Cascading parameter changes: internally-driven change in Middle and Early Modern English*

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Abstract

Keenan (2002: 2) proposes that syntactic change is subject to Inertia: syntax itself cannot change endogenously. Syntactic change can, however, be caused by changes to PLD arising from phonological, morphological or lexical change or extra-linguistic factors like contact. We explore the idea that there is additionally a syntax-internal cause for syntactic change, which arises when an initial, extra-syntactically induced parameter change creates a system which has a propensity to further parametric change. This may lead to cascades of parameter changes over several centuries, giving rise to a typological shift. We explore this idea by looking at a series of changes which took place in the history of English between 1100 and 1700, which had the net effect of transforming English from a typologically standard West Germanic language into Modern English.

1. Introduction

Keenan (2002: 2) puts forward an important principle of syntactic change: the Inertia Principle. Keenan formulates this as follows:

(1) Things stay as they are unless acted on by an outside force or decay.

We assume that syntactic change is a consequence of abductive reanalysis leading to parameter-resetting in first-language acquisition (see Lightfoot 1979, 1991, 1999). In that case, we can take (1) to mean that, all other things being equal, the target system in first-language acquisition will be converged on successfully. This is no doubt due to the highly restricted range of analyses of the Primary Linguistic Data (PLD) that Universal Grammar (UG) allows and the limited exposure to PLD needed for parameter fixation, i.e. standard poverty-of-stimulus considerations.

Longobardi (2001: 278) adopts Keenan’s principle, and puts forward the following very interesting version of it:

(2) Syntactic change should not arise, unless it can be shown to be caused (emphasis his)

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In other words, as Longobardi says, “syntax, by itself, is diachronically completely inert” (277-8). In minimalist terms, this means that the computational system of human language (C_{HL} in Chomsky’s (2001, 2004, 2005) terminology) is not itself capable of endogenous change.

The question that then arises is under what circumstances syntactic change can in fact happen. This is the central question that we wish to address in this paper. According Longobardi’s version of Inertia in (2), syntactic change must be “a well-motivated consequence of other types of change (phonological changes and semantic changes, including the appearance/disappearance of whole lexical items) or, recursively, of other syntactic changes” (2001: 278, emphasis ours – MTB/IGR). Following and elaborating slightly on Longobardi’s point as just quoted, we take it that syntactic change can be caused by changes to PLD arising from independent phonological, morphological or lexical change, or from extra-grammatical factors such as contact. In this paper we intend to develop the idea of recursive syntactic change, that which arises when an initial, extra-syntactically induced parameter change creates a system which has a propensity to further parametric change. As we show, using data from the history of English, this may lead to cascades of parameter changes over several centuries, giving rise ultimately to a major typological shift and the illusion of “typological drift”, in the sense of Sapir (1921) (cf. Sapir’s 1921: 165 definition of drift as “the vast accumulation of minute modifications which in time results in the complete remodeling of the language”). We explore this idea by looking at a series of changes which took place in the history of English between 1100 and 1700, which had the net effect of transforming English from what one might think of as a “typologically standard” West Germanic language into the highly unusual system of Modern English, which has many features unattested in the neighbouring Germanic, Romance and Celtic languages.

The changes we look at are the following: the shift from OV to VO (12th and early 13th century), the loss of “residual” OV orders (ca. 1400), the development of clause-internal expletives and of systematic raising of subjects (15th century); the loss of V2 (ca. 1450), the development of the auxiliary system (modals and do) (ca. 1525), the loss of “short” verb-movement (ca. 1575), the contraction of negation (ca. 1600), the development of negative auxiliaries (1630s), and the development of do-support (later 17th century).

The paper is organized as follows: in Section 2, we give the general theoretical background to the analyses we will propose, based on Biberauer & Roberts (2005a); in Section 3, we summarise Biberauer & Roberts’ (2005a,b) analysis of word-order change in Middle English (this covers the first three changes listed above); Section 4 deals with the loss of V2, the development of the auxiliary system and the loss of short V-movement, following the proposals in Biberauer & Roberts (2005b,c); here we also present our analysis of the development of do-support. Section 5 concludes the paper.
2. **Theoretical background: Agree, EPP-features and pied-piping**

Chomsky (2001, 2004, 2005) proposes a system of feature-valuing and movement which relies on two main notions: Agree and Extended Projection Principle (EPP) features. Here we will briefly describe this system and how it is applied in the analysis of word-order change in ME put forward by Biberauer & Roberts (2005a).

Agree is a relation between two heads \( \alpha \) and \( \beta \), where the following conditions hold:

\[
\text{(3) a. } \alpha \text{ asymmetrically c-commands } \beta; \\
\text{b. } \alpha \text{ and } \beta \text{ are non-distinct in formal features; } \\
\text{c. there is no third head } \gamma \text{ which intervenes between } \alpha \text{ and } \beta \text{ which would be able to Agree with } \alpha \text{ (i.e. there is no head } \gamma \text{ bearing features of the relevant type which asymmetrically c-commands } \beta \text{ but not } \alpha). \\
\]

Where Agree holds, \( \alpha \) is known as the Probe and \( \beta \) as the Goal. A precondition for Agree is that both the Probe and the Goal must be active, meaning that they must bear unvalued formal features.\(^1\)

A typical example of the Agree relation is that which holds between T(ense), the head which bears \( \varphi \)-features relating to the subject, and the \( \varphi \)-features of the subject itself, merged in SpecVP. As shown in (4):

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\(^1\) Formal features are those which are directly relevant to the functioning of the operations of syntax, such as \( \varphi \)-features (person and number features), Case features and categorial features. These features may or may not play a role at the phonological and semantic interfaces. Other features, such as [sonorant] or [monotone increasing] may play a role only at one or other interface. It is useful to think of formal features as attribute-value pairs, e.g. [Person: 3]. In this way, unvalued features can be seen as those simply lacking a value, and the Agree operation can be seen as copying values between the Probe and the Goal. A condition on the semantic interface is that all formal features must be valued (cf. the Principle of Full Interpretation).

Christer Platzack (p.c.) points out that it may not be necessary to assume that both Probes and Golas be active as a precondition for Agree. In particular, it might be possible to drop the requirement that the Goal be active. In order to avoid Agree taking place with a closer Goal with valued features and failing to value a more distant Goal with unvalued features, Platzack suggests adopting a version of Starke’s (2001: 8) Anti-Identity Principle, which allows Agree between the two occurrences of \( a\beta \) in the configuration in (i):

\[
\text{(i) } \ldots a\beta \ldots \alpha \ldots a\beta \\
\]

The difficulty we see with this is that it is not clear how it copes with cases of multiple Agree of the following abstract kind:

\[
\text{(ii) } \ldots a\beta \ldots \alpha \ldots \beta \ldots \\
\]

Here \( a\beta \) is able to Agree for \( a \) with \( \alpha \) and for \( \beta \) with \( \beta \). Starke’s principle cannot account for this. See Bejar & Rezac (2003) for cases of this type. For this reason, we retain the approach proposed by Chomsky.
Here the structural conditions for Agree, given in (3), are satisfied: T asymmetrically c-commands D, they are non-distinct in formal features since both bear φ-features and there is no head bearing φ-features intervening between them. Thus, if both T and D bear unvalued features, they are able to Agree. T is taken to have unvalued φ-features, while D, being a nominal element, is inherently specified for these features. D, on the other hand, has an unvalued Case feature. T and D in (4) can therefore Agree, with T’s φ-features being valued by D and D’s Case feature in turn being valued as Nominative by (finite) T in virtue of this Agree relation. This account therefore captures the inherent relation between Nominative Case and agreement with the subject.

Note, however, that the account of feature-valuing outlined above makes no reference to movement. In many languages, of course, the DP in (4) raises to the specifier of the head with which it Agrees, i.e. to SpecTP, the “canonical subject position” since Chomsky (1982). In terms of the theory we adopt here, this operation is in principle independent of Agree, although related to it. More specifically, movement in the Probe-Goal system under discussion here only takes place where the target of movement (i.e. the Probe) bears an EPP-feature.\footnote{This use of the term “EPP” bears only a rather indirect relation to the Extended Projection Principle as originally proposed in Chomsky (1982: 10). For our purposes here, it suffices to think of the EPP-feature as a movement-triggering diacritic.} Thus if the Probe involved in an Agree relation between two heads bears an EPP-feature, the Goal will raise to the Probe, either to a head-adjoined position or to a specifier, depending on the structural status (head vs XP) of the category moved. In (4), this means that if T bears an EPP-feature, either a D-head will adjoin to T or a DP will raise to create a TP-specifier. This latter operation is what happens in Modern English (NE) and in many other languages. We construe the EPP-feature as a feature of a feature, i.e. as being specifically associated with (a) particular feature(s) of the Probe (cf. Pesetsky & Torrego 2001: 359). Thus where the EPP-feature is associated with, for example, D-features on T, rather than with T’s Tense features, we represent this as EPP\textsubscript{D}, etc.

