On Verb Clusters in Early English*

Shohei Nagata

1. Introduction

Old English (henceforth, OE) shows the variation of its word order in subordinate clauses, which rarely show root phenomena such as Verb Second (V2). This paper sheds light on the word-order variation in two verbal clusters (2VC). The relevant examples are as follows:

(1) a. *þa he from þam arleasan cyninge*
that the from the wicked king
nænige sibbe ***findan***$_2$ ***meaht***$_1$
not any friendship find can
'the he might not find any friendship from the wicked king'
(Trips (2002:76))

b. *þe æfre on gefeohte his handa* ***wolde***$_1$ ***afylan***$_2$
who ever in battle his hands would defile
'whoever would defile his hands in battle'
(Pintzuk (1991:102))

c. *þæt hie* ***mihton***$_1$ *swa bealdlice Godes geleafan* ***bodian***$_2$
that they could so boldly God's faith preach
'that they could preach God's faith so boldly'
(van Kemenade (1987:179))

d. *þæt he* ***mot***$_1$ ***ehtan***$_2$ *godra manna.* (SAuxVO)
that he might persecute good men
'that he might persecute good men'
(Pintzuk (2002:282, 13b))

e. *þæt ænig mon* ***atellan***$_2$ ***mæge***$_1$
that any man relate can
ealne þone demm (SVAuxO)
all the misery
'that any man can relate all the misery'
(Pintzuk (2002:283, 16b))

Orders such as (1a) are called Verb Final in that the finite verb (*meaht* here) is

* I would like to express my deepest gratitude to Yukio Hirose, Nobuhiro Kaga, Masaharu Shimada, Masaru Kanetani and Shuto Yamamura. I would also like to thank Masatoshi Honda, Ryohei Naya and Hiroko Wakamatsu for helpful comments. Any remaining errors are mine.

preceded by the non-finite verb *findan*. In (1b), the finite verb *wolde* adjacently precedes the non-finite verb *afylan*. In (1c), *mihton* precedes the verb phrase *swa beadlice Godes geleafan bodian*. Orders as in (1d) may be referred as Standard English order: SAuxVO. Finally, orders as (1e) show Verb Final combined with VO order: SVAuxO. Given that OE is an SOV language as same as other Germanics such as German and Dutch, it is considered that Verb Final such as (1a) is a canonical order and the others are derived with some operations from (1a) (see van Kemenade (1987)). Note, however, that the attested orders as (1b) and (1c) are not OE-specific orders among SOV Germanics; such orders are found in Germanic dialects: West Flemish and Zürich German (see Evers (1975), Haegeman and van Riemsdijk (1986), Haegeman (1988)). Following the literature, let us conveniently call a word order such as (1b) Verb Raising (henceforth, VR) and (1c) Verb Projection Raising (henceforth, VPR).[1] In addition, OE does not always show OV orders, as seen in (1d) and (1e).[2]

We have seen, as in (1), that OE shows word-order variation. Thus, many researchers have attempted to deal with this variation and to explain how it reduces in Middle English (henceforth, ME). More precisely, the approaches of the researchers are mainly divided into three groups according to underlying order. For example, the traditional generative approaches by van Kemenade (1987) and Lightfoot (1991) assume OE to be an (S)OV language and state that the change in ME is attributed to resetting the relevant parameter, namely head-parameter. However, the approach faces the theoretical problem that language change must be gradual. In order to solve it, another approach by Pintzuk (1991) provides an interesting assumption; following Kroch (1989), Pintzuk (1991) proposes an alternative account that there exists VO base in OE as well as OV base, that is double-base, and VO competes with OV and survives in ME. The advantage of the

[1] According to Haegeman and van Riemsdijk (1986), there exist interpretational differences between VR and VPR. They explain the scopal difference by assuming reanalysis-and-inversion operation (see Haegeman and van Riemsdijk (1986) for a detailed discussion).

[2] Stockwell (1977) argued that, particularly in later periods, OE allowed the wider incidence of DPs. Although German and Dutch allow post verbal DP, it is restricted to 'heavy' ones. On the other hand, in OE even 'light DPs' occurred in post-verbal position. In early OE, only prosodically heavy DPs took place post-verbally in subordinate clauses (see Pintzuk and Kroch (1989)). However, as Fischer et al. (2000:148-149) state, the observation above is clearly not the case in later OE; illustrated as follows:

(i) *Þu hafast gecoren þone wer*.
thou hast chosen the man (ApT 34.23; Fischer et al. (2000:148))

Moreover, orders such as (1d) are apparently similar to ones in NE for being S-Aux-V-O order. However it should be distinct from Modern English in that OE ones allow non-adjacency of verb and object (Biberauer and Roberts (2005:18)).

approach is that it can naturally explain the variation in OE and the gradual change. This approach is referred to as *grammars-in-competition*. However, this approach will face some logical problems which are stated in section 2.1 in detail. On this basis, this paper will adopt Biberauer and Roberts' (2005) approach, which follows Kayne (1994). I argue that the approach is more elegant than the others because the natural accounts for the variation and the change are made with a single structure.

While Biberauer and Roberts (2005) analyze the derivation of 2VC word order, they do not confirm the analysis in the view of diachrony.[3] This paper, thus, will verify whether the analysis works well in explaining the distribution of 2VC in earlier stage of English. For this purpose, I retrieved the relevant 2VC data from OE and ME corpora.[4] As a result, the research will lead us to a new and fine-grained suggestion on the development of modal in English.

This paper goes as follows. In section 2, I will introduce the three previous studies on word order variation in early stage of English in generative view and adopt Biberauer and Roberts (2005). In section 3, I will verify whether the analysis by Biberauer and Roberts (2005) works even in accounting for the data in ME, which I retrieved from corpora. In section 4, I propose a new view of the development of modal in English and provide three verbal clusters (henceforth, 3VC) data in OE and ME as a remaining issue. Finally, section 5 concludes this paper.

