below illustrates option M1, whereas placement in M2 is shown in (15).

- (14) a. *and þe Kyng Eldrede and his broþer Alurede **þat day** were discomfited*
(CMBRUT3,108.3257; c1400)
and the king Æthelred and his brother Alfred *that day* were beaten
'and king Æthelred and his brother Alfred were beaten that day.'
- b. The souldgerors ***that night** were kept in whiles it was tenne of the klok*
(GARDIN,153.007.677; 1545)
The soldiers *that night* were kept in until it was ten o' clock
'The soldiers were kept in that night until it was ten o'clock.'
- c. *if we **this day** are examined concerning a good deed done to an impotent man*
(ERV-NEW-1881-2,4,1A.869; 1881)
- (15) a. *And for a long tyme aftur he was **eche day** techying in þe temple*
(CMWYCSE,261.650; c1400)
And for a long time after he was each day teaching in the temple
'And for a long time after, he taught in the temple every day'
- b. *And the Quene of Hungarye hath **this night** invited me to suppe with her*
tomorowe at night (GARDIN, 191.013.1054; 1545)
And the Queen of Hungary has this night invited me to sup with her
tomorrow at night
'And the Queen of Hungary invited me tonight to sup with her tomorrow'
- c. she *has **this morning** eaten the greatest part of this Trout;*
(WALTON-E3-H,210.23; 1676)
- d. They *will **every day and hour** be stronger*
(SOUTHEY-1813-1,178.88, *Life of Nelson*; 1813)
- e. *Ah, my sweet friend, we were **this moment** speaking of you*
(COYNE-1855-2,18.782)

For the quantitative analysis of medial placement of NP-adjuncts with auxiliaries, the same corpora and the same methods were used as for clauses with finite main verbs in section 3, the only difference being that three distributional options are distinguished rather than two. The results are presented in Table 2, with percentages given for the options that are of interest to us, i.e. M1 and M2.

Table 2 *The distribution of NP-adjuncts, finite auxiliaries and non-finite main verbs from Old to Late Modern English*

Periods	M1 SXAuxV (X = NP)	M2 SAuxXV (X=NP)	SAuxVX (X=NP)	Total
Old English	33 (20.5%)	52 (32.3%)	76	161
1150-1250	2 (13.3%)	6 (40.0%)	7	15
1250-1350	0 (0.0%)	2 (25.0%)	6	8
1350-1420	4 (6.1%)	15 (22.7%)	47	66
1420-1475	2 (0.9%)	27 (11.6%)	204	233
1475-1500	1 (1.5%)	5 (7.7%)	59	65
1500-1525	1 (2.0%)	12 (24.0%)	37	50

1525-1570	12 (7.4%)	38 (23.3%)	113	163
1570-1640	7 (1.4%)	96 (18.6%)	414	517
1640-1710	9 (2.3%)	84 (21.1%)	305	398
1710-1770	1 (0.5%)	32 (17.2%)	153	186
1770-1840	1 (0.4%)	34 (12.5%)	238	273
1840-1914	1 (0.4%)	10 (3.7%)	261	272

The word order option M1 is most frequent in Old English. Once again, this can be related to the head-final properties of Old English as SXAuxV can be analysed as the occurrence of the auxiliary in a head-final projection and rightward movement of the main verb (Verb (Projection) Raising, cf. van Kemenade 1987, Haeberli and Pintzuk 2012). The frequency of M1 then declines with the loss of head-final structure. From 1250 onwards, SXAuxV order is extremely rare throughout the history of English with frequencies generally not reaching more than 2%.

Word order option M2 is also more frequent in Old English than in most of the later periods. However, the difference is less substantial here. The reason for this is that SAuxXV can be straightforwardly derived by a head-initial grammar, and the decline of head-final structure does therefore not affect option M2 in as important a way. Only cases where SAuxXV is derived through head-final structure with Verb Projection Raising are no longer available after the Old English period. Despite this limited influence of the loss of head-final structure, we can observe a downward trend for M2 that persists throughout the Middle English period and reaches a low point at the end of the 15th century with 7.7% of M2. After that, the frequency goes back to the level of the 14th century around 20% and remains relatively stable until 1770. A second decline can then be observed in the Late Modern English period, with the decline in the period 1840-1914 being particularly significant (chi-square 14.15, $p < 0.001$).