A question that now remains is what determines whether a head or an XP undergoes movement? We propose that this depends on pied-piping. The dissociation of feature-valuing from movement makes it clear that a category larger than the Goal, but containing the Goal, may be moved. As we saw above, feature-valuing under Agree is a relation between heads, while the EPP-feature simply requires that the Goal must be moved, but does not in fact necessarily require that only the Goal be moved; it may therefore allow or require, as a matter of parametric variation, that a category larger than the Goal, but containing the Goal, be moved. This is the dimension of parametric
variation that is explored in detail in Richards & Biberauer (2005), Biberauer & Richards (to appear), Biberauer & Roberts (2005a, b) and in Section 3 below.

More generally, the pied-piping option is relevant in a configuration of the type in (5):

(5) \[ \ldots X_{\text{PROBE}} \ldots [\text{YP} \ldots Z_{\text{GOAL}} \ldots ] \ldots \]

Here \( X \) Agrees with \( Z \), and, where \( X \) has an EPP-feature, UG allows cross-linguistic variation as to whether \( Z_{\text{GOAL}} \) moves to \( X \) or the larger category \( \text{YP} \) containing \( Z_{\text{GOAL}} \) moves to \( X \). Movement of the larger category is pied-piping. A well-known example of a cross-linguistic difference of the type in question is the option of pied-piping as opposed to preposition-stranding in the case of \( \text{wh} \)-movement of the object of a preposition. Consider the contrast between English and French illustrated in (6):

(6) a. *Qui as-tu parlé à?
   \[ A \text{ qui } \] as-tu parlé?
   to whom have-you spoken

b. Who did you speak to?
   \[ \text{To whom } \] did you speak?

As shown above, French requires pied-piping of the PP, while English allows preposition-stranding as well as pied-piping. These are parametric options instantiating the schema in (5) since the \( \text{wh} \)-expression is the Goal of Agree (i.e. \( Z \); the Probe (\( X \)) in this case is a [+\( \text{wh} \)] C), and PP is \( \text{YP} \).

With these technical preliminaries behind us, we can now move on to the syntactic changes in the history of English that we are interested in.

3. **Word order changes in Middle English**

Biberauer & Roberts (2005a) (B&R) propose an analysis of Old English (OE) and Middle English (ME) word-order patterns in terms of which the patterns attested at the various stages of OE and ME are analysed as the output of a single grammar which permits restricted types of variation. As we shall see, the variation in question is exactly like that in (5) and (6) above. Their analysis is “Kaynian”, in that, following Roberts (1997), van der Wurff (1997, 1999) and Fischer et al (2000), they assume that the underlying word order throughout the history of English is head-initial (this follows from the Linear Correspondence Axiom of Kayne 1994; see Roberts 1997:397-399 and 405-419 for discussion of this in relation to OE).³

B&R propose that West Germanic-like OE word orders, such as SOVAux in subordinate clauses (main-clause order is consistently complicated by the effects of Verb Second, which we extrapolate away from throughout this section), were derived by the application of two types of ‘large XP’ movement: VP-raising to SpecP and vP raising to SpecTP. To see how this works, consider an SOVAux example like (7):

³ B&R’s approach diverges, however, from some of the aspects of the theory of phrase structure in Kayne (1994), notably in that they assume that a single head may have more than one specifier.
(7) Da se Wisdom þa þis fitte asungen hæfde …
when the Wisdom then this poem sung had
“When Wisdom had sung this poem …”
(Boethius 30.68.6; Fischer et al., 2000: 143, 25)

The order observed in (7) is obtained by means of the operations given in (8) in the order shown:4

(8) (i) V-to-v raising:

```
  νP
 _
 / \
 V+v VP
   _
    (V) O
```

(ii) VP-to-(inner)SpecvP movement:

```
  νP
 _
 / \
 VP v
   _
    (V) O ν (VP)
      _
       V ν
```

(iii) merger of the subject in the topmost SpecvP:

```
  νP
 _
 / \
 S v
   _
    ν’
     _
      VP v’
        _
         (V) O ν (VP)
           _
            V ν
```

4 For ease of exposition, we represent the auxiliary hæfde as being merged in T. It is likely that the structure of clauses containing auxiliaries was more complex than this in OE; ‘restructuring’ verbs, which took infinitival complements, almost certainly had a TP complement and, as such, introduced biclausal structures (see below); habban, beon and weorþan, which typically had participial complements, may also have introduced a biclausal structure. This matter is addressed in more detail in Biberauer &Roberts’ (2005c) discussion of the development of the NE auxiliary system.
In (8i) we illustrate V-movement to the “light verb” position, v. Following Marantz (1997), Chomsky (2004: 112, 122), we assume that this operation is universal and is required in order to “verbalise” the acategorial root (which we continue to write as V for convenience). The movement of VP to SpecvP shown in (8ii) is a case of pied-piping of the type discussed in the previous section. Here v Probes the D-features of the object, and has an EPP D特征. The object is the Goal of Agree with v, but where we have the V-final order in (7) as opposed to a “leaking” order (see below), the larger category containing the object DP, namely VP, moves. This is a parametric option in OE. The effect of moving the remnant, verbless VP, i.e. [VP (V) DP ] (we indicate “traces” of moved categories in parentheses), is therefore to create the surface order OV. (8iii) demonstrates merger of the subject DP in SpecvP. (8iv) shows a second instance of pied-piping, exactly analogous to the one in (8ii) but at a higher structural level. Following merger of hæfde (see Note 4 on the position of auxiliaries), T probes the D-features of the subject, and looks to satisfy its EPP D特征. The subject is the Goal of Agree with T, but where we have the VAux order shown in (7), the larger category containing the subject DP, namely vP, moves. This is a further parametric option in OE. The effect of moving the vP, along with the other operations seen in (8), is therefore to create the surface order SOVAux.

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5 This entails that all VPs are associated with a vP, including unaccusatives and passives. Evidence in favour of this comes from past-participle agreement in French and Italian, which is obligatory in these contexts, cf. the following unaccusative example:

(i) Maria è arrivata
Mary is arrived-f.sg.
“Mary has arrived”

The gender and number agreement on the participle here is arguably a reflection of the defective φ-features associated with v.

6 In assuming that the object’s D-feature is valued by v before the subject is merged, we are departing from Chomsky (1995: 355f.). Instead, we follow the account of the distinction between nominative-accusative and ergative-absolutive case-agreement marking put forward by Müller (2004). Müller argues that the contrast between the two types of pattern derives from a choice in the order of operations in a transitive clause when the derivation reaches v. At this point, v may either Agree with the direct object, or the subject may be merged. If Agree precedes Merge, v’s features Agree with the D-features of the object, and the subject, once merged, must Agree with T. This gives rise to a nominative-accusative system. An ergative-absolutive system derives from the opposite order of operations. Since OE was clearly nominative-accusative, the order of operations indicated in (8) is as predicted by Müller’s analysis.
It is, of course, well known that the subordinate clause word orders exhibited by OE are not restricted to the SOVAux order considered above. B&R show how all of the other available orders, except those where the object is final (on which see below) can be derived by assuming that the EPP$_D$ features of $v$ and T may, in fact, both be satisfied either by means of pied-piping (i.e. moving VP and $vP$ as discussed above) or by moving just the Goal DP, and thus “stranding” VP/$vP$-internal material. Thus OE EPP$_D$-satisfaction is directly analogous to EPP$_{wh}$-satisfaction in the case of extraction of the complement of a preposition in NE, in that both the stranding and the pied-piping options are available. The stranding option in the $vP$-domain gives rise to the derived structure (9), as opposed to (8ii):

\[
(9) \quad \begin{array}{c}
\text{vP} \\
\text{O} \\
\text{v'} \\
\text{v} \\
\text{VP} \\
\text{V} \\
\text{(V)} \\
\text{(O)}
\end{array}
\]

The principal consequence of the object-raising derivation illustrated in (9) is that any VP-internal material additional to the verb itself and the direct object, e.g. indirect objects, PPs, adverbial material, particles, etc., will appear in a postverbal position. So this option explains the attestation of “leaking” structures in OE. We can further explain the fact that languages such as German disallow “leaking” by saying that German does not allow the “stranding” option in this case (in other words, German EPP$_D$ satisfaction is parallel to French $wh$-movement from PPs). B&R are thus able to account for both the V-final and the “leaking” orders in OE in terms of a single grammar with an option for pied-piping vs stranding as regards EPP$_D$ satisfaction in the $vP$ domain.

B&R further argue that the same options were found in the TP-domain. (10) gives the structure that results if the “stranding” option is taken in place of $vP$-fronting at the stage of the derivation illustrated in (iv) above:

\[
(10) \quad \begin{array}{c}
\text{TP} \\
\text{S} \\
\text{T'} \\
\text{T} \\
\text{hæfde} \\
\text{vP} \\
\text{(S)} \\
\text{v'} \\
\text{VP} \\
\text{(V)} \\
\text{O} \\
\text{v} \\
\text{(VP)} \\
\text{V} \\
\text{v}
\end{array}
\]
The surface order that results here is SAuxOV, i.e. an order that is often referred to as “Verb-projection raising” (see van Kemenade 1987 on these orders in OE and Haegeman & van Riemsdijk 1986 on this order in Swiss German and West Flemish; we consider structures of this kind in more detail below where we will suggest that the derivation of VPR involving modals involves a more complex biclausal structure and cyclic vP-movement – see (15) et seq.). In (10), we have “stranding” in the TP-domain, but pied-piping in the vP-domain. Stranding in both domains gives (11):

(11)

Again we have SAuxOV, the “verb-projection raising” order, but this time with leaking of VP-internal material. This order, too, is attested in OE. Examples of the orders in (9 – 11) are given in (12):

(12) a. þa geat mon þæt attor ut on þære sæ then poured man that poison out on the sea
“Then someone poured the poison out on the sea”
(Orosius 258.16; Lightfoot 1991: 61, 18b)

b. … þæt hi mihton swa bealdlice Godes geleafan bodian
that they could so boldly God’s faith preach
“…that they could preach God’s faith so boldly”

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7 We follow the literature on West Germanic, starting with Evers (1975), in using this terminology and the related term “verb raising” for OAuxV orders, although our analysis is very different to those relying on rightward-movement of verbs or verb-projections.