2. Background: Word Order in Early English

As I have previously noted, many researches on word-order variation in OE exist. In this section, we see how the variation and change in earlier stage of English have been accounted for. The approaches to the relevant issue are mainly divided into the three groups: the traditional generative approach, grammars-in-competition approach and Kaynian-movement approach. I will adopt Biberauer and Roberts (2005), based on Kayne (1994), in that the approach can solve the problems the others face.

[3] Biberauer and Roberts (2005) account for the change from OV to VO in ME, assuming that optional object movement is restricted in special contexts in ME. However, they do not focus on 2VC in ME.

[4] Note that there exist 2VC data whose matrix verbs are aspectual auxiliaries: HAVE or BE in OE and ME. In addition, they also show word-order variation as with (1a-e). In this paper, I put aside the data because there remains unclear how the properties of them are in earlier stages of English. Thus, I deal with 2VC data in subordinate clauses with (pre-)modals.

2.1. Previous Studies

First, let me introduce the traditional approaches by van Kemenade (1987) and Lightfoot (1991). Learners acquire underlying word order by observing surface orders they perceive as PLD (Primary Linguistic Data). However, OE was a language whose underlying order (SOV) was "not easily retrievable from surface patterns" (van Kemenade (1987:177)) since OE shows some movement operation such as extraposition. Thus, the surface SVO order causes the learners to learn their underlying order as SVO. In addition, "this change was completed around 1200" (van Kemenade (1987:177)).[5] To sum, OE shows various word-order patterns because of any movement operations such as extraposition or Verb Second, and this prevented learners from setting parameter of directionality as OV. There remains, however, an empirical problem to this approach; of course, the change should be gradual. In other words, the older order (i.e. OV) becomes ungrammatical not immediately when the innovative order (i.e. VO) emerges.[6] In addition, OE shows various word order patterns as shown above. Thus, given the approach is correct, it is difficult to account for how the parametric change explains the gradualness.

Second, the grammars-in-competition approach by Pintzuk (1991) successfully accounts for the various word-order patterns in OE by assuming that there exists double-base in OE in respect of V and I(T): Double-Base Hypothesis (DBH). Moreover, Pintzuk (1991) shows the change to single VO-base system in ME, claiming that what motivates the change is the high frequency of post-verbally positioned pronominal objects or one-syllable adverbs, which means that the high frequency causes learners to set head parameter as head-initial. The advantage of the approach is that, as Pintzuk (1991) claims, it not only accounts for the word-order variation in OE subordinate clauses, but also supports the gradualness in grammatical changes, which is challenging for van Kemenade (1987) and Lightfoot (1991). While the approach can explain the gradualness, there exist two logical problems: first, the surface order SVOAux, the existence of which DBH logically predicts, is not attested in OE; second, it remains unclear why double base (i.e. head-initial and head-final for V and I) existed in OE.

In this subsection, I reviewed the two types of approaches: the traditional

[5] According to Lightfoot (1991), the word-order change is accounted for by parameter setting. He assumes the notion 'degree-0 learnability', which states that learners can only access main clauses which have no clausal embedding. As shortly mentioned above, main clauses in OE show V2 phenomena. Thus, learners at the relevant period acquire a grammar where underlying order is SVO.

[6] According to Fischer et al. (2000), clauses with VO orders did not outnumber those with OV until 13_{th} century.

generative and grammars-in-competition approaches. Comparing the two approaches with the others, I argue that the latter is superior to the former in that the latter can account for the gradualness even though the two problems remain unsolved. In the next subsection), I will introduce an alternative approach which can account for the logical problems faced by Pintzuk's (1991) DBH.

To anticipate, let me introduce the minimalist notion by Kayne (1994) for Biberauer and Roberts (2005) in the next subsection. The approaches reviewed in this subsection are based on *X-bar* theory. This means that all of the human languages has universally *X-bar* schema and whether a head precedes its complement in a given language is determined by head-parameter. In minimalist framework, however, such a schema has been eliminated and the only permitted operation is *merge*. Since *merge* does not participate in linear order, word order, which *X bar* theory contributes to previously, must be related to syntax. In this background, Kayne (1994) proposes LCA (Linear Correspondence Axiom) as a principle of phrase structure, according to which, a surface, linear order is determined in syntax: if an element α c-commands another one β, α precedes β. This leads us to assume that all human languages are underlyingly head-initial and OV orders are derived by leftward-movement from head-initial structures (see Kayne (1994) for a detailed discussion).

Although I adopt Biberauer and Roberts (2005) in this paper, many approaches exist based on Kayne (1994) in literature (Roberts (1997); van der Wurff (1997, 1999); Fischer et al (2000)). It is plausible to claim that most of the approaches are more elegant for word-order in English than the grammars-in-competition approach in that they can explain both synchronic and diachronic issues with a single (head-initial) base. This means that synchronic variation and diachronic changes are accounted for by assuming optionality of movement.

2.2. Biberauer and Roberts (2005)

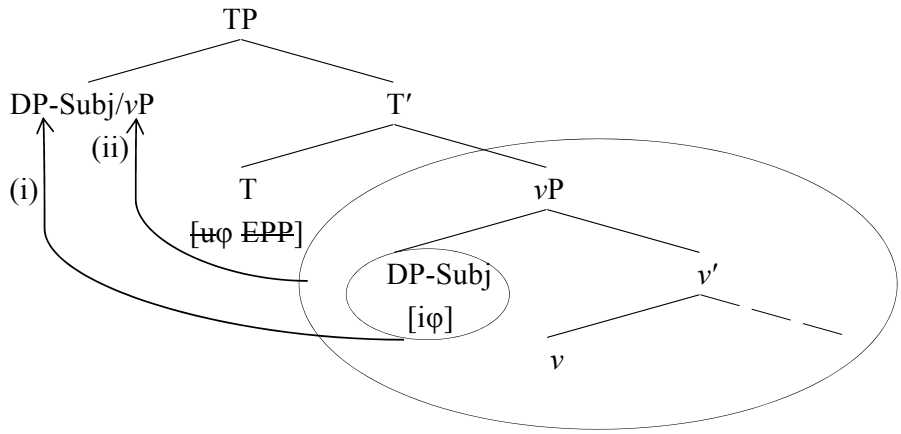
Based on Kayne (1994), Biberauer and Roberts (henceforth, B&R) (2005) assume that the variation of OE word-order is accounted for by movement of a constituent to a relevant spec and that such a movement is triggered by requirement of the Extended Projection Principle (henceforth, EPP) feature on functional heads: T/*v*. Note that functional heads T and *v* are responsible for Case assignment to DPs via Agree.[7] This means that DPs which enter into Agree relation with T/*v* are

[7] Roberts (1997) also follows Kayne (1994). The difference between him and B&R (2005) is that Roberts (1997) assumes AgrO and OE is a language which has Strong AgrO. In addition, he argues that the loss of such strong AgrO motivates consistent SVO order.

allowed to move with the EPP feature. In technical term, Chomsky (2001, 2004) defines T/*v* as Probe and such DPs as Goal.

