ON THE HISTORICAL DEVELOPMENT OF PREPOSITION STRANDING IN ENGLISH

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This paper presents an analysis of the historical development of preposition stranding in English within the framework of the minimalist program by incorporating the model of cyclic linearization advocated by Fox and Pesetsky (2005). It is claimed that preposition stranding is possible as long as there is no ordering contradiction between a preposition and its object. The cyclic linearization approach allows us to explain the facts that preposition stranding was allowed only in restricted contexts in Old English, and that its range of use was greatly expanded in the course of Middle English. The change in preposition stranding that happened in Middle English is shown to be closely related to the loss of inherent Case assignment by prepositions.*

Keywords: preposition stranding, cyclic linearization, anti-locality, word order, Spell-out

1. Introduction

In Present-day English (PE), preposition stranding is widely attested in a number of contexts such as wh-interrogatives, relatives, topicalization, and passives, as illustrated in (1) respectively.¹

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¹ Although a detailed analysis of preposition stranding in PE is beyond the scope of this paper, it should be noted that its possibility is restricted in some respects, depending on the relation between V and P/PP. First, preposition stranding is generally impossible when the object moves out of adjunct PPs, as illustrated in (i). This is due to a violation of a constraint prohibiting extraction from adjuncts (Huang (1982), Chomsky (1986, 2004), and Müller (2010)).
(1) a. Which book have they talked about?
   b. This is the book (which/that) they talked about.
   c. This book, they talked about.
   d. This book has been talked about.

On the other hand, some studies have observed that the possibility of preposition stranding was very limited in early stages of English (Allen (1980), van Kemenade (1987), and Fischer et al. (2000) among others). According to these studies, preposition stranding was possible in Old English (OE) only when the object was a pronoun, or in relative clauses introduced by the complementizer *he ‘that,’ while its possibility became greatly expanded in Middle English (ME).

The aim of this paper is to account for the historical development of preposition stranding in English within the recent framework of the minimalist program by Chomsky (2000, 2001, 2004, 2007, 2008), by incorporating the model of cyclic linearization of syntactic structure advocated by Fox and Pesetsky (2005). It is claimed that the cyclic linearization approach can give a theoretical explanation for the correlation between preposition stranding and word order pointed out by Amano (1982) and Ohkado (1990). It is also argued that the historical change of preposition stranding which happened in ME can be attributed to the change of the categorial status of prepositional phrases, which was closely related to the loss of inherent Case assignment by prepositions.

The organization of this paper is as follows. Section 2 reviews basic facts about the historical development of preposition stranding in English, focusing on the change from OE to ME. Section 3 examines previous

(i) a. *What time did John arrive at?
   (Hornstein and Weinberg (1981: 56))
   b. *The room, John hit Mary in.
   (van Riemsdijk (1978: 220))

Furthermore, it is often claimed that preposition stranding requires V and P to be reanalyzed as a single complex verb (cf. Hornstein and Weinberg (1981)). In this respect, passives behave differently from A′-constructions, in that reanalysis is obligatory in the former, but not in the latter. This is shown by the following contrast, where reanalysis cannot apply because of the intervention of adverbials between V and P.

(ii) a. *Everything was paid twice for.
   (Bresnan (1982: 54))
   b. *Your books were gone most thoroughly over.
   (Bresnan (1982: 54))

The necessity of reanalysis in passives is plausibly related to the fact that they involve Case absorption; see section 4.2 and footnote 12 for related discussion.
analyses and points out their problems. Section 4 presents an explanation for the historical change of preposition stranding in terms of the model of cyclic linearization advocated by Fox and Pesetsky (2005). Section 5 is the conclusion of this paper.

2. Historical Facts

This section reviews historical facts on the development of preposition stranding, and clarifies the issues to be addressed in this paper. In OE, the order of a preposition and its object was always P-NP when the object was a full NP. When the object was a pronoun, on the other hand, this order could be inverted and preposition stranding was possible, as illustrated in (2) and (3), which involve the personal pronoun *him* and the locative pronoun *þær*, respectively. In (2b) and (3b), the pronominal objects are separated from their governing prepositions, which van Kemenade (1987) analyzes as cliticization of the former to C.