8 Christer Platzack (p.c.) has pointed out to us that the order in (12a) is grammatical in Modern Swedish (Då hällde man gifvet ut på havet, the Swedish translation of (12a)). However, we do not assume that the Modern Swedish example has the structure we assign to (12a). Since Modern Swedish is consistently VO, we assume that v has no EPP feature in this language. In fact, as far as the structure of vP is concerned, Modern Swedish is probably the same Modern English. (Of course, the Swedish example is V2; in this respect Modern Swedish differs from Modern English). The fact that (12a) has a surface order which is compatible with a v lacking an EPP feature shows that identical surface orders can be generated by grammars with quite different parametric properties; this observation underlies the general possibility of diachronic reanalysis leading to parametric change.
c. \ldots paet mon hæfde anfiteatrum geworht æt Hierusalem
that man had amphitheatre made at Jerusalem
\ldots that one had made an amphitheatre at Jerusalem"
(Orosius, Or_6:31.150.22.3120; Trips 2002: 81, 23)

(12a) illustrates the “stranding” mode of EPPD satisfaction in the vP domain: only the object DP, \textit{þæt attor}, raises, stranding the particle \textit{ut} and the PP \textit{on þære sæ}. (12b) illustrates “stranding” in the TP domain, with \textit{hi} raising independently of the rest of the vP, \textit{swa bealdlice Godes geleafan bodian}, to satisfy T’s EPPD feature. Finally, (12c) shows that it was also possible for just the subject (\textit{mon}) and just the object (\textit{anfiteatrum}) to raise to satisfy T and v’s EPP-features. B&R show how postulating a grammar which permits the option of moving just the Goal DP alongside the possibility of pied-piping a larger constituent containing that DP enables one to account for the attested, stable synchronic variation in OE.\footnote{They furthermore argue that the approach described above also affords a principled account of the word-order changes that took place in ME. The basic idea is that the grammar changed from one which allowed both the VP/vP-pied-piping option and the “stranding” (i.e. DP-movement) option for satisfaction of v and T’s EPPD features to one which allowed only the latter mode of satisfaction. B&R propose that this change first occurred at the v-level, in the 12\textsuperscript{th} or early 13\textsuperscript{th} century (see Canale 1978, van Kemenade 1987 and Lightfoot 1991 in this connection). The loss of VP-pied-piping involved a reanalysis of simple OV orders whereby remnant-VP fronting was reanalysed as object-movement. This can be illustrated with the following example:}

\begin{align*}
(13) & \quad \textit{The man the apple ate} \\
& \quad \textit{The man} \quad \textit{the apple} \quad \textit{ate} \\
& \quad \text{a. } [_{vP} \text{S} \quad [_{vP} (V) \quad \text{Obj} \quad \text{[}_{v} \text{V} \quad v \quad ] \quad (\text{VP}) \quad ]] \\
& \quad \text{b. } [_{vP} \text{S} \quad \text{Obj} \quad \text{[}_{v} \text{V} \quad v \quad ] \quad [_{vP} (V) \quad (O)) \quad ]] \\
\end{align*}

\footnote{\text{9} Christer Platzack (p.c.) raises the question of pied-piping options at the C-level. In particular, he asks why it is not possible to pied-pipe vP containing a wh-DP. This would give rise to strings of the following type:}

\begin{enumerate}
\item[(i)] *[_{vP} \text{ who } [_{vP} \text{ see } ] \text{ did John } (vP) ?]
\end{enumerate}

We have no general way of ruling out this option. We therefore do not exclude that it is made available by UG, and is simply not a parametric option taken Germanic. Derivations of this kind might be found in VOS or OVS languages (see Massam & Smallwood 1997 on VOS languages). Strings like (i) are marginally possible in German under highly restricted discourse conditions involving strong emphasis, e.g.:

\begin{enumerate}
\item[(ii)] [ WEN gesehen ] hat er ? ( = (i))
\end{enumerate}

who seen has he

``WHO did he see?!”

A further condition on this construction is that the fronted constituent must contain the lexical verb:

\begin{enumerate}
\item[(ii)] *[ WEM das Buch ] gab er ?
\end{enumerate}

who-Dat the book gave he?

We will not speculate further regarding this construction.
B&R suggest that the cause of this reanalysis was a decrease in unambiguous evidence for pied-piping. A grammar allowing both pied-piping and stranding generates a larger language than one which only allows one of the two options, and is therefore less highly-valued if one assumes the Subset Principle. In terms of this principle, originally put forward in Berwick (1985), “the learner selects the grammar that generates the smallest possible language that is compatible with the data” (Manzini & Wexler 1987: 425). In the OE context, the Subset Principle required the OE system, with its optionality of pied-piping vs. stranding, to be robustly triggered by examples of the sort illustrated in (12) above. Arguably, in Early ME, the pied-piping option was, however, less robustly triggered than before. To see this, it is important to realise that the basic difference between the conservative ((a)) and the innovative ((b)) structures in (13) is that the innovative structure allows only the object to feature in preverbal position, with any remaining VP-internal material following the verb, whereas the conservative grammar allows all VP-internal material to surface preverbally (although it need not do so). Given that finite clausal complements always appeared postverbally, the principal constructions where one can distinguish the two systems are verb-particle constructions and double-object constructions (we will discuss non-finite complements in Section 4 below).

Verb-particle constructions with the order object – particle - V must be analysed as involving a pied-piping grammar, as the particle is fronted along with the object in the remnant VP (since Koster 1975 it has been assumed that the particle is merged in a VP-internal position in West Germanic). So this order would have triggered the pied-piping grammar, and is clearly found in OE (cf. Pintzuk 1991: 76f., Fischer et al. 2000: 185f.). However, it has often been remarked that verb-particle constructions become vanishingly rare in the 12th and 13th centuries (Spasov, 1966, cited in Kroch & Taylor, 2000: 146); it is possible that this was due to the influx of French borrowings at this period, replacing earlier verb-particle constructions with simple verbs. Thus this important trigger for the pied-piping grammar may have been removed, or at least rendered less robust than formerly, owing to an entirely extraneous lexical factor.

A second extraneous factor may have been at work in the case of ditransitive constructions. In these constructions, the order direct object – indirect object – V would have triggered the pied-piping grammar. Again, this order is attested in OE (cf. van Kemenade 1987, Koopman 1990, 1994, Allen 1995, Koopman & van der Wurff 2000). However, during early ME, the distinction between accusative and dative case was lost; Allen (1995:158f.) shows in detail that the system had broken down in all the ME dialects except Kentish by the end of the 13th century at the latest (see her Table 10.1, p. 441). One consequence of this was a rise in prepositional datives. The use of a PP to express indirect objects gives rise to greater positional freedom for these arguments, and consequently a greater instance of “leaking”, and a...

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10 The Subset Principle arguably follows from the fact that language acquirers do not have access to negative evidence and therefore cannot retreat from a “superset trap” if they postulate a grammar which generates a language larger than that determined by the data.

11 This is, of course, also the pattern exhibited by Modern Dutch and German and West Germanic generally. Assuming υ’s EPP-feature in these languages to specifically require movement of a D-bearing Goal, we can account for the consistently postverbal position of non-restructuring clausal complements by appealing to the fact that any D-features contained in complements of this type would no longer be accessible to υ’s D-Probe at the point at which this head is merged (cf. the workings of the Phase Impenetrability Condition/PIC discussed below).
correspondingly less frequent instantiation of the order triggering the conservative, pied-piping grammar.

We propose, then, that the two factors just described would have undermined the trigger experience for the grammar with the pied-piping option. As a result, the word order changed in the way we observe. The word-order changes are thus the consequence of a reanalysis of the ever more liberal ‘stranding’-permitting pied-piping grammar as one which specifically targets DPs.