Let us then see B&R's approach. B&R (2005) define OE as a language where the EPP feature on T/*v* is satisfied by movement of a constituent bearing [D] on Goal or of a pied-piped bigger constituent bearing [D] to a relevant specifier position.[8] Thus, T's EPP satisfaction is illustrated as follows:

(2)

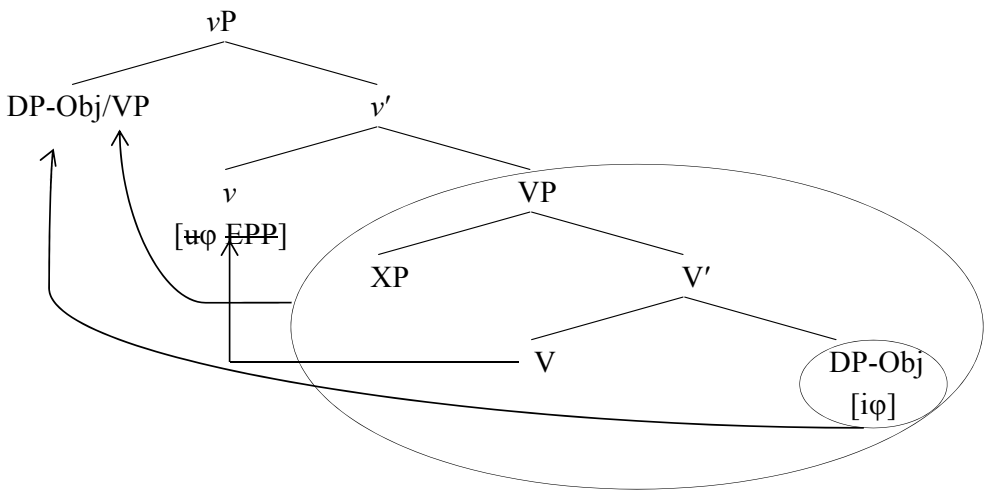


As shown in (2), the two movement operations are possible as for the deletion of the EPP feature in T: (i) non-pied-piping option (DP-movement to Spec, TP) or (ii) pied-piping option (*v*P-movement to Spec, TP). B&R (2005) also assume that *v*'s EPP is also satisfied by either DP object or VP as with the TP domain. This is illustrated as follows:[9]

[8] B&R (2005) assume OE as such a language, following Richards and Biberauer's (2004) four-way typology in satisfying T's EPP. On this basis, OE is categorized in Spec pied-piping language in their term; T's EPP feature is also satisfied by a movement of a constituent containing DP: *v*P (See Richards and Biberauer (2004) for the other three language groups).

[9] According to B&R and Biberauer and Roberts (2010:85), DP subject merges in Spec, *v*P after the completion of *v*P represented here. Given that, one would disallow DP object/VP internal merge before external merger of DP subject according to Chomsky's (1995:355f).

(3)



Based on the fundamental mechanism illustrated above, B&R (2005) also account for the derivation of Modern German subordinate Verb Final order.[10] The order as in (4) is the data that shows aspectual auxiliary *hat* is located in the final position. In B&R (2005), this example indicates that *hat* is at the structurally lowest of all. Let us see the detailed derivation:

(4) daß Johann das Buch gelesen hat
that John the book read has
'that John has read the book'

Given Kayne's (1994) hypothesis for universal head-initiality, the underlying structure for (4) is represented as follows:

(5) $[_{v*P}\ [_{v'}$ gelesen+v $[_{VP}\ t_{gelesen}\ [_{DP}$ das Buch]]]]

Then, v* agrees with Goal DP object *das Buch* and the EPP requirement on v causes movement of VP by obligatory pied-piping:

(6) $[_{v*P}\ [_{VP}\ t_{gelesen}\ [_{DP}$ das Buch]] $[_{v'}$ gelesen+v t_{VP}]]

After movement of the VP, the DP subject *Johann* merges with v*P:

[10] Modern German is categorized into Head Pied-Piping language in Richards and Biberauer's (2004) typology. Such a language differs from Spec Pied-Piping languages (OE) in that T targets [D] on Spec, *v*P in the latter; on the other hand, T targets [D] on head *v* in the former.

(7) [$_{v*P}$ [$_{DP}$ Johann] [$_{v*P}$ [$_{VP}$ $t_{gelesen}$ [$_{DP}$ das Buch]] [$_{v'}$ gelesen+*v* t_{VP}]]]

For ease of exposition, B&R (2005) tentatively assume that the aspectual auxiliary *hat* merges directly in T here and the EPP on the T requires movement of *v**P, resulting in Verb Final order:

(8) [$_{TP}$ [$_{v*P}$ [$_{DP}$ Johann] [$_{v*P}$ [$_{VP}$ $t_{gelesen}$ [$_{DP}$ das Buch]] [$_{v'}$ gelesen+*v* t_{VP}]]] [$_{T'}$ hat t_{v*P}]]