As was done in Table 1 for main verbs, I will now compare clauses with NP-adjuncts on the one hand and clauses with an adverb of any type on the other. Columns 2 and 3 repeat the frequencies for NP-adjuncts from Table 3 whereas columns 5 and 6 present corresponding figures for the distribution of one-word AdvPs (based on Haeberli and Ihsane in preparation). The total number of clauses on which the percentages are based (i.e. M1 + M2 + SAuxVX) are listed in columns 4 and 7.

Table 3 *Medial NP-adjuncts and adverbs in clauses with finite auxiliaries*

Periods	M1 SXAuxV (X = NP)	M2 SAuxXV (X=NP)	Total (X=NP)	M1 SXAuxV (X = Adv)	M2 SAuxXV (X = Adv)	Total (X = Adv)
Old English	20.5%	32.3%	161	23.1%	64.4%	3463
1150-1250	13.3%	40.0%	15	10.6%	59.2%	407
1250-1350	0.0%	25.0%	8	3.6%	56.5%	168
1350-1420	6.1%	22.7%	66	3.9%	51.3%	1196
1420-1475	0.9%	11.6%	233	1.4%	50.1%	1659
1475-1500	1.5%	7.7%	65	2.6%	52.2%	699
1500-1525	2.0%	24.0%	50	2.9%	63.0%	622
1525-1570	7.4%	23.3%	163	3.2%	59.8%	3262
1570-1640	1.4%	18.6%	517	2.0%	65.7%	4045
1640-1710	2.3%	21.1%	398	1.6%	67.4%	6438

1710-1770	0.5%	17.2%	186	2.8%	74.3%	1186
1770-1840	0.4%	12.5%	273	2.9%	75.1%	1575
1840-1914	0.4%	3.7%	272	3.9%	70.2%	1245

If we first consider the status of the M1 position, we can observe that the diachronic developments with the two types of adjuncts are very similar. SxAuxV occurs with a frequency of around 20% in Old English, then the rate declines and remains at very low levels from 1250 onwards. Although adverbs tend to occur in pre-auxiliary position somewhat more frequently, the differences are minor in terms of percentage points as well as proportionally, with the exception of the Late Modern English period (1710-1914) where M1 is between 5 to 10 times more frequent with adverbs.

The situation is different with M2. Already in Old English, M2 order is over 30% more frequent with adverbs than with NP-adjuncts, and a substantial difference in the range of 30% to 40% then persists throughout the history of English. Proportionally, the frequencies are generally about twice to three times as high with adverbs compared to NP-adjuncts. At two points, in the 15th century and after 1710, the frequency differences are even increased due to a decline in SAuxXV order with NP-adjuncts. The development is particularly striking in the second one of these periods, as the decline with NP-adjuncts goes together with a certain increase with adverbs. The result of this is a very strong contrast between the two contexts in the final period examined, with the frequency difference reaching 66.5% and M2 being nearly twenty times more frequent with adverbs.

The auxiliary data thus confirm the finding in section 3 that medial placement is considerably less common with NP-adjuncts than with adverbs throughout the entire history of English. One issue that remains to be considered now is what the status of medial NP-adjunct placement is in the different contexts presented in Tables 1 and 2, i.e. in clauses with finite main verbs as opposed to clauses with finite auxiliaries. Before repeating the relevant data, a preliminary point is necessary, however. As often observed in the literature (cf. Lightfoot 1979, 2006 among many others), auxiliaries behave syntactically like regular main verbs in Old and Middle English whereas, after the Middle English period, the two verbal elements start having distinctive properties. This contrast is generally analysed structurally in terms of the decline of verb movement with finite main verbs, and the absence of such a decline with auxiliaries. Thus, from a structural point of view, data involving finite main verbs and finite auxiliaries can be compared in a straightforward manner up to around 1500 as the two elements occupy identical positions. With the reanalysis of auxiliaries, however, such a parallelism no longer holds and comparisons have to take the distinct structural distribution of auxiliaries and main verbs into account. This development is illustrated for adverbs in (16).¹⁵