(2)

a. *and hire dorston* *him fore gebiddan*
   ‘and they not dared him for pray’
   (Alc. P. XIX. 226 / Allen (1980: 54))

b. *… ofdrædd þæt him Godes yrre on becumgan secolde*
   ‘… afraid that him God’s anger on come would’
   (Alc. P. XXIII. 118 / Allen (1980: 55))

(3)

a. *ealle þe ðærbinnan wæron*
   ‘all that were within’
   (Oros. p. 200. 16 / Allen (1980: 60))

b. *he ðær weard from þæm burgwarum in abroden*
   ‘he was dragged in there by citizens’
   (Oros, 73, 10 / van Kemenade (1987: 146))

2 The word order of a preposition and its object was optionally inverted with a personal pronoun, but obligatorily with the locative pronoun *þær* (van Kemenade (1987: 146)). Expressions like (3a) have survived into PE as lexicalized units such as *therein, thereat* and *thereon* (Fischer and van der Wurff (2006: 198)). It therefore would be more accurate to call the phenomenon in (2b) and (3b) *postposition stranding*, but I will continue to use the term *preposition stranding* for the sake of convenience.
Preposition stranding was also found in relative clauses introduced by the complementizer *þe* in OE. In contrast, in relative clauses introduced by the relative pronoun *se* and in those introduced by *se þe*, preposition stranding was not allowed and pied-piping was obligatory. This contrast is illustrated in (4) below:

(4) a. *þe* relative clauses:

& het forbærnan þæt gewrit *þe* hit *on* awritten was
and ordered burn the writ that it in written was
‘and ordered to burn the writ that it was written in’
(Oros, 141, 22 / van Kemenade (1987: 147))

b. *se* relative clauses:

Tyrus & Sidon syndon twa burga, *be þam* spræc *se*
Tyrus and Sidon are two cities about which spoke the
Hælend
Lord
‘Tyrus and Sidon are two cities which the Lord spoke about’
(AHP, XVII, 52 / van Kemenade (1987: 149))

c. *se þe* relative clauses:

on þære readan sæ *on þære þe* he besanc to grunde
in the Red Sea in which that he sanc to the bottom
‘in the Red Sea, in which he sank to the bottom’
(ASL, XXV, 348 / van Kemenade (1987: 151))

These examples show that preposition stranding was possible in OE relative clauses unless relative pronouns appeared.

In the course of ME, preposition stranding became possible in a greater variety of contexts, though preposition stranding with pronominal objects

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3 Preposition stranding in relative clauses introduced by a complementizer only as in (4a) has survived into PE, with *þe* replaced by *that* in ME. On the other hand, relative clauses with *se* as in (4b, c) disappeared by the beginning of ME with the loss of *se*; instead, a new type of relative clause introduced by a *wh*-phrase emerged in ME (see below).

4 When *þær* was used as a locative relative pronoun, preposition stranding was exception-ally possible:

(i) oð þær he gestod bufon þam gesthuse, *þær* δæt cild *on* wunode
until that he stood above the inn where the child in stayed
‘until it (the star) stood above the inn where the child was staying’
(ÆCHom, I, 5.78.21 / Fischer et al. (2000: 66))

I will not investigate preposition stranding in *þær* relative clauses separately in this paper, because it can be analyzed in the same way as preposition stranding with the locative pronoun *þær*. 
like (2b) and (3b) was no longer available after 1200 (Fischer and van der Wurff (2006: 198)). According to Allen (1980), the first sporadic instances of preposition stranding in *wh*-interrogative clauses and *wh*-relative clauses appeared at the beginning of the thirteenth century, as illustrated in (5) and (6) respectively:

(5) nuste nan kempe, *whaem* he sculde slæn *on*

not-knew no soldier whom he should strike on

‘No soldier knew whom he should strike at’

(L. Brut 27487 / Allen (1980: 225))

(6) And getenisse men ben in ebron, *quilde* men mai get

and giant men are in Hebron which men may yet

wundren *onn*

wonder at

‘And there are gigantic men in Hebron, whom people may still marvel at’

(G & Ex. 3715 / Allen (1980: 226))

In addition, some examples of preposition stranding began to appear in topicalization and passive constructions, as illustrated in (7) and (8) respectively. As observed by Allen (1980) and van Kemenade (1987), although preposition stranding in these constructions was rare in the thirteenth century, it became more common after the fourteenth century.