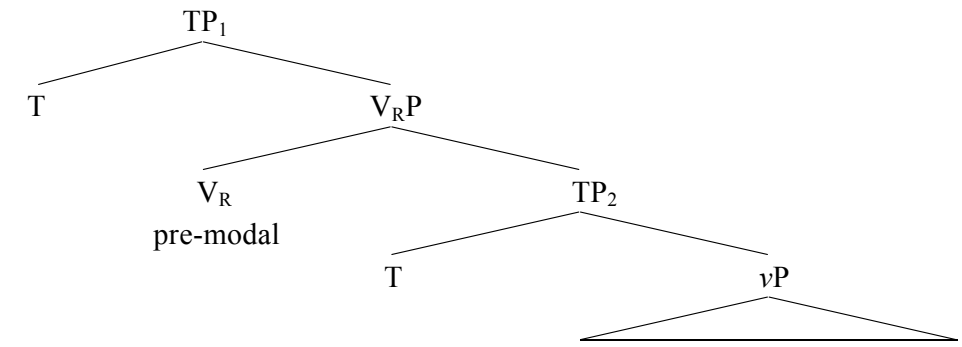
Let us then see the cases of OE. OE shows Verb Final order, too, illustrated as follows:

(9) Đa se Wisdom þa fitte asungen hæfde
when the wisdom then poem sung had
'when Wisdom had sung this poem'
(Boethius 30.68.6; Fischer et al. (2000:143, 25))

The derivation of this order is straightforwardly accounted for on a par with that of Modern German as in (4), although it remains unclear where aspectual auxiliary is merged even in OE. In this connection, B&R (2005) tentatively assume that *hæfde* merges in T, and in the following section, I will take it to be an important issue for the account for the derivation of word-order variations with three verbs clusters (see section 4.2).

Before accounting for the case of VR and VPR order, let us see the category of modals in OE. B&R (2005) assume, following previous studies on the development of modals in English (Lightfoot (1979), Roberts (1985, 1993), Roberts and Roussou (2003) for the discussion on the development of these verbs into modals in English), that modals in OE such as *willan* 'will', *cunnan* 'can', *magan* 'must', etc., are lexical verbs that select infinitival TP complements: biclausal; they are *pre-modals* in this respect in Lightfoot's (1979) term. Thus, following B&R (2005), I will take them to be lexical elements and conveniently represent them as V_R in tree structures. Here I show a basic structure:

(10)



VR and VPR orders are repeated here:

(11) a. *þe æfre on gefeohte his handa* ***wolde***$_1$ ***afylan***$_2$
who ever in battle his hands would defile
(= (1b))

b. *þæt hie* ***mihton***$_1$ *swa bealdlice Godes geleafan* ***bodian***
that they could so boldly God's faith preach
(= (1c))

The derivation of VR order as in (11a) is illustrated as follows. Note that for ease of exposition, I use categorial markers instead of actual words in brackets in (12)-(14). For example, Subj refers to *þe æfre*, PP *on gefeohte*, Obj *his handa*, V_R *wolde* and V *afylan*. First, the V *afylan* moves to the head *v* and remnant VP movement to (inner) Spec, *v*P is taken place:

(12) $[_{vP}$ Subj $[_{vP}$ $[_{VP}$ PP $[_{V'}$ t_V Obj]] $[_{v'}$ V+*v* $t_{VP}]]]$

Second, the T_2 merges with the *v*P above, the V+*v* moves to the head T_2 and the remnant *v*P moves to Spec, TP_2:

(13) $[_{TP2}$ $[_{vP}$ Subj $[_{vP}$ $[_{VP}$ PP $[_{V'}$ t_V Obj]] $[_{v'}$ t_{V+v} $t_{VP}]]]$ $[_{T2'}$ V+*v*+T_2 $t_{vP}]]$

Finally, pre-modal merges with the TP_2 and the V_R moves to the head T_1 via *v* for the reason of being lexical V not T, and the *v*P in the Spec, TP_2 undergoes movement to the Spec, TP_1 (the pronounced elements are marked in bold):

(14) $[_{TP1}\ [_{vP}\ \mathbf{Subj}\ [_{vP}\ [_{VP}\ \mathbf{PP}\ [_{V'}\ t_V\ \mathbf{Obj}]]\ [_{v'}\ t_{V+v}\ t_{VP}]]]\ [_{T1'}\ \mathbf{V_R+v+T_1}\ [_{vP}\ t_{vP}\ [_{v'}\ t_{VR+v}\ [_{VRP}\ t_{VR}\ [_{TP2}\ t_{vP}\ [_{T2'}\ \mathbf{V+v+T_2}\ t_{vP}]]]]]]]$

The derivation of VPR order is similar to that of VR in that both of them require TP_2 under B&R (2005). For ease of exposition, the relevant illustrations start with the TP_2 domain:

(15) $[_{TP2}\ [_{vP}$ Subj $[_{vP}\ [_{VP}$ AdvP $[_{V'}\ t_V$ Obj$]]\ [_{v'}\ t_{V+v}\ t_{VP}]]]\ [_{T2'}$ V+*v*+$T_2\ t_{vP}]]$

The next operation is different from that of VR: although in VR, pied-piping (*v*P movement to the TP_1) is taken place, in VPR, no pied-piping (DP subject movement to TP_1) occurs:

(16) $[_{TP1}\ \mathbf{Subj}\ [_{T1'}\ \mathbf{V_R+v+T_1}\ [_{vP}\ t_{Subj}\ [_{v'}\ t_{VR+v}\ [_{VRP}\ t_{VR}\ [_{TP2}\ [_{vP}\ t_{Subj}\ [_{vP}\ [_{VP}\ \mathbf{AdvP}\ [_{V'}\ \ t_V\ \mathbf{Obj}]]\ [_{v'}\ \ t_{V+v}\ t_{VP}]]]\ [_{T2'}\ \mathbf{V+v+T_2}\ t_{vP}]]]]]]]$

To anticipate, I argue against B&R's (2005) account that both VR and VPR are derived with TP_2 as pre-modal's complement, accounting for the distribution of the orders in OE. This will be discussed in section 3.