- (16) a. *Before 1500:* $SU (Adv) [{}_T V_{+fin}/Aux_{+fin}] \dots (Adv) \dots [{}_{VP} \cancel{V}_{+fin}/V_{-fin}]$
 b. *After 1500:* $SU (Adv) [{}_T Aux_{+fin}] \dots (Adv) \dots [{}_{Asp} V_{+fin}] [{}_{VP} \cancel{V}_{+fin}/V_{-fin}]$

Table 4 compares the figures for medial placement of NP-adjuncts with auxiliaries from Table 2 and with main verbs from Table 1.

¹⁵ As pointed out in footnote 13 above, V-to-Asp as represented in (16b) is then lost around by the 18th century as well, and the finite verb remains within the VP.

Table 4 *Medial NP-adjuncts in clauses with finite auxiliaries and in clauses with finite main verbs*

Periods	M1 SXAuxV (X = NP)	M2 SAuxXV (X=NP)	SXV (X=NP)
Old English	20.5%	32.3%	36.2%
1150-1250	13.3%	40.0%	21.4%
1250-1350	0.0%	25.0%	0.0%
1350-1420	6.1%	22.7%	4.3%
1420-1475	0.9%	11.6%	6.0%
1475-1500	1.5%	7.7%	3.4%
1500-1525	2.0%	24.0%	9.2%
1525-1570	7.4%	23.3%	4.2%
1570-1640	1.4%	18.6%	3.5%
1640-1710	2.3%	21.1%	3.8%
1710-1770	0.5%	17.2%	3.6%
1770-1840	0.4%	12.5%	4.6%
1840-1914	0.4%	3.7%	2.7%

Let us start by considering the data up to 1500. As discussed in section 3.2, SXV orders are best analysed in this period as involving verb movement to T. Given the observations made in the previous paragraph, the same assumption can be made for auxiliaries. Thus, the data for SXV order can be directly compared with those for SXAuxV order (M1) in Table 4, and we can indeed observe that the two contexts have very similar properties. Although SXV is generally somewhat more frequent than SXAuxV, the overall diachronic development is identical and the occurrences of SXV/SXAuxV have a very marginal status from 1250 onwards. As for the M2 order with auxiliaries, it shows that NP-adjuncts can occur in the domain between T and the VP occupied by the main verb and that they do so with considerable frequencies although a certain decrease can be observed in the 15th century.

After 1500, main verbs no longer move to T whereas auxiliaries can still be assumed to occupy this position. This means that SXV order now has to be compared with M1 and M2 combined, since adjuncts occupying the M2 position between TP and VP would be expected to be able to precede the main verb if the clause does not contain a finite auxiliary. Once we compare the frequencies for M1+M2 with the frequencies for SXV in Table 4 after 1500, we can observe that there is a substantial contrast between auxiliaries and main verbs. Whereas the auxiliary data suggest that medial placement of NP-adjuncts is common (around 20%, with the exception of the final decline), the figures involving finite main verbs show a very different picture (low frequencies around 4%, with the exception of one (statistically not significant) peak at 9.2% at the beginning). The consistently low rates observed in main verb contexts even after the loss of verb movement is now all the more surprising given the relatively high frequencies found in auxiliary contexts.

One final point to be made with respect to Table 4 is that the contrast between auxiliaries and main verbs disappears in the last period (1840-1914). The frequency of medial placement with auxiliaries remains somewhat higher (4.1% for M1+M2, 2.7% for SXV), but the contrast is not statistically significant (chi-square 0.92, $p = 0.34$). In

the preceding period (1770-1840), we still find a highly significant difference between the two contexts (12.9% vs. 4.5%; chi-square 13.56, $p < 0.001$).