It is important to note that the reanalysis in (13) did not eliminate OV order, but that it simply changed the structure of OV sentences. Subsequently, starting from around 1400, object-movement of the type shown in (13b) became restricted to negative and quantified objects (van der Wurff 1997, 1999). This restriction of v’s D-attracting property (arguably to [+Op] DPs) led to an overall increase in the number of VO orders in the PLD. As a result, many instances of vP-movement of the type shown in (8iv) above were in fact indistinguishable from simple DP-movement of the subject of the type seen in (10). This led to the reanalysis in (14). We again illustrate the reanalysis with a simple example:

(14) The man ate an apple

a. \[ TP [vP Subj \quad [v, V v ] [vP (V) Obj ]] \quad T (vP) ] \quad \text{ (conservative)} \]

b. \[ TP Subj \quad T [vP (Subj) \quad [v, V v ] [vP (V) Obj ]]] \quad \text{ (innovative)} \]

Whilst (14) illustrates the basic point that the reanalysis does not affect the surface word order in a simple SVO example of this type, it is, as given, not quite correct. Assuming that auxiliaries surface in T (see Note 4), then (14a) predicts that the conservative grammar allowed the unattested SVOAux order. To solve this problem, B&R appeal to the fact that VP and everything it contains is inaccessible to syntactic operations once the derivation has proceeded past vP (this follows from the version of the Phase Impenetrability Condition (PIC) in Chomsky (2000)). As a consequence of this, the VP-internal object cannot surface in the position in the linear order indicated in (14a), but instead appears in the pre-vP-movement position following the surface position of the auxiliary in T. Thus, thanks to the PIC, the unattested SVOAux order cannot arise. The correct representation for (14a) is therefore (14a’), where the constituents indicated in outline have already been transferred to the interfaces and are therefore unavailable for syntactic operations:

(14a’) \[ TP [vP Subj \quad [v, V v ] \quad T \quad (vP \quad [vP (V) Obj ])] \]

(14) illustrates a simplification parallel to that in (13). In (14a’), vP is pied-piped to SpecTP in order to satisfy T’s EPPD feature. In (14b), the subject alone raises to satisfy the same feature. We are thus once again dealing with pied-piping as opposed to “stranding”. The important point here is that, in the absence of clause-internal adverbial modification and auxiliaries (on which, see below), both structures give rise to the same linear order (SVO). The consequence of this is that there is, in cases of this kind, no unambiguous trigger for the more complex pied-piping operation. Moreover, as in the case of (13), the Subset Principle disfavours the grammar with the pied-piping option, since this generates a bigger language than one without it. Pied-
piping must therefore be robustly triggered, and B&R suggest that by the 15th century, it was not.

Biclausal structures initially provided an environment in which the conservative structure in (14a’) and the innovative structure in (14b) gave rise to different orders. These were thus important triggers for the conservative grammar. (14a’) gives rise to surface SVAuxO and (14b) gives rise to SAuxVO (recall that we are using the cover “Aux” for restructuring verbs; see Note 4). Let us look at how the conservative grammar operated in biclausal cases as this will also help us to see how the restriction on object-movement described above created the circumstances for the loss of the pied-piping option in such biclausal environments, a development which also had important consequences for monoclausal structures.

As first pointed out in van Kemenade (1987: 55f.), modal, causative and perception verbs were V(P)R (i.e. restructuring) triggers in OE, a state of affairs that entailed that the infinitival Vs selected by these verbs followed their selectors, as illustrated in (15):

\[
\begin{align*}
(15) & \quad \text{a.} & \quad \ldots pe \ aefre on gefeohte his handa \ wolde afylan \\
& \quad & \quad \text{who ever in battle his hands would defile}
\end{align*}
\]

“... whoever would defile his hands in battle”

(Ælfric’s Lives of Saints 25.858; Pintzuk 1991: 102, 62)

\[
\begin{align*}
(15) & \quad \text{b.} & \quad \ldots \ hæt hi \ mihton swa bealdlice Godes geleafan bodian \\
& \quad & \quad \text{that they could so boldly God’s faith preach}
\end{align*}
\]

“that they could preach God’s faith so boldly”

(ÆCHom I, 16.232.23; Fischer et al 2000: 156)

(15a), with the order OAuxV, is known as the “verb raising” (VR) order; (15b), with AuxOV, is one case of “verb-projection raising” (we saw the case with an aspectual auxiliary like habban above – see (11) and (12b,c)). Following B&R, we assume the structure in (16) for the complements of restructuring verbs (V_R) in OE and Early ME; we consider a VR structure of the kind illustrated in (15a) by way of illustration.\(^\text{12}\)

---

\(^\text{12}\) Here we indicate the subject of the infinitive as PRO. We do this largely for convenience, remaining on the one hand agnostic regarding the correct analysis of control (see Hornstein (1999), Manzini & Roussou (2000)), and on other hand not wishing to imply that restructuring predicates are never raising predicates.
where the vP labelled vP₁ for expository convenience has the following internal structure (bracketed elements are those which have undergone movement out of vP₁):

We are assuming that the complement of a restructuring verb is a TP (cf. i.a. Wurmbrand 2001 and Lee-Schoenfeld 2005 for arguments in favour of the idea that restructuring complements are “smaller” than other clausal complements, and Roberts (1997: 412) for arguments that such complements are larger than VP in OE). In the context of the theoretical framework we are assuming here, the specific assumption is that restructuring complements are TPs headed by a “defective” T, i.e. one that is not selected by C (cf. B&R 14f.). For our present purposes, this idea has the important consequence that the material in the restructuring complement is not sent to Spellout prior to merger of V_R, the way material in the clausal complements of non-restructuring verbs is (owing to the PIC; cf. the discussion of the object in (14a’) above). This accounts for the “clause union” effects commonly associated with restructuring structures. Let us see how our analysis of V(P)R works in more detail.

The derivation of the VR order in (15a) proceeds by the following steps. First, as we saw in (8i), V moves to v inside the vP of the embedded clause. Second, as in (8ii), the remnant VP moves to Spec vP. Third, V+v moves to T in the infinitival clause. This
operation is the key to deriving the Aux-V order here; Biberauer & Roberts (2005b) take this infinitive-movement to be triggered by a selectional property of the main-clause verb \( V_R \). They assume the selectional property to be the nature of the (defective) TP that \( V_R \) selects. The next step in the derivation of a VR structure is remnant \( \nu P \) movement to the specifier of the selected T (this is another instance of “pied-piping” satisfying an EPP-feature). Finally, the remnant \( \nu P \) is raised to the specifier of the matrix \( \nu P \). This gives the surface order \( SOAuxV \) (where “Aux” means a restructuring verb, \( V_R \) in (16)).

The loss of generalised object movement described above had the effect in the V(P)R context that \( \nu P \)-movement to the lower SpecTP would not be distinguishable in terms of the surface string from just subject movement. To see how this works, consider the structure in (17), which illustrates \( \nu P \)-movement to Spec-TP in a structure where the object has not undergone raising:

\[
\text{(17)}
\]

\[
\begin{array}{c}
\text{Already sent to Spellout:} \\
\end{array}
\]

As in the case of the direct object in (14a’), the VP indicated in outline here is merged as the complement of the lower \( \nu \), and thanks to the operation of the PIC, this material is sent to Spellout and therefore becomes inaccessible for further operations as soon as the lower \( \nu P \) is completed. Hence, movement of this \( \nu P \) to SpecTP has no effect on the surface position of the object, which remains final. We thus straightforwardly derive optional VO orders in the complements of \( V_R \) in both OE and ME\(^{13}\). Moreover,

\[^{13}\] In addition to the VO orders which result from the effects of the PIC as described above, VAuxO was also available in OE in structures such as that illustrated in (i):

(i) "... that any man can relate all the misery"

\((Orosius 52.6 – 7; Pintzuk, 2002: 283, 16b)\)
in (17) the choice between pied-piping vP into the matrix Spec-vP and exclusively raising the subject to that position, which was operative throughout ME, has absolutely no effect on the surface order of elements, since the only overt material in vP which the PIC would allow to be spelled out in its moved position is the subject, which, in this case, an element which cannot be assigned phonological form which we have indicated as PR (see Note 12). As in the case of (14) above, we therefore once again see the relationship between the two changes: when the object is spelled out in postverbal position, crucial evidence in favour of the pied-piping option at the T-level is obscured. Thus the loss of generalised object movement had the consequence that the trigger experience began to feature many more structures for which it was impossible to distinguish subject-raising from vP-raising on the basis of the surface string.

Because of the PIC then, acquirers had no evidence to distinguish a derivation involving pied-piping of vP to satisfy T’s EPPD feature from one in which only the subject moves to satisfy that feature. It is of course possible that the presence of vP-adverbials or other modifiers might disambiguate the two derivations, but in the vast majority of cases the ambiguity would have been present. We take it that this situation led to the reanalysis of (17) as (18):

This order does not involve V(P)R, despite the fact that the matrix verb is one of the “restructuring” triggers discussed above: the non-finite verb atellan precedes the modal that it would follow in restructuring contexts. In order to allow for the possibility of VO orders in subordinate clauses in OE, B&R propose that v in OE was, with the exception of one class of object DPs (see below), only optionally associated with an EPP-feature, but that the presence of this optional EPP-feature systematically guaranteed an interpretive effect that was absent in structures where v lacked it (see Chomsky (2001: 34, 2004: 112)). Assuming leftward movement in Germanic to be a “defocusing” operation (cf. Pintzuk & Kroch 1989 on the obligatorily focus-bearing nature of the postverbal material in Beowulf), B&R propose that OE v’s optional EPP-feature triggered defocusing movement wherever it was present; wherever it was absent, unmoved material could therefore remain in focus. This implies that negative and quantified/indefinite objects, which appear to have rather consistently surfaced preverbally during OE (and also in ME), were leftward-moved for different reasons (see also Kroch & Taylor 2000, Pintzuk 2002: 294ff). B&R propose that the negative/quantified object movement was triggered by an obligatory EPP-feature specifically associated with a [+Op] D-seeking Probe. OE object movement thus results from two different types of EPP-feature-driven movement, one involving an obligatory EPP-feature, and the other involving an optional EPP-feature which triggers defocusing. See Reinhart (1995) for an account of object-scrambling and defocusing in Dutch.