For the derivation of orders as (1d) and (1e) (SAuxVO and SVAuxO respectively), a technical notion, Phase Impenetrability Condition (henceforth, PIC) is crucial. PIC is roughly defined as follows:

> In a phase α with head H, the domain of H (i.e. its complement – MTB/IGR) is not accessible to operations outside α; only H and its edge are accessible to such operations. (Chomsky (2000:108))

In short, for B&R's (2005) discussion, phase α is *v* and H is VP. When the phase *v*P is completed, its complement VP is sent to Spell-Out by Transfer, and no movement operation required by other higher EPP features affects such already transferred elements. Thus, once DP object in VP undergoes no movement to Spec, *v*P, the *v*P domain which moves to Spec, TP does not contain DP object:[11, 12]

[11] No movement from VP can be technically followed by the general notion that leftward movement in Germanic is a 'defocusing' operation. On this basis, B&R (2005) assume that *v*'s EPP feature is divided to two types: the obligatory one for [+Op] or the optional one for defocusing. (see Biberauer and Roberts (2005:19f) and Kroch and Taylor (2000)).

[12] In terms of PIC, B&R (2005) successfully account for the underivable order: SVOAux.

(17) $[_{TP}\ [_{vP}\ \text{Subj}\ [_{v'}\ t_{V+v}]]\ [_{T'}\ V+v+T\ t_{vP}\ [\![_{vP}\ t_{V}\ \text{Obj}]\!]\ ]]$
Transfer

As shown in (17), since an object *in situ* is sent to Spell-Out, the element cannot be moved. Under this assumption, B&R (2005) account for the derivation of SAuxVO order; first, V_R merges with the structure in (17), then the *v*P moves to the relevant specifier positions as with the case of the VR order, as shown below:

(18) $[_{TP1}\ [_{vP}\ \mathbf{Subj}\ [_{v'}\ t_{V+v}]]\ [_{T1'}\mathbf{V_R}+v+\mathbf{T_1}\ [_{vP}\ t_{vP}\ [_{v'}\ t_{VR+v}\ [_{VRP}\ t_{VR}\ [_{TP2}\ t_{vP}\ [_{T2'}\ \mathbf{V}+v+\mathbf{T_2}\ t_{vP}\ [\![_{vP}\ t_{V}\ \mathbf{Obj}]\!]\ ]]]]]]]$

However, SVAuxO order as in (1e) faces a technical problem that as far as we assume TP to be pre-modal's complement, we never attest this order. More precisely, the existence of head T as a host for a non-finite verb precludes, in depth, the orders where a non-finite verb precedes a finite one. To solve the problem, we must assume a structure which has no host for a non-finite verb. Following Wurmbrand's (2001) characterization of German restructuring verbs, B&R (2005) stipulate that OE pre-modal can select a smaller non-clausal complement: *v*P. On this basis, SVAuxO order as in (1e) is derived as shown below:

(19) $[_{TP1}\ [_{vP}\ \mathbf{Subj}\ [_{v'}\ \mathbf{V}+v]]\ [_{T1'}\mathbf{V_R}+v+\mathbf{T_1}\ [_{vP}\ t_{vP}\ [_{v'}\ t_{VR+v}\ [_{VRP}\ t_{VR}\ t_{vP}\ [\![_{vP}\ t_{V}\ \text{Obj}]\!]\ ]]]]]$

To summarize, B&R's (2005) argument is noted in the following table:

Table 1: Word Order Variation and its Derivational Process

Word Order	Complement of pre-modal	VP-to-*v*P movement	Movement to TP_2	Movement to TP_1
Verb Final (1a)	*v*P	Yes		*v*P
VR (1b)	TP_2	Yes	*v*P	*v*P
VPR (1c)	TP_2	Yes	*v*P	DP subject
SAuxVO (1d)	TP_2	No	DP subject	DP subject
SVAuxO(1e)	*v*P	No		*v*P

In this subsection, I introduced B&R's (2005) Kaynian movement approach,

where the various OE word-order patterns are accounted for by movement with the optionality of pied-piping. In the next section, I will verify B&R's (2005) approach in the sense that it cannot solve diachronic problems raised from the quantitative data I retrieved for the research.

3. Diachronic Distribution of Word-Order Variation

We have seen that B&R (2005) can account for the issue dealt with in this paper: word-order variation. In this section, I will provide data retrieved from the electronic corpora for OE and ME: YCOE and PPCME2 respectively. More precisely, I retrieved the 2VC data with pre-modals only in subordinate clauses. Then, I will confirm whether B&R's (2005) account works even in explaining the distribution of 2VC in ME with the data for this research. To anticipate, the approach faces some problems and needs modifying.

3.1. The Empirical Problem in B&R (2005)

Given B&R (2005), I assume further that OE is a language in which pre-modals select not only TP but *v*P as their complements. This is illustrated as follows:

(20) $[_{VRP}\ V_R\ [_{TP2}\ T\ [_{vP}\ Subj\ [_{VP}\ V\ Obj]]]]$ (V_R selecting TP)
$[_{VRP}\ V_R\ [_{vP}\ Sbj\ [_{VP}\ V\ Obj]]]$ (V_R selecting *v*P)

The correlation between pre-modal's complementation and possible word-order is illustrated as follows:

Table 2: B&R's (2005) Word Order Variation and its Pre-modals' Complementation

Word Order	Complement of pre-modal
Verb Final	*v*P
VR	TP_2
VPR	TP_2
SAuxVO	TP_2
SVAuxO	*v*P

(cf. Table 1)

Let us then see how this classification works in explaining the relevant ME data. In the literature review, that head-parameter changes in ME (i.e. OV>VO).