4.2. Analysis

With these additional findings in mind, we can return to the question raised in section 3.2 as to how the unexpected quantitative stability of SXV order with NP-adjuncts after 1500 can be explained. Two possibilities were suggested in section 3.2. Either NP-adjuncts are blocked from the positions occupied by medial adverbs throughout the history of English and clauses with medial NP-adjuncts are derived in a different way (as proposed e.g. in Haegeman's 2002 account of Present-Day English); (ii) NP-adjuncts and adverbs can be merged in the same positions but the use of the medial positions is restricted by factors that are external to the grammar as such (e.g. processing constraints and/or information structure). According to this option, NP-adjuncts could be inserted in the Adv positions in structure (16).

The data in Table 4 now provide some evidence against option (i). The non-negligible frequencies with which NP-adjuncts occur in the medial position M2 with auxiliaries at least up to the 19th century are most easily accounted for if we assume that placement of NP-adjuncts in a structural position between T and the VP is not ruled out. If it were, the quantitative distribution of the two options M1 and M2 would be highly surprising given a structural analysis along the lines proposed by Haegeman (2002). As Haegeman points out (2002:107, fn. 26), in terms of her analysis, the word order SAuxX_{NP}V would presumably have to be analysed as being the result of insertion of the NP-adjunct at the IP-edge, movement of the subject to SubjP and, in addition, auxiliary movement to the head of SubjP. Without the last step, we would obtain the order SX_{NP}AuxV. This would imply that throughout the history of English a word order option (M2) that is derivationally more complex is strongly favoured over one (M1) that is simpler. Given the role economy considerations play in generative theory, this would be an unexpected conclusion.

In sum, an account of the diachronic developments immediately after 1500 in terms of different structural analyses for adverbs and NP-adjuncts seems to be problematic. Let us therefore adopt what would be the minimal assumption, namely that NP-adjuncts can, in principle, be merged in the same positions as adverbs at this point in the history of English. In terms of this hypothesis, we have to explain why medial placement of NP-adjuncts occurs much more frequently in clauses with a finite auxiliary than in clauses with a finite main verb. A possible account of this could be based on Hawkins' (2004) Minimize Domains (MiD) approach. As pointed out in section 2, according to this approach, the human processor prefers to minimize the domains in which essential relations between linguistic items are established. If we assume that both the thematic relation between a verb and its subject and the agreement relation between a finite verbal element and the subject are part of these essential relations, we immediately get the desired result for the quantitative contrasts shown in Table 4.¹⁶ In a clause with a finite auxiliary and the word order SAuxXV (M2), X only affects the size of the domain for one of these two relations, the

¹⁶ Hawkins (2004) does not explicitly consider the role of subject-verb agreement in a language like English. However, the assumptions made here would be in line with some of the general points made by Hawkins. For example, he suggests that the MiD "predicts that *all* syntactic and semantic relations between categories will prefer minimal domains for processing" (emphasis his) and that "[t]he more syntactic and semantic relations linking two categories, and the more minimal their domains can be in the processing of each, the more adjacent or proximate these categories should be" (2004:33).

thematic relation. The agreement relation is established optimally under adjacency between the subject and the auxiliary. With finite main verbs, however, the domains for both the thematic relation and the agreement relation are affected by the presence of an adjunct in the order SXV. Thus, medial placement of an adjunct in the position M2 with an auxiliary is preferred over medial placement with a finite main verb because the negative effects of the adjunct on MiD are smaller with the former than with the latter. As a consequence, SAuxXV order is used more frequently than SXV order. The same frequency contrasts between auxiliaries and main verbs would then also be expected with adverbs. A comparison of the frequencies for SXV order with adverbs in Table 1 (rise from 8.5% in the 15th century to over 50% in Late Modern English) and SAuxXV with adverbs in Table 3 (frequencies between 50% and over 75%) shows that this expectation is borne out. Furthermore, as pointed out earlier, the frequencies with adverbs are systematically higher in both contexts compared to NP-adjuncts, which, as observed in section 2, could be related to the richer structure of NP-adjuncts as compared to one-word AdvPs.