Note that the raising of the lower copy of v in the vP-fronting (pied-piping) case vs the non-raising of this copy wherever the DP-fronting (“stranding”) option is employed does not have any effect on surface order either. See Biberauer & Roberts (2005b, Note 6) for discussion of a PIC-based spellout mechanism that “distinguishes” higher vs lower copies, privileging only the former with full spellout (i.e. phonological realisation). Regardless of the correctness of this proposal, it is clear that any account employing remnant movement where the remnant is ultimately only partially spelled out (e.g. den Besten & Wezelhuth’s 1987 analysis of German VP-fronting) must offer some explanation as to how copies contained in a remnant that eventually surfaces above “higher” copies are disqualified from phonological realisation. We leave this matter for further research, the crucial point here being that the copy of the infinitival verb adjoined to v is not available for spellout, with the consequence that it cannot signal the difference between vP- and DP-raising to SpecTP.
As the structure in (18) shows, the fronted vP in infinitival contexts may have contained no overt material at all: an empty subject (here indicated as PRO) and the trace/copy of v (see Note 14). Recall that VP has already been sent to Spell Out, and hence is not realised in the moved position. Given the lack of evidence for vP-movement, the simpler option of DP-movement was preferred (assuming that language acquirers always take the simplest option consistent with the trigger experience, where simplicity is taken to mean the smallest structure consistent with the input – see Clark & Roberts 1993); vP-movement was therefore lost as a means of satisfying T’s EPPD feature. This concludes our account of the loss of vP-pied-piping.

We now consider the empirical consequences of this loss. The reanalysis of vP-movement as subject-movement had two major consequences, both deriving from the fact that T’s EPPD feature, in the innovative grammar, could only be satisfied by a DP in SpecTP. The two consequences were that (i) expletive insertion became obligatory where no appropriate, raisable subject was available, and (ii) that movement of DP into SpecTP became obligatory in passives and unaccusatives. B&R illustrate both of these consequences in detail. They further show that both expletives and subject-raising were options prior to the 15th century, owing to the fact that DP-raising to SpecTP was, in the conservative grammar, an available means of satisfying T’s EPPD feature. After the change in (14), however, this was the only way of satisfying T’s feature, and so expletive insertion and DP-raising became obligatory. B&R therefore provide a natural account for both the extended period of variation during which expletives and subject-raising were simply optional and for the fact that the change that ultimately took place went in the direction that it did: optionality is to be expected while the grammar has at its disposal two modes of EPP-satisfaction, but once the trigger experience for one of these modes has become insufficiently robust, language acquirers will opt for a simpler grammar which retains only the robustly attested mode. As we have shown above, the changes that occurred in early ME conspired to
create a scenario in which vP-raising became indistinguishable from DP-raising in a majority of contexts, with the consequence that the former mode of EPP-satisfaction was lost.

A further consequence of the loss of vP-raising was the loss of the orders usually referred to as Stylistic Fronting (Styl-F; see Biberauer & Roberts (2005b)). Kroch & Taylor (2000) argue that ME had this operation, which functioned along lines similar to those typically claimed for Modern Icelandic (see Maling (1990), Holmberg (2000)). The two principal properties of Styl-F are that there must be a subject-gap and that it is subject to an Accessibility Hierarchy which states that negation takes precedence over adverbs which in turn take precedence over participles and other verbal elements. (19) is an example of putative Styl-F in ME:

\[
\begin{align*}
\text{(19)} & & \ldots \textit{wiþþ all þatt lac} & \textit{patt offredd wass biforenn Cristess come} \\
& & \text{with all that sacrifice that offered was before Christ's coming} \\
& & \text{“... with all the sacrifice that was made before Christ's coming”} \\
& & (\textit{Ormulum} I.55.525; \text{Trips 2002: 306, 123})
\end{align*}
\]

(19) contains a passivised relative, with the passive participle \textit{offredd} (“offered”) representing the fronted element. Biberauer & Roberts (2005b) propose that cases of Styl-F observed in ME, and V-Aux ordering more generally, involve vP-movement to SpecTP. In their terms, the TP inside the relative clause in an example like (19) has the structure given in (20):

\[
\begin{align*}
\text{(20)} & & [\text{TP} \{ [\text{vP} (\text{Op}) \textit{offredd}] \} [\text{T} \{ \text{T} \textit{wass} \} ([\text{vP} (\text{Op offredd})] \textit{Op biforenn} \textit{Cristess come} \})]]
\end{align*}
\]

The most important aspect of this structure for the purposes of this paper is that vP, containing the string \{Op offredd\}, has raised from its first-merged position following \{T wass\} to SpecTP. This operation takes place in order to satisfy T’s EPPD-feature. In the case under consideration, the D-feature is borne by the passive participle \textit{offredd}, which B&R, following Baker, Johnson & Roberts (1989), assume to contain the “absorbed” logical subject (cf. also Richards & Biberauer 2005).

---

15 In (20), the object is extracted under relativisation, which we have indicated by (Op); the leftmost occurrence of this symbol marks its successive-cyclic movement through SpecvP (note, however, that nothing here hinges on the assumption of a null-operator rather than a raising analysis of relatives).

16 B&R’s analysis also facilitates a very simple analysis of V-Aux structures that are very evidently not amenable to a Styl-F analysis, but which are nevertheless attested in ME. Consider (i) in this connection:

\[
\begin{align*}
\text{(i)} & & \textit{er þanne þe heuene oðer eorde shapen were} \\
& & \text{before that heaven or earth created were} \\
& & \text{“before heaven or earth were created”} \\
& & (\textit{Trinity Homilies}, 133.1776; \text{Kroch & Taylor 2000: 137})
\end{align*}
\]
Biberauer & Roberts’ (2005b) analysis also affords a simple explanation of the loss of “Styl-F”. For them, it is simply a case of the loss of vP-fronting, i.e. the loss of the pied-piping option for satisfaction of T’s EPPD feature.

In this section, we have summarised B&R’s account of the word-order changes in ME. We have left out a number of details, but the essential points are as given here: the idea that OE had the option of “stranding” or pied-piping VP- and vP-internal material at both the v and T level for EPPD satisfaction, and the idea that the pied-piping option was lost in two stages in ME: first in the 12th or early 13th century at the v level, and in the 15th century at the T level. There was additionally also a further change around 1400 restricting object-movement to negative and quantified objects. The OE grammar had two options at both levels; independent morphological and lexical factors undermined the evidence for one of these options, in such a way that, thanks to the Subset Principle, one of the options was lost. As we have seen, this in fact took place initially at the v-level, and the change at this level, combined with the restriction on object-movement, led to the change at the T-level. The first change was in accordance with the Inertia Principle, since it was caused by independent lexical and morphological factors. The change at the T-level was an example of a syntactic change caused by the net effects of two earlier syntactic changes. This thus provides an initial example of the “cascade” effect which we discussed in the Introduction.

4. The loss of V2 and the rise of the auxiliary system

Let us turn now to the loss of V2 in the 15th century. We can date this change to approximately 1450 (cf. van Kemenade (1987: 219f.), Fischer et al (2000: 133f.)). Starting with van Kemenade (ibid.), it has often been suggested that V2 was lost through “decliticisation”. This idea is related to a well-known OE phenomenon: the existence of a systematic class of apparent exceptions to V2 where a pronominal clitic was able to intervene between the initial constituent and the verb:

(21) a. *horia untrymnesse he sceal rowian on his heortan.*
their weakness he shall atone in his heart
(CP 60.17; Pintzuk (1999:136))

b. *þin agen geleafa þe hæff gehæledne*
thy own faith thee has healed
(BlHom 15.24-25)

Although there are many different analyses of this phenomenon (cf. i.a. van Kemenade 1987, Platzack 1995, Roberts 1996, Kroch & Taylor 1997, Fuss 1998, Fuss & Trips 2002, Haeberli 1999/2002, there is general agreement that the clitics do not “count” for the computation of V2. In terms of Chomsky’s (2005) idea that only phase heads can trigger movement, we could postulate that C is the host of the clitic.

For B&R, (i) involves pied-piping of a vP containing *heuene oðer eorde shapen*, and as such is quite straightforward, whereas in terms of a Styl-F analysis the VAux order is problematic since there is no subject gap.
in these cases (and cliticisation is to the left of the host, see Kayne 1994). The core of the decliticisation idea is that, given the string \( XP - SCL - V \), where “SCL” stands for “subject clitic”, if the SCL ceases to be a clitic, then this string is incompatible with V2. Van Kemenade (1987: 204ff.) proposes that precisely this decliticisation caused the loss of V2 in English.