However, we can observe OV order still in Early ME. Specifically, Verb-Final orders are observed at the period:

(21) a. *ase ich þe* ***bydde***$_2$ ***can***$_1$
as I that ask can (CMAYENBI, 271.2755)
b. *gef ha þeos modi motild* ***ouercume***$_2$ ***mahten***$_1$
if he those angry debaters pass over might
(CMKATHE, 25.96)

Under the approach by B&R (2005), it is predicted that VR and VPR order should be also attested in ME since it assumes that both of them need TP. However, as shown in (22) and Table 3 below, VPR orders are observed and VR orders are not in ME. The relevant VPR orders observed in ME are as follows:

(22) a. *þat we* ***mai***$_1$ *wid ioy of þe hali spirit hali paskis* ***obide***$_2$
that we may with joy of the holy spirit holy Easter expect
(CMBENRUL,34.1101)

b. *tha for his synnes Goddes sone of hevene* ***sholde***$_1$
that for his sins God's son from heaven should
al this peyne ***endure***$_2$
all this disciple tolerate
(CMCTPARS,295.C1.287)

The distribution of each word order through OE to ME is summarized in the following table:

Table 3: Distribution of Word Order in OE and ME (YCOE; PPCME2)

Word Order	Early OE	Late OE	Early ME	Late ME
Verb Final	318 (39.8%)	249 (36.4%)	101 (28.0%)	5 (6.1%)
VPR	393 (49.3%)	363 (53.0%)	259 (72.0%)	78 (93.9%)
VR	86 (11.2%)	72 (10.5%)	0	0

(EOE: -950, LOE: 950-1150, EME: 1150-1350, LME: 1350-1500)

The table shows that the order patterns observed in OE are reduced in ME; only VR orders are not observed in ME. If we accept B&R's (2005) proposal that VR order is derived from a structure in which pre-modals select *v*P and VR and VPR are derived from a one in which TP is selected (see Table 2), the distribution is

surprising. Although B&R (2005) as in Table 2 can predict the distribution in OE, it will fail to predict that in ME; it is challenging to account for the empirical problem, say; why are Verb Final and VPR attested even in ME, but VR is not? Thus, I argue that the prediction by B&R (2005), more specifically the classification in Table 2, is not correct and needs modifying. In the next subsection, I will provide the answer which will solve the problem faced by B&R (2005).

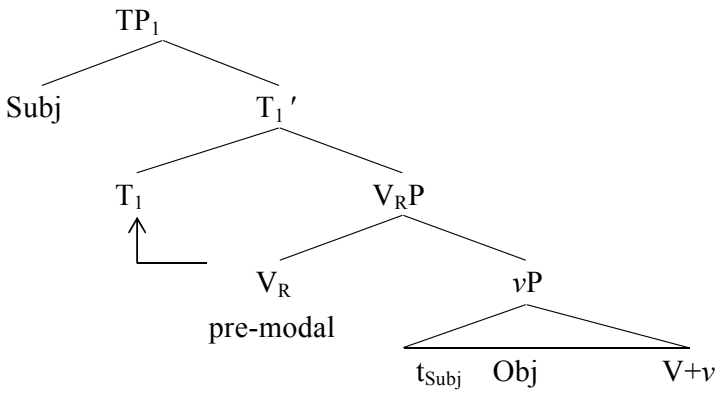
3.2. The Solution

In the previous subsection, I claim that B&R's (2005) classification (Table 2) faces a difficulty in solving the quantitative problem as in Table 3. The relevant questions raised in section 3.1 are repeated in (23), and, to anticipate, I provide a plausible answer which can explain both of the questions:

(23) a. Why are Verb Final order and VPR order attested?
b. Why is VR order not attested on the contrary to VPR?
⇒ It is because, as for pre-modal, ME is the language where pre-modal allows only *v*P as its complement.

Let us then see concretely whether the answer is relevant in solving the problems in (23). Firstly, I will show the motivation of the answer; I suggest that VPR order and even SAuxVO order as in (1d) are potentially able to be derived even when pre-modals select *v*P as their complements. The relevant representation is as follows:

(24)



I modify B&R's classification as for complement selection of pre-modal. Note that the modified parts are marked in bold:

Table 4: Modified Word Order Variation and its Pre-modals' Complementation

Word Order	Complement of pre-modal
Verb Final	*v*P
VR	TP_2[13]
VPR	TP_2/***v*P**
SAuxVO	TP_2/***v*P**
SVAuxO	*v*P

The classification in Table 4, unlike Table 2, can account for the distribution not only in OE but also in ME; if in (Early) ME, pre-modals select only *v*P as their complements, it is predicted that we observe all the orders other than VR. This prediction, as shown in section 3.1, corresponds to the distribution in Table 3. Thus, I have shown that the questions in (24) are answered by the modified classification in Table 4 and the assumption that pre-modals in ME select only *v*P.

Let us then see whether the assumption above is valid. The assumption is illustrated as follows:

(25) Pre-modal's Complementation and its Historical Change

OE		**ME**
TP	>	OBSOLETE
*v*P	>	*v*P

The assumption is compatible with the notion on language change, termed *the Subset Principle*:

The Subset Principle (Manzini and Wexler (1987:425))

"[t]he learner selects the grammar that generates the smallest possible language that is compatible with the data"

Following the Subset Principle, the relevant change is readily explained: once VR order is not attested, learners in the ME period generated a language that does not

[13] I assume that VR order is not derived by *v*P; we must assume partial pied-piping (*v*P movement without *v′* domain) in order to derive it with *v*P, shortly illustrated as follow:

(i) $[_{TP}\ [_{vP}\ \mathbf{Subj}\ [_{vP}\ \mathbf{Obj}]]\ [_{T'}\ \mathbf{V_R}\mathbf{+}\boldsymbol{v}\mathbf{+T}\ [_{vP}\ t_{VR+v}\ [_{VRP}\ t_{VR}\ [\underline{_{vP}\ t_{Subj}}\ [\underline{_{vP}\ t_{Obj}}\ [_{v'}\ \mathbf{V}\mathbf{+}\boldsymbol{v}\ [_{VP}\ t_V\ t_{Obj}]]]]]]]]$

allow VR order but does allow Verb Final and VPR orders (and even SAuxVO and SVAuxO orders).

In this subsection, I have argued that the questions raised in the previous section are answered not by B&R (2005) but by the modified classification in Table 4 and the assumption that pre-modal's complementation is restricted to *v*P in ME illustrated as in (25), showing that the assumption is followed by the subset principle. Importantly, this account will also evoke a new view of the development of modal in English as a consequence, which is implied in the next section.

4. Implications and Remaining Issues

4.1. Implications: The Development of Modal in English

In section 3.2, I proposed that ME is a language, where pre-modals allow as their complements only *v*P. In this connection, the following theoretical consequence will arise: since pre-modals in ME should allow only *v*P, modal should emerge from pre-modals selecting *v*P. In this section, I will provide an implication on the development of English modal.