If a processing account of the contrast between auxiliaries and main verbs with respect to medial placement of adjuncts is on the right track, there is one aspect of the data presented in Tables 1 to 4 that remains unexpected. The minimal assumption would be that processing constraints remain stable over time. In our case, this means that the advantage of clauses with auxiliaries over those with main verbs with respect to medial placement of NP-adjuncts should lead to substantially higher frequencies with auxiliaries throughout the history of English. This is to a large extent the case, but as pointed out in the discussion of Table 4 already, there is one clear exception to this generalization occurring in the period 1840-1914.¹⁷

Although somewhat speculative, the following scenario could account for this development. When we consider the proportion of NP-adjuncts among all medial adjuncts, we can observe that it gradually declines from 1500 onwards. This is shown in Table 5, which compares the numbers of medial NP-adjuncts and other medial adjuncts in Late Middle English, Early Modern English and Late Modern English: one-word AdvPs (X = Adv; data based on Haeberli and Ihsane 2016), AdvPs containing more than one word (X = AdvP (>1)), adjunct PPs,¹⁸ and other adjuncts that were excluded from the counts for NP- and PP-adjuncts.^{19, 20}

¹⁷ A second significant contrast is found in the period 1475-1500. Although medial placement with auxiliaries is more frequent in this period than with main verbs (9.2% for M1+M2, 3.4% for SXV; cf. Table 4), the difference is not statistically significant (Fisher's Exact Test, $p = 0.17$). However, the amount of evidence for this period is very limited, and I will have to leave it open here how this contrast may have to be accounted for.

¹⁸ For this column, all clauses with a constituent in medial position that are labelled as PP in the parsed corpora were examined. I excluded the following elements from the counts: clear cases of PP arguments; elements of the type X+P such as *therefore* or *thereby*; two-word PPs that regularly occur in medial position in Present-Day English such as *at last*, *at least*, *indeed*, *in fact* or *of course*. PP-medial adjuncts raise a number of interesting issues with respect to the analysis pursued in this paper, but I will have to leave a detailed investigation of these issues for future research.

¹⁹ This group mainly includes adjuncts that are labelled as NP-TMP or PP in the parsed corpora but are entirely productive in medial position in Present-Day English such as *sometimes*, *once* or *twice* for NPs and the elements mentioned in fn. 19 above for PPs. Parenthetical elements that are preceded and/or followed by a comma in the corpora are not included in this table.

²⁰ As pointed out in fn. 12, the tables in this paper are generally based on a larger version of the Late Modern English corpus (PPCMBE2) than Haeberli and Ihsane's work. In order to make the data from the different studies comparable, I have based the figures in Table 5 only on text files that occur in the first version of the PPCMBE. Hence, the numbers for NP-adjuncts in this table are lower than the totals for the periods 1710-1770, 1770-1840 and 1840-1914 in Tables 1 and 2.

Table 5 *NP-adjuncts and other adjuncts in medial position*

Period	NP	Adv	AdvP (>1)	PP	Other	Total	%NP
1350-1500: SXV	19	448	32	230	46	775	2.5%
1500-1710: SXV	57	3373	208	643	209	4490	1.3%
1710-1914: SXV	13	1773	95	77	286	2244	0.6%
1350-1500: M1+M2	54	1897	190	430	63	2634	2.1%
1500-1710: M1+M2	259	8319	1275	2438	925	13216	2.0%
1710-1914: M1+M2	26	3065	293	779	757	4920	0.5%

The data in Table 5 show that, in the texts examined, the number of medial NP-adjuncts has always been rather low compared to that of other adjuncts in the same position. But the relative frequency of medial NP-adjuncts is reduced even further in Early and Late Modern English. Statistically significant decreases can be observed with finite main verbs (SXV) from Late Middle to Early Modern English (chi-square = 6.49, $p = 0.01$) and from Early to Late Modern English (chi-square = 6.93, $p < 0.01$), and with auxiliaries (M1+M2) from Early to Late Modern English (chi-square = 47.48, $p < 0.001$). What could be argued then is that, once the frequency of medial NP adjuncts falls below a certain threshold, the adjunct positions in the inflectional domain are reanalysed by language learners as categorially restricted and no longer available to NP-adjuncts. As a consequence of this, the rare remaining medial NP-adjuncts have to be given a different structural analysis. Here, an approach along the lines proposed by Haegeman (2002) with NP-adjuncts merged at the IP-edge would now be conceivable. What this would suggest then is that the distinctive structure for NP-adjuncts proposed for Present-Day English by Haegeman emerged only in the Late Modern English period.