A consequence of the change in T’s mode of satisfying its EPP\(_D\) feature discussed in the previous section is that a DP must appear in SpecTP from 1450 onwards, exactly the time of the loss of V2 (cf. van Kemenade’s 1997: 350 observation that “[t]he loss of V2 and the loss of expletive pro-drop [i.e. the development of a requirement for SpecTP always to be filled with a DP – MTB/IGR] .. coincide historically”). We propose the following reanalysis of sequences like those in (21) at this time (see below on the status of the SCL in (22b)):

(22) a. \[ CP \ [XP [C SCL - [C [v V v] C]] [TP [vP (SCL) ([v V v]) ] T vP ] ] \]

b. \[ CP \ [XP C [TP SCL [T [v V v]] vP ] ] \]

In (22a), T takes the pied-piping option for satisfaction of its EPP\(_D\) feature, so vP moves to SpecTP. SCL cliticises to C, an operation which for present purposes we take to involve head-adjunction to the left of C. In (22b), SCL moves to SpecTP to satisfy this feature, as required in the innovative system. The reanalysis is forced by the loss of the pied-piping option. Furthermore, assuming that true clitics can only move to phase heads as we just mentioned, “SCL” in (22b) cannot be a true subject clitic, but must instead be a full subject pronoun. Hence decliticisation follows from the reanalysis in (22).

This analysis also accounts for the observed gradualness of the loss of V2 (cf. “the loss of V2 is not an abrupt change, but a rather gradual one” (Haeberli 1999: 406). Since the conservative grammar allowed the option of DP-movement to SpecTP before the reanalysis took place, the structure in (22b) was already an option before the reanalysis took place, and so a gradual decline in V2, starting before 1450, is expected. In fact, V2 would have been strictly speaking optional throughout OE and ME (see Haeberli 2003 for discussion of this, and some evidence that this was indeed the case).

The reanalysis in (22) was presumably also favoured by the fact that many V2 orders were in any case subject initial, and such orders were prone to be reanalysed as TPs with V-to-T movement (see Kroch & Taylor 1997, Fischer et al 2000; see also Adams 1987 and Roberts 1993 on Old French, and Willis 1998 on Middle Welsh).

An important consequence of the loss of V2 due to the reanalysis in (22) was that V-to-T movement became a general feature of finite clauses. The same is true in the

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17 This idea might form the basis of a general account of second-position clitics, a point that we will not develop further here.

18 We are assuming that prior to this period English did not have general V-to-T movement independently of V2. In the context of a general “Kaynian” approach to phrase structure, which requires that heads precede their complements, the option of assuming string-vacuous V-to-T
history of both French and Welsh (cf. the references given in the previous paragraph). Biberauer & Roberts (2005c) propose that, in the case of English, this led to a marked option. The reason for this has to do with tense-marking in English. Briefly, Biberauer & Roberts (2005c) propose that the trigger for V-to-T movement is not rich agreement morphology (as was proposed by Roberts (1985, 1993), Rohrbacher (1994, 1999), Vikner (1997) and others), but rather rich tense morphology.

More concretely, they propose that T has an unvalued V-feature, while V has an unvalued T-feature. T and V thus enter an Agree relation in terms of which T’s V-feature probes its interpretable counterpart on V, with the latter’s T-feature being valued in the process (cf. the discussion of Probe-Goal relations in Section 2 above). In English, the reflex of this Agree relation is V’s tense morphology, i.e. “Affix Hopping” in the sense of Chomsky (1957) and much subsequent work is simply valuation of V’s T-features via Agree. The same is true in non-V2 environments in the other Germanic languages (except Icelandic). In Romance, the Agree relation is associated with an EPP-feature on T which triggers V-movement. Most importantly in the present context, Biberauer & Roberts (2005c) suggest that the difference between Germanic and Romance is correlated with the richer system of tense marking in Romance: French and Italian have 5-7 synthetic tenses (depending on register), while Spanish and Portuguese have more. Germanic on the other hand, has at most 4 such tenses, with English and MSc effectively restricted to 2.

Biberauer & Roberts (2005c) propose that a Romance-style V/T-Agree system cannot be supported in a feebly tense-inflected language like Late ME (unlike Middle French or Middle Welsh, see above). The argument is therefore that the V-to-T movement grammar which resulted from the loss of V2 around 1450 was inherently unstable since a crucial morphological trigger for it – “rich” tense morphology of the Romance kind – was missing. This, it is argued, contributed to the reanalysis of modals and do as auxiliaries in the early 16th century and the subsequent loss of V-to-T movement later in the 16th century. Let us consider in a little more detail how this reanalysis happened.

Movement in a head-final system is not available. At most, in OE and Early ME (and Dutch and German; see Zwart 1997), V moves to a rather low functional position, if it moves at all (see also Roberts 1997: 415). Examples of the order Subject – Verb – Adverb – Object in contexts unfavourable to V2 are found in ME at least, e.g. (i) from Kroch & Taylor (1997:218):

(i) *þe harnis þat ere yunge þat vnderstandis noht what paine fallis til cursing*  
the children that are young that understand not what punishment cursing brings  
“the children who are young who do not understand what punishment cursing brings”  
(Benet 23.101)

Here we see the order *vnderstandis noht* which, according to standard diagnostics (see Pollock (1989)), indicates V-movement out of VP. Since the context is a relative clause, we adopt the standard assumption that V-to-C movement is not available; so this example cannot be V2. Kroch & Taylor conclude on this basis that this is evidence of V-to-T in ME. In our terms, however, we can treat *vnderstandis* as instantiating the remnant vP fronted to SpecTP in the lower clause (note that there is an apparent “subject gap” here; see the analysis of Stylistic Fronting in Biberauer & Roberts (2005b)). The object DP (what paine ..) is transferred to Spell Out on the lower phase, as described in the previous section. Given the possibility of this kind of analysis of cases like (i), we are able to maintain that there was no V-to-T movement in English, independent of V2, prior to the 15th century.

Note further that orders of this kind, in a system which lacks V-to-T movement, constitute a further kind of evidence for vP-movement (cf. the discussion in the previous section).
Recall that the modals were a subclass of the members of $V_R$. Consider again the structure of a sequence containing a modal with an infinitival complement after the reanalysis of (17) as (18). Following Roberts (1993: 262) and Roberts & Roussou (2003: 41-42), we take it that the loss of infinitival inflection, which had taken place by 1500, removed the trigger for V-to-T movement in the complement to $V_R$ (the assumption is therefore that the infinitival inflection specifically instantiated features on $V$ that not only entered in an Agree relationship with $T$, but also had to undergo movement under the influence of an associated EPP-feature). In this way, the evidence for the lower functional T-v system was removed from the trigger experience of acquirers. Hence (18) was reanalysed in the early 16th century as monoclausal, with modals being merged in $v$ or $T$ and the lexical verb remaining in $V$ – cf. (23):

(23)

This change, again, was rather clearly a simplification, a significant one in the context of the system at the time: as pointed out by Roberts (1985, 1993, 1999) and Warner (1997), the reanalysis which resulted in (23) in turn contributed to the conditions for the loss of (finite) V-to-T movement later in ENE by creating a system in which, firstly the modals, and, thereafter, increasingly other auxiliaries were always available to lexicalise $T$.

Very importantly, $do$ underwent the same reanalysis as the modals at about the same time (see Denison 1985, Roberts 1993: 292f.). But the system that resulted was not the NE one of obligatory $do$-support in certain environments, with $do$ ungrammatical everywhere else. Instead, $do$ was always optional, including in positive declaratives. The 16th century was thus the period of what Jespersen (1909-49) called “exuberant” $do$, exemplified in (24) where $do$’s non-empatic nature is evident from the fact that it surfaces in an unstressed metrical slot:

(24)  Thus cónscience does make cówards of us áll  
(Shakespeare: Hamlet, I. i. 83; Roberts 1993: 293)

The option of “exuberant” $do$ in all contexts meant that any verb and any tense could be associated with an auxiliary. In other words, the trigger for V-to-T raising was obscured by the development of the auxiliaries, particularly $do$ (Roberts 1999: 293).

Kroch (1989) shows that, although there was variation throughout the ENE period, as Warner (1997: 382-383) observes, the period 1575 – 1600 seems to be the crucial one
as far as the loss of V-to-T movement is concerned. The reanalysis that took place at this time was of the following kind:

(25)  
(a) \[TP \text{John } [ \underbrace{\text{T walk-eth } \ldots}_{\text{VP}} ] \ldots [\underbrace{\text{v} \ldots}_{\text{TP}} ]\]
(b) \[TP \text{John T } \ldots [\underbrace{\text{VP } \ldots}_{\text{TP}} [\underbrace{\text{v walks }}_{\text{VP}}]]\]

By now, the verb-auxiliary system is rather similar to that of Modern English, with the exception of the absence of do-support. Do could still be freely inserted in positive declarative clauses, as just noted; conversely, clausal negation could appear without do, giving rise to auxiliary-less examples with the order not – V (since V-to-T has been lost):

(26)  
(a) \text{Or if there were, it not belongs to you}  
\text{(1600: Shakespeare \textit{2 Henry IV}, IV, i, 98; Battistella & Lobeck 1988: 33)}

(b) \text{Safe on this ground we not fear today to tempt your laughter by our rustic play}  
\text{(1637: Jonson \textit{Sad Shepherd}, Prologue 37; Kroch 1989)}

The development of do-support was preceded by the development of forms featuring contracted negation, which took place around 1600, as the following remark by Jespersen (1909-49, V: 429), cited in Roberts (1993: 305), suggests:

The contracted forms seem to have come into use in speech, though not yet in writing, about the year 1600. In a few instances (extremely few) they may be inferred from the metre in Sh[akespeare], though the full form is written.