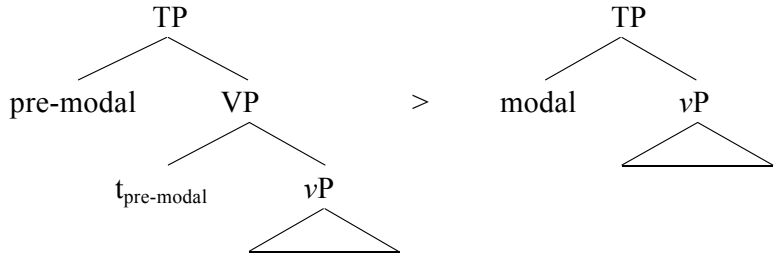
Before making my suggestion, let us first see the well-known grammaticalizational approach to the development of English modal. It is generally argued that English modals were lexical verbs selecting TP: biclausal structures. In addition, such structures changed to the current ones owing to reanalysis; leaners reanalyze the bi-clausal structure as in (26a) as the mono-clausal one as in (26b) in the early 16_{th} century (cf. Lightfoot (1979); Roberts (1985, 1993); Roberts and Roussou (2003)):

(26) a. [$_{TP}$ Sone [$_{TP}$ hit mæi [$_{VP}$ $t_{mæi}$ [$_{TP}$ T [$_{VP}$ ilimpen]]]]] (biclausal)
Soon it may happen

b. [$_{TP}$ Sone [$_{TP}$ hit mæi [$_{VP}$ ilimpen]]] (monoclausal)
(Roberts and Roussou (2003:40))

As shown in the previous section, my suggestion does not entirely correspond to the traditional approach to English modal. Rather, the alternative idea raised from the discussion in section 3.2 is more fine-grained. Given that there exist only pre-modals selecting *v*P in ME as in section 3.2, English modal emerges from such pre-modals. It is illustrated as follows:

(27)



Old English and Middle English after 16_{th} century

In this section, I made a suggestion that modals in English have developed from a structure where pre-modals select *v*P as their complements. In this connection, here I complete the illustration as in (25) to (28):

(28) Complement of pre-modal

OE		**ME**		**after 16_{th} century**
TP	>	OBSOLETE		
*v*P	>	*v*P	>	*v*P (as complement of modal)

4.2. Remaining Issues: Three Verbal Clusters

We have seen word-order variation in 2VC in OE and ME. The quantitative data were retrieved from the corpora (YCOE for OE and PPCME2 for ME). In addition, I collected the data of Three Verbal Clusters (3VC). However, I omitted 3VC from the main subject here, because the analysis of this issue needs some further assumption. Hence, I leave the relevant data, tentative observations and the indication for further research here; it should be noted that 3VC consistently consists of pre-modal, aspectual auxiliary and (participle) full-verbs. Let us then see the data, as shown below:[14]

(29) a. *ðæt se sacerd* ***scolde***$_1$ *mid bellum* ***bion***$_2$ ***behangen***$_3$
that the priest should with bells be hung-round
(CP: 15.93.3.600)

b. *þat þe o broþer* ***wolde***$_1$ ***haue***$_2$ ***destroyede***$_3$ *þat oþere*
that the one brother would have destroyed the other

[14] Note that (a)-examples in (29)-(33) refer to the data in OE and (b)-examples refer to that in ME.

(CMBRUT3,26.773)

(30) a. *be þam þe he* ***wille₁*** *him for Gode* ***geborgen₃*** ***habban₂***.
by that PRT he wants him for God saved have
(coverhom,HomS_34_[ScraggVerc_19]:99.2481)

b. *þatt nan ne* ***shollde₁*** ***filedd₃*** ***ben₂*** *Wiþþ hæþenndom*
that no one NEG should filled be with paganism
þurrh machhe
through wick
(CMORM,I,66.596)

(31) a. *þæ he hit swa* ***gedon₃*** ***habban₂*** ***wolde₁***
that he it so done have would
(cowulf,WHom_6:143.334)

b. n/a

(32) a. *ær hit* ***geenad₃*** ***mehte₁*** ***beon₂***
before it ended could be
(Or 5.11.238.2)

b. *and swiðe niedfulle to ðan inede þat* ***iherd₃*** ***sculen₁*** ***bien₂***
and greatly necessary to the indigo thatpraised can be
of gode.
by God
(CMVICES1,147.1820)

(33) a. *ðe he* ***habban₂*** ***wyle₁*** ***gehealden₃*** ***& geholpen₃***
that he have will protected & preserved
(cowulf,WHom_5:109.235)

b. n/a

The following Table shows attested 3VC word order in OE and ME:

Table 5: Distribution of 3VC Word Order in OE and ME (YCOE; PPCME2)

Word Order	Early OE	Late OE	Early ME	Late ME
1-2-3	173 (71.7%)	90 (82.5%)	234 (90.3%)	887 (100.0%)
1-3-2	27 (11.2%)	9 (8.2%)	19 (7.3%)	0
3-2-1	38 (15.7%)	8 (7.3%)	0	0
3-1-2	2 (0.8%)	1 (0.9%)	6 (2.3%)	0
2-1-3	1 (0.4%)	1 (0.9%)	0	0
2-3-1	0	0	0	0
Total	241	109	259	887

Of particular interest are the observations that in 3VC, 1-2-3 order is obviously frequent one and that Verb Final 3-2-1 order is never attested in ME (cf. Table3; in 2VC, Verb Final order is attested even in ME). The reason why I omitted 3VC from the subject is that the syntactic position of aspectual auxiliaries HAVE and BE in OE and ME is unclear.[15] Thus, I just put the tentative speculation from the observation here. 3-2-1 and 2-1-3 orders, namely the ones unattested in ME, have common characteristic: aspectual auxiliaries precede pre-modal. Given the Kaynian approach, more precisely B&R (2005), this observation is taken to be realization of a structure where aspectual auxiliary moves above matrix T, which is the position for pre-modals. Thus, I speculate that "aspectual auxiliaries, which are a member of movable *v*P in OE, change to one outside of movable *v*P in ME." Thus, further research for development of aspectual auxiliary might lead to the solution of this issue.