However, these observations do not allow us to answer our initial question yet, i.e. why by the end of the Late Modern English period medial NP-adjuncts stop being more frequent with auxiliaries as compared to main verbs. In terms of the processing factors (MiD) discussed earlier, the order SAuxX_{NP}V (M2) should be favoured over SX_{NP}V regardless of the structural position in which the adjunct occurs. What the diachronic development may suggest is that the processing advantage of medial NP-adjuncts in M2 is offset by negative effects of the structural change occurring in Late Modern English. In terms of Haegeman's (2002) analysis, this is indeed what can be argued to happen. As discussed earlier, the hypothesis that NP-adjuncts are merged at the IP-edge implies that with the orders SX_{NP}V and SX_{NP}AuxV (M1) the subject moves past the adjunct to a high subject position in SubjP. But to derive SAuxX_{NP}V (M2), a further derivational step is necessary besides subject movement: Movement of the auxiliary to Subj. Thus, from the point of view of derivational economy, SX_{NP}V and M1 are favoured over M2 because they involve fewer derivational steps, whereas, from the point of view of processing, M2 is favoured over SX_{NP}V and M1 due to MiD. It could be argued then that, on balance, M2 no longer has a privileged status once NP-adjuncts are reanalysed as occurring at the IP-edge, and that the loss of the frequency contrasts observed earlier is a consequence of this structural change. Such a conclusion must remain somewhat speculative at this point, however. First, although the analysis proposed gives the desired result, it raises the potential problem of attributing a cumulative effect on usage frequencies to factors that are of a fundamentally distinct nature, i.e. processing constraints and economy constraints on structural derivations. It remains to be seen whether such a hypothesis is legitimate

and finds independent support in other contexts. Secondly, being based on Haegeman's analysis of Present-Day English, the above proposals imply that the quantitative pattern observed for the period 1840-1914 has remained stable since then. Future research will have to determine whether this is indeed the case. Finally, the proposals made above have further consequences as for example for the analysis of PP-adjuncts, an issue that I will have to leave for future research.

The aim of the analysis so far in terms of processing and structural change has been to explain the lower frequencies of medial NP-adjuncts as compared to adverbs and the frequency differences between main verb and auxiliary contexts. What these proposals cannot account for so far is the register variation that has been observed for Present-Day English. Preferences due to processing advantages would be expected to hold across registers. Similarly, the fact that we assign a distinctive structure to medial NP-adjuncts would not explain why this option is more common in journalistic prose than elsewhere. An additional factor is therefore likely to play a role here. As discussed in section 2, Hasselgård (2010) proposes that the relevant factor is information structure. More precisely, she notes that medial adjuncts tend to lack focus and have low informational content, and that this may frequently be true of NP-adjuncts in journalistic prose but much less so in other registers. Hasselgård's hypothesis could now be integrated into our account. As observed in section 3.2, the earliest occurrences of medial adverb placement in head-initial structure as found in Old English mostly involve the elements *þa* and *þonne* ('then'). These have been analysed as discourse particles and have a very low informational content. The information-structural constraints on the medial adjunct position in head-initial contexts could therefore be argued to have its origin in Old English and thus to have been in place throughout the history of English. If this is correct, it is not only preferences due to processing advantages but also information-structural preferences that contribute to the higher frequencies of medial placement with adverbs as compared to NP-adjuncts in the history of English.²¹ However, this additional factor is unlikely to be relevant for the contrast between main verb and auxiliary contexts discussed in the previous paragraphs, as the information-structural properties of NP-adjuncts would not be expected to be affected substantially by the presence or absence of an auxiliary.