Around 1600, then, negation contracted onto T, but since V-to-T movement of main verbs had been lost, only auxiliaries were able to be negative. This gave rise to a new system of clausal negation in which negative auxiliaries were used as the basic marker of clausal negation (it is clear from a range of languages, including those belonging to the Uralic family, Korean, Latin, Afrikaans, and others, that negative auxiliaries are a lexical option elected by a wide range of languages).\(^\text{19}\) The new class of auxiliaries included negative modals like \textit{won’t}, \textit{can’t}, \textit{shan’t}, etc., but also the non-modal negator

\(^\text{19}\) Biberauer & Roberts (2005c) take it that the negative auxiliaries with \textit{‘t} represent the unmarked post-17\textsuperscript{th}-century form. They note that many instances of non-contracted \textit{not} involve constituent, not clausal, negation. This is clearly true whenever \textit{not} is non-adjacent to the auxiliary, as in (i):

(i)  
(a) \text{John has always not smoked}  
(b) \text{The kids have all not done their homework}

It should, however, be noted that clausal scope is possible if \textit{not} (i.e. the full form) is adjacent to the auxiliary; thus:

(ii) \text{John must/does not smoke}

In this connection, Biberauer & Roberts suggest that there is a “negative-concord”-style Agree relation between [+neg] T and \textit{not} (cf. the fact that the presence of the [+neg] feature on T triggers do-support in NE – see below).
don’t/doesn’t/didn’t. Zwicky & Pullum (1983) argue convincingly that the negative auxiliaries must in fact be distinct items in the lexicon: negative n’t must be treated as an inflectional suffix, rather than a clitic, because inflections, but not clitics, trigger stem allomorphy, and n’t clearly triggers such allomorphy (see also Spencer 1991: 381f; Williams 1994: 168). Biberauer & Roberts (2005c) follow this analysis and therefore conclude that negative auxiliaries became part of the English lexicon during the early part of the 17th century. In other words, they propose that the available stock of “T-elements” (i.e. elements lexicalising specifically T-related features) was further increased during the early 17th century by the establishment of negative auxiliaries, and that this lexical factor compounded the morphologically determined system-internal pressure against maintaining a grammar in which lexical content-bearing “main” verbs could undergo raising to T, leading to its rapid demise.

Once the negative auxiliaries, including doesn’t, don’t, didn’t, are established as the unmarked expression of clausal negation (probably by the middle of the 17th century; cf. Roberts 1993: 308), the modern system of do-support comes into being. We assume that do-support became obligatory in questions where no other auxiliary is present as a consequence of the loss of V-to-T movement, making V-movement to C impossible, the existence of a dummy auxiliary and the continued lexicalisation requirement associated with a [+Q] C.20 In this system, merger of do in T depends either on the presence of an “extra” feature on T, in addition to Tense-, V- and D-features (i.e. the interrogative feature Q or the negation feature Neg) or on the presence of a discourse effect, in contexts of emphasis and VP-fronting, as in:

(27) a. John DOES (so/too) smoke
   b. He said he would smoke Gauloises and [ smoke Gauloises ] he
   WOULD/DID/*he’d --

The discourse effect is once again required by Chomsky’s (2001: 34) proposal that “optional operations [here: spellout of the features located in T – MTB/IGR] can apply only if they have an effect on outcome”. We could unite the two cases (Neg/Q-related do-support and discourse effect-related do-support) if we say that the auxiliaries are lexically associated with Neg- and Q-features (the former case giving rise to forms inflected with n’t; the latter not having any overt morphological reflex in English; but cf. Hunzib, Tunica, Gimira and other languages featuring interrogative verbal morphology discussed by Dryer 2005), and that their merger into the structure will thereby guarantee a discourse effect.

If we slightly modify the reanalysis which gave rise to auxiliaries shown in (23) so that the modals and do were merged in v and raised to T in the new structure (which was nevertheless monoclausal, in that the complement to matrix T had lost its T-layer),21 then we could maintain that, although V(-to-v)-to-T was lost by the end of

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20 Christer Platzack (p.c.) points out that the impossibility of do-support in subject wh-questions (Who left? vs. *Who did leave?) is not explained by this account. This is true; we believe that the impossibility of do-support in this context is a variety of complementiser-trace effect, as suggested by Koopman (1984). We have no account to offer of this phenomenon here, but see Biberauer (2005).

21 This might necessitate postulating an “extra” v-layer to host V-to-v movement. However, pace the proposals in Marantz (1997) and Chomsky (2001, 2004) mentioned in Section 3 in this connection, we might think that NE verbs are in fact category-neutral roots; note that, unlike in all the other (continental) Germanic languages, NE verbs are able to appear in an uninflected form in a very wide range of environments: all persons of the present tense except 3sg, the “subjunctive”, the infinitive and
the 16th century, v-to-T remained. In that case, we could think of the development of do-support in the 17th-century as a shift from the earlier obligatory v-to-T movement (first fed by V-to-v movement, and as such moving a main verb to T, but later only moving an auxiliary merged in v) to optional v-to-T movement creating a discourse effect. The difference between the two systems concerns the status of phonologically empty v, which in the earlier grammar, until the 17th century, moved to T (i.e. in examples like (26)). In the later grammar, only v containing an auxiliary moved to T. Again, this is a natural simplification of the grammar, given that movement of empty v to T could never be directly observed in the PLD (cf. a parallel case in the nominal domain discussed in Section 4 above: following the loss of generalised object movement, both vP- and DP-raising in the infinitival TP-domain associated with V(P)R structures during the OE and ME periods resulted in the movement exclusively of empty categories (PRO and a lower copy of v in the former case; see Note 14, and PRO alone in the latter). As indicated in this section, this also led to structural simplification in that the original biclausal structure (18) became monoclausal (23)). This simplification was the final development in the establishment of the present-day English verbal system.

To summarise, then: what we have seen in this section is how a series of natural changes affecting verb-movement and the auxiliary system in a language that initially resembled its Germanic relatives rather closely ultimately led to the creation of a verbal system that is unique in the Germanic context. We saw that these changes were initially triggered by the loss of vP-pied-piping, which had specific consequences in the V2 domain, resulting in the reanalysis of V2 structures as TPs (cf. (22) above). Various factors, including the reanalysis of modal-containing structures (cf. (23)), the rise of a class of negative auxiliaries and of do as a non-modal auxiliary then “remedied” the in (tense-) inflectional terms unsupportable V-to-T raising system that briefly existed at the end of the 16th century. The ever-increasing availability of auxiliaries and their establishment as a syntactically distinct class of “T-elements” undermined the trigger for V-to-T raising to a significant extent and ultimately led to a situation in which V-to-v-to-T raising could be reanalysed as v-to-T raising, with only verbs merged in the relevant kind of v (see Note 18), i.e. the auxiliaries, consequently being able to undergo this raising. The final change was the loss of “empty” v-to-T raising in positive declarative contexts, which resulted in the modern-day system of do-support, do being restricted to contexts in which it has an “interpretive effect”.

Of course, we do not mean to imply that there is anything inevitable about the sequence of changes we have described. These changes were a consequence of certain aspects of the initial conditions and the intermediate stages. A minor difference at any stage could have prevented further changes from taking place, or led to different changes. This can be clearly seen if we compare the changes described for English with the development of the Scandinavian languages, a point which was drawn to our attention by Christer Platzack. Essentially, it is clear that all the Scandinavian languages have undergone change from OV to VO and lost general object shift (see Hróarsdóttir 2000 and Rögnvaldsson 1996 on Icelandic, Delsing 2000: 271 on Old Swedish, and Faarlund 1994: 64-7, 2004b on Old Norse). Although these languages vary as regards the precise extent of object shift and V-to-T movement (see Vikner the imperative. On the other hand, the evidence adduced in Johnson (1991) does suggest that NE has at least “short” V-movement, and this may then imply the presence of a further v-layer if the proposal in the text is to be maintained.
1995, 2001 for details), they are all V2, and have been so throughout their recorded history, and they lack anything resembling the NE auxiliary system, contracted negation or do-support. Briefly, we suggest that the reason these languages did not undergo the full set of developments of that English did has to do with the nature of the initial conditions. The Scandinavian languages appear to have lacked subject-clitic pronouns throughout their history; subject clitics are absent everywhere in Modern North Germanic, including Icelandic (Thorbjörg Hróarsdóttir (p.c.)). Faarlund (2004:35) shows that in Old Norse 1sg ek and 2sg þú cliticise to a preceding verb, producing forms such as hafðak from hafða ek “had I”. It seems clear, though, that these pronouns always occupied postverbal position in non-subject-initial V2 clauses. Faarlund (2004:191) gives the following example:

(28) í bók þessi lét ek ríta fornar frásagnir
    in book this let.1s I write ancient stories.
    “In this book I have had ancient stories written down.” (Hkr I.3.1)

It seems, then, that the Old Norse situation regarding the distribution of subject clitics is quite distinct from that of OE and ME, as described above and illustrated in (21). Hence there was no possibility of the kind of reanalysis of subject clitics shown in (22) in Old Norse. Since this reanalysis was responsible for destabilising V2 in English, we see why V2 was retained in Scandinavian (given the Inertia Principle). A further relevant point, also made by Roberts (1993: 309), is that the Scandinavian languages appear to lack the lexical item do, or any other kind of potential dummy auxiliary; this may explain, in part, why do-support has not developed in these languages. The important point, though, is that, owing to the different initial conditions in Scandinavian in that subject (pro)clitics were missing, the cascade of changes that we observe in English did not happen. It is interesting to note in this connection the extent to which parametric systems and parametric changes are sensitive to initial conditions.