5. Conclusions

In this paper, I dealt with word-order variation in earlier stage of English. The variation and its change have been studied in different frameworks (Lightfoot (1991), van Kemenade (1987), Pintzuk (1991)). This paper adopted B&R's (2005) movement approach and verified it, providing the quantitative data on 2VC in OE and ME. The data I retieved from OE and ME corpora showed that Verb Final and VPR orders are observed and VR orders are not in ME. Moreover, I showed that these data are problematic for B&R (2005) and modified it for explaining them. More specifically, I solved the problem by arguing that pre-modals select only *v*P as their complements in ME. As a consequence, I suggested that English modal emerges from such pre-modals.

REFERENCES

Biberauer, T. and I. Roberts (2005) "Changing EPP Parameters in the History of English: Accounting for Variation and Change," *English Language and Linguistics* 9, 5-46.

Biberauer, T. and I. Roberts (2010) "Subjects, Tense and Verb-Movement in Germanic and Romance," paper presented at GLOW in Asia V (Delhi).

Chomsky, N. (1995) *The Minimalist Program*, The MIT Press, Cambridge, MA.

Chomsky, N. (2000) "Minimalist Inquiries: The Framework," *Step by Step: Essays on Minimalist Syntax in Honor of Howard Lasnik*, ed. by R. Martin, D. Michaels and J. Uriagereka, 89-155, The MIT Press, Cambridge, MA.

[15] Biberauer and Roberts (2010) assume that aspectual auxiliaries occurred in *v* earlier than reanalysis of modal and root modal.

Chomsky, N. (2001) “Derivation by Phase,” *Ken Hale: A Life in Language*, ed. by M. Kenstowicz, 1-52, The MIT Press, Cambridge, MA.

Chomsky, N. (2004) “Beyond Explanatory Adequacy,” *Structures and Beyond: The Cartography of Syntactic Structures, Volume 3*, ed. by A. Belletti, 104-131, Oxford University Press, Oxford.

Evers, A. (1975) *The Transformational Cycle in Dutch and German*, Doctoral dissertation, University of Utrecht.

Fischer, O., B. Los, A. van Kemenade and W. van der Wurff (2000) *The Syntax of Early English*, Cambridge University Press, Cambridge.

Haegeman, L. (1988) “Verb Projection Raising and the Multidimensional Analysis: Some Empirical Problems,” *Linguistic Inquiry* 19, 671-684.

Haegeman, L. and H. van Riemsdijk (1986) “Verb Projection Raising, Scope, and the Typology of Rules Affecting Verbs,” *Linguistic Inquiry* 17, 417-466.

Kayne, R. (1994) *The Antisymmetry of Syntax*, The MIT Press, Cambridge, MA.

Kemenade, A. van (1987) *Syntactic Case and Morphological Case in the History of English*, Dordrecht, Holland.

Kroch A. (1989) “Reflexes of Grammar in Patterns of Language Change,” *Language Variation and Change* 1, 199-244.

Kroch, A. and A. Taylor (2000) *The Penn-Helsinki Parsed Corpus of Middle English*, Second Edition (PPCME2), University of Pennsylvania, Philadelphia.

Lightfoot, D. W. (1979) *Principles of Diachronic Syntax*, Cambridge University Press, Cambridge.

Lightfoot, D. W. (1991) *How to Set Parameters: Arguments from Language Change*, The MIT Press, Cambridge, MA.

Manzini, R. and K. Wexler (1987) “Parameters, Binding Theory, and Learnability,” *Linguistic Inquiry* 18, 413-444.

Pintzuk, S. (1991) *Phrase Structures in Competition: Variation and Change in Old English Word Order*, Garland, New York.

Pintzuk, S. (2002) “Verb-Object Order in Old English: Variation as Grammatical Competition,” *Syntactic Effects of Morphological Change,* ed. by D. Lightfoot, 276-299, Oxford University Press, Oxford.

Pintzuk, S. and A. Kroch (1989) “The Rightward Movement of Complements and Adjuncts in the Old English of *Beowulf*,” *Language Variation and Change* 1, 115-143.

Richards, M. and T. Biberauer (2004) “Explaining EXPL,” paper presented at the 19th Comparative Germanic Syntax Workshop (New York).

Roberts, I. (1985) “Agreement Parameters and Development of the English Modal Auxiliaries,” *Natural Language and Linguistic Theory* 3, 21-58.

Roberts, I. (1993) *Verbs and Diachronic Syntax*, Kluwer, Dordrecht.

Roberts, I. (1997) “Directionality and Word Order Change in the History of English,” *Parameters of Morphosyntactic Change*, ed. by van Kemenade A. and N. Vincent, 397-426, Cambridge

University Press, Cambridge.

Roberts, I. and A. Roussou (2003) *Syntactic Change: A Minimalist Approach to Grammaticalization*, Cambridge University Press, Cambridge.

Stockwell, R. P (1977) "Motivations for Exbracitations in Old English," *Mechanisms of Syntactic Change*, ed. by C. Li, 394-421, Austin, Texas.

Taylor, A., A. Warner, S. Pintzuk, and F. Beths (2003) *The York-Toronto-Helsinki Parsed Corpus of Old English Prose* (YCOE), University of York, Heslington.

Trips, C. (2002) *From OV to VO in Early Middle English*, Benjamins, Amsterdam.

Wurff W. van der (1997) "Deriving Object-Verb Order in Late Middle English," *Journal of Linguistics* 33, 485-509.

Wurff W. van der (1999) "Object and Verbs in Modern Icelandic and Fifteenth-Century English: A Word Order Parallel and Its Causes," *Lingua* 109, 237-265.

Wurmbrand, S. (2001) *Infinitives: Restructuring and Clause Structure*, Mouton de Gruyter, Berlin.

Doctoral Program in Literature and Linguistics
University of Tsukuba
e-mail: s1630032@u.tsukuba.ac.jp