5. Conclusion

²¹ Given these proposals, it may be unexpected now that, as observed earlier, there are no statistically significant contrasts between NP-adjuncts and adverbs in clauses with finite main verbs in two Late Middle English periods (1350-1420, 1420-1475). Several observations can be made in this respect. First, even though statistical significance is not reached, the rates of medial placement remain higher with adverbs in these periods than with NPs. Second, the contrast is very close to significance in the first period ($p = 0.07$). Third, more than half of the examples of $SX_{NP}V$ in the period 1420-1475 come from two authors only (6 out of 11). Furthermore, this is one of only two periods after 1150 with a rate of $SX_{NP}V$ above 5%. These two observations may suggest that our sample is not necessarily representative. Finally, I proposed earlier that $SAdvV$ is a word order option that is on its way out of the language in this period and that it is generally derivationally complex (adverb movement above TP and subject in a high position). This marked status may have led to a reduction of the rate of $SAdvV$ to a level that is comparable to $SX_{NP}V$ despite the processing and information-structural advantages. Overall, it seems to me that the Late Middle English data do not provide sufficiently robust evidence against the hypothesis that processing and information-structural properties affect medial adjunct placement throughout the history of English.

Present-Day English shows a surprising contrast with respect to adjunct placement between the subject and the main verb. Whereas adverbs productively occupy this medial area of the clause, the occurrence of NP-adjuncts is very constrained. Although medial NP-adjuncts can be found in corpora, they are infrequent and tend to be judged as marginal or ungrammatical by speakers. Furthermore, they seem to be subject to register variation, with journalistic prose regularly being identified as a context that favours the use of medial NP-adjuncts. The aim of this paper was to shed new light on this distributional contrast between adverbs and NP-adjuncts by exploring the diachronic development of adjunct placement from Old to Late Modern English.

A quantitative overview of the placement of adverbs and NP-adjuncts throughout the history of English led to two main findings. First, ever since the decline of head-final structure in early English, the frequency of medial placement of NP-adjuncts in clauses with finite main verbs has been very low. This is in contrast to adverbs, which, after a low-frequency phase in Late Middle English, start to become more and more common in medial position as a consequence of the decline of verb movement around 1500. Second, data involving clauses with a finite auxiliary and a non-finite main verb show that, although a clear contrast between adverbs and NP-adjuncts remains, medial placement of the latter is considerably more frequent in this context than with finite main verbs. In particular, word orders with the adjunct between the auxiliary and the non-finite main verb are fairly common. It is only in the Late Modern English period that medial NP-adjuncts decline with auxiliaries. In the final period examined (1840-1914), they are rare in both types of clauses (2.7% with main verbs, 4.1% with auxiliaries) and the contrast is no longer statistically significant.

In order to account for these quantitative patterns, I proposed that, from Old English to the 19th century, NP-adjuncts are similar to adverbs with respect to where they are merged in the clause structure. More precisely, NP-adjuncts, like adverbs, can occupy a position in the domain between TP and VP. This accounts for why NP-adjuncts regularly occur between a finite auxiliary and a non-finite main verb throughout most of the history of English. As for the fact that medial placement is substantially less frequent with NP-adjuncts than with adverbs, I followed proposals made in the literature for Present-Day English, assuming that processing constraints (cf. Hawkins's (2004) MiD) and information-structural properties (cf. Hasselgård 2010) disfavour the use of NP-adjuncts in a medial position compared to adverbs. These hypotheses also allow us to account for frequency differences between clauses with finite main verbs and clauses with finite auxiliaries (MiD), and for register variation (information structure). Finally, with respect to the decrease of NP-medial adjuncts in clauses with auxiliaries in Late Modern English, I suggested that it may be due to a structural reanalysis that removed the advantage auxiliaries had over main verbs with respect to medial placement of NP-adjuncts. As for the cause of this structural reanalysis, I related it to a decline of the proportion of NPs among all medial adjuncts in the modern period. This decline can be argued to have led language learners to reanalyze the adjunct positions in the inflectional domain as categorially constrained and unavailable for NPs. Remaining instances of medial NP-adjuncts would then have been reanalyzed as involving a different structure, one involving the IP-edge as proposed for Present-Day English by Haegeman (2002).

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