5 Conclusion

The result of the changes described in the foregoing sections is that the OE system with OV, V2, no syntactically distinct auxiliaries and no V-movement in non-V2 clauses developed into the NE system, which is VO, non-V2, and has a class of syntactically distinct positive and negative auxiliaries and do-support, via intermediate steps featuring processes found in neither OE nor NE, such as fully productive V-to-T and object-movement restricted to negative and quantified objects. This remarkable series of changes can be seen as a cascade of parametric changes. We can summarise them as follows:

(29) a. Loss of VP-to-SpecvP movement (late 12th/early 13th century)
    b. Restriction of object shift to negative and quantified objects (1400)
    c. Loss of vP-movement to SpecTP (early 15th century)
    d. Loss of V2 (1450)
    e. Development of lexical T (modals and do) (1525)
    f. Loss of V-to-T (1575)
    g. Contraction of negation (1600)
    h. Development of negative auxiliaries (1630s)
Development of *do*-support (later 17\textsuperscript{th} century)

It has often been pointed out that English seems to diverge quite radically from the other West Germanic languages. It used to be thought that this had to with the influence of Norman French, although more recently the effects of Old Norse have sometimes been regarded as responsible for this divergence (see for example Kroch & Taylor 1997, Trips 2002). We, however, argue that the series of changes in (28) had the net effect of transforming English from a typologically “standard” West Germanic language into the unusual system of Modern English. In this paper, we have tried to show how each change led to the next and how each change, after the initial one, can be ascribed to the interaction of specific system-internal factors. There therefore appears to be no need to invoke contact as a direct cause of the changes as each syntactic change seems to be sufficient to cause the next. The initial change, as we suggested in Section 3, may have been due to extraneous lexical and morphophonological changes, the first perhaps connected to contact with French.

We could think of this as “parametric drift”: a cascade of parametric changes diffused through parts of the functional-category system over a fairly long period of time. This point emerges more clearly of we restate the parameters in more technical terms (with the exception of (29g), which was initially a purely phonological change):

(30) a. Loss of pied-piping to satisfy \( v \)'s EPP\(_D\) feature, which may have been optional throughout the attested OE period (thus guaranteeing the “interpretive effect” of defocalisation of material to the left of \( V \); see Note 13)

b. Loss of \( v \)'s optional EPP-feature, but retention of specialised EPP\(_D\) on \( v \) (see (a))

c. Loss of pied-piping to satisfy \( T \)'s EPP\(_D\) feature

d. (Matrix) \( C \) loses EPP-feature triggering \( T \)-movement

e. Modal features of \( T \) realised by Merge

f. \( v \) loses EPP-feature triggering \( V \)-movement (but see Note 18)

(g. possibly not a syntactic change)

h. Negative features of clause realised by Merge in \( T \)
i. \( T \) loses obligatory feature triggering \( v \)-movement

So we observe a series of small, incremental changes to the formal feature make-up of the core functional categories \( C \), \( T \) and \( v \). Taken together, they give rise to a major reorganisation of the English verb-placement and auxiliary system, and have created a system which is quite unlike anything found elsewhere in Germanic (or Romance).

What causes the cascade effect? To answer this we need to understand exactly what is meant by the “propensity to change” alluded to above. The key idea, due to Lightfoot (1979: 123), is that “grammars practice therapy, not prophylaxis”. Essentially, each parameter change skews the PLD in such a way that the next is favoured, perhaps in concert with other pre-existing factors (such as the existence of subject- and object-clitics with their particular behaviour in V2 contexts, as discussed in Section 4. We have seen in the description above how each successive change was favoured. Let us now look at this in a little more detail.
The crucial trigger for VP-pied-piping to Spec\(v\)P was the occurrence of VP-internal material other than the direct object in a preverbal position in subordinate clauses. OE, as is well-known, showed a good deal of “leaking” of such material, and we account for this with the idea that VP-pied-piping was optional. We suggested in Section 3 that the two most important cases of VP-internal material were particles and indirect objects. Independent factors – the influx of French lexical items replacing verb-particle combinations, and the loss of dative case leading to a rise in the expression of indirect objects as PPs – may have undermined this trigger experience. The OE system, with the pied-piping/stranding option for EPP\(D\) satisfaction, was inherently marked in terms of the Subset Principle, since this grammar generated a larger language than one without the optionality, and hence robust trigger experience was crucial.

How did (30a) lead to (30b)? The loss of \(v\)’s optional EPP-feature, resulting in the unavailability of a general object-raising trigger, could plausibly have been the consequence of contradictory input from V(P)R contexts. Recall that these structures involving modals were biclausal in OE and ME and that the EPP-feature associated with the lower (infinitival) T-head could be satisfied either via pied-piping (i.e. \(vP\)-movement, where \(vP\) would have contained a raised object wherever the optional or specialised EPP\(D\) on \(v\) was present) or by “stranding” (i.e. subject-raising). Note that the “stranding” option of raising just the subject-DP would have been just as available in cases where \(v\) was associated with an optional EPP\(D\) feature as in those where it was not. Consequently, V(P)R structures would have represented a context where objects that had undergone “defocusing” movement under the influence of \(v\)’s EPP\(D\) feature might nevertheless surface in postverbal position (\(V\) in V(P)R structures necessarily undergoing movement to T, as outlined in Section 3). Thus VO order, in V(P)R contexts at least would not have been consistently interpretable as a “focusing” structure and it is conceivable that this input may have compromised the trigger experience to the point where the “defocusing” EPP-feature was lost. This would, of course, have led to the situation that we see in late ME, namely that the only objects that still surface preverbally are those attracted by the remaining object-attracting feature, namely the specialised EPP\(D\) feature discussed in Note 13. Precisely when and how this feature arose and why it was retained for as long as it was are questions that we must leave to future research at this point.

What is clear is that the restrictions on object-movement, combined with the loss of VP-pied-piping, led to the change in (30c): the loss of \(vP\)-pied-piping. We described in Section 3 how, both in monoclausal and biclausal contexts, the trigger experience could not distinguish the pied-piping from the stranding case, and so, once again, the Subset Principle led to the loss of the older pied-piping grammar. The loss of \(vP\)-pied-piping led to the general requirement that a DP had to appear in subject position. This led to the reappraisal of subject clitics as occupying this position in the exceptional V3 orders, and hence to “decliticisation” and the reappraisal of the \(XP – SCL – V\) as well as \(Subject – V\) orders as non-V2 structures with \(V\) moving to T.

\(V\)-to-T movement was not, however, robustly triggered by the morphological system of Late ME, given the “rich tense” requirement for this operation identified in Biberauer & Roberts (2005c). Hence the loss of V2 favoured the development of the auxiliary system (30e) and the loss of \(V\)-to-T (30f). The reappraisal of the modal auxiliaries, at least, was also favoured by the changes in restructuring complements
caused by the loss of vP-pied-piping (as well as the loss of infinitival morphology, an independent morphophonological change).

The development of contracted negation was initially simply a phonological reduction of *not* to *n’t*. However, in combination with the loss of V-to-T movement, it led to the development of a separate class of negative auxiliaries. This is a case of the development of an inflectional affix. In general, following the proposals in Fuss (2005), we can take this to involve the removal of a given feature from the syntactic system as an autonomous element, in favour of systematically associating it with a lexical item or class of lexical items. As a further case of restriction on the distribution of a lexical item, this might be thought of as driven by the Subset Principle.

The development of negative auxiliaries may have led to the development of general *do*-support if the conjecture at the end of the previous section regarding the status of obligatory v-movement is correct. Since this couldn’t be seen in many cases, once V-to-T had been lost, and since negative auxiliaries had developed (along with auxiliaries bearing a Q-feature, by analogy, we must suppose), v-movement became optional, and always had a discourse effect. Again, this is an example of a restriction being imposed on a movement operation.

One factor which is very clearly at work in many of these changes is what we might call “restriction of function”: the narrowing down of an operation to a subset of the contexts in which it formerly applied. To the extent that this kind of change imposes new restrictions on the distributional freedom of a (class of) lexical items, it may derive from the Subset Principle. A further factor may be a general preference for relative simplicity of derivations, which frequently disfavours movement, or movement of relatively complex categories.

In general, then, we see that it is possible to maintain a strong version of the Inertia Principle (which, as Longobardi 2001 points out, is desirable in the context of the Minimalist Programme) and yet at the same time account for an intricate series of related syntactic changes, not all of which have a purely syntax-external cause. At the same time, we see what Sapir’s (1921:165) intuition regarding “the vast accumulation of minute modifications which in time results in the complete remodelling of the language” might mean in principles-and-parameter terms.

References


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