(7) Ah *de gode* ich ga aa bisiliche *abuten*

but the good I go ever busily about

‘but I always diligently pursue the good’

(St Marg. p. 30. 35 / Allen (1980: 227))

(8) *heo* schal beo greatte *idollen*, leaflıuker *leoten* *f* *en* a

she shall be greater honored lady-liker thought of than a

leafdı of hames

lady of homes

‘she shall be more greatly honored, thought of as more ladylike

than a house wife’

(T. A. Wisse p. 58. 7 / Allen (1980: 227))

In the light of the basic facts above, the following two questions will arise concerning the historical development of preposition stranding in English: (i) Why was preposition stranding only possible in restricted contexts in OE?; (ii) Why did preposition stranding become more common in ME, appearing in *wh*-interrogatives, *wh*-relatives, passives, and topicalization? The remainder of this paper attempts to answer these questions within the recent framework of the minimalist program, by incorporating the model of cyclic linearization proposed by Fox and Pesetsky (2005).
3. Previous Studies

Before presenting a new analysis of the development of preposition stranding, this section reviews two previous studies of preposition stranding. Though both of them have some problems, their findings will prove to be beneficial to the analysis proposed below.

3.1. A Head-Complement Parameter Based Approach: Ohkado (1990)

Ohkado (1990) argues that the possibility of preposition stranding hinges on the values of the Head-Complement Parameter (cf. Chomsky (1986)) in VP and PP and proposes the condition summarized as in (9):

(9) Preposition stranding is possible iff the Head-Complement Parameter value in VP is non-distinct from that in PP.


On the basis of (9), Ohkado’s account for preposition stranding in OE goes as follows. First, the derivation of preposition stranding with a pronominal object as in (2b) and (3b) is schematized in (10):

(10) \[
\begin{array}{c}
\text{[VP[head-final] [PP[head-final] t\text{pronoun} P] V]} \\
\text{pronoun} \end{array}
\]

As is well known, OE was an OV language (van Kemenade (1987)), which indicates that VP had the Head-Complement Parameter value [head-final]. Since a preposition could follow its pronominal object as we saw in (2a) and (3a) above, PP could have the value [head-final] when it had a pronominal object. Therefore, preposition stranding was possible because both VP and PP had the same values (i.e. [head-final]), satisfying the condition in (9). Next, assuming that a relative clause is derived by the movement of a relative pronoun or an empty operator (cf. Chomsky (1977)), the derivation of preposition stranding in relative clauses like (4) is schematized in (11):

(11) a. \(pe\) relative clauses: \[
\begin{array}{c}
\text{[VP[head-final] [PP[unspecified] P t\text{OP}] V]} \\
\text{OP} \end{array}
\]

b. \(se\) (\(pe\)) relative clauses: \[
\begin{array}{c}
\text{[VP[head-final] [PP[head-initial] P t\text{se}] V]} \\
\text{se} \end{array}
\]

According to Ohkado (1990: 210), the PP in \(pe\) relative clauses had the value [unspecified] because its object was empty, and therefore, preposition stranding was possible as in (11a), with the value in VP non-distinct from that in PP. Meanwhile, the values were distinct between VP and PP in \(se\) (\(pe\)) relative clauses, so that preposition stranding was not allowed as in (11b).
It is generally known that English underwent a word order change from OV to VO in ME. Moreover, according to Nakao (1972: 388–389), the word order of a preposition and its object (i.e. P-NP) was scarcely inverted in ME, except when prosodic factors were at work. These facts indicate that both VP and PP came to have the same Head-Complement Parameter values (i.e. [head-initial]) in any context in ME. This is why the possibility of preposition stranding became greatly expanded, as illustrated in (5)–(8).

It is true that the condition in (9) adequately characterizes the historical development of preposition stranding, but it is not clear why the non-distinctness of the Head-Complement Parameter values in VP and PP makes preposition stranding possible. Furthermore, the explanation for preposition stranding in be relative clauses in (11a) rests on the mere stipulation that PP with an empty operator has the value [unspecified]. It will be shown in section 4 that the cyclic linearization approach does not suffer from these problems, while capturing the relevance of word order for the possibility of preposition stranding.


As observed in van Riemsdijk (1978), while preposition stranding is rather free in PE, it is possible only in restricted contexts in other Germanic languages. There are a number of approaches which attempt to account for such cross-linguistic variation of preposition stranding by postulating a parameter concerning PP. Adopting Chomsky’s (1973) subjacency condition, van Riemsdijk (1978) argues that PP is a bounding node in all languages and the relevant parameter is whether it has an escape hatch position (i.e. [Spec, PP]) or not. Recently, van Riemsdijk’s (1978) approach has been revived in terms of the minimalist program by Abels (2003). The relevant parameter Abels postulates is whether P is a phase head or not. He argues that P is a phase head in Germanic languages where preposition stranding is not allowed, whereas P is not a phase head in languages like PE where preposition stranding is rather free. Furthermore, in accounting for preposition stranding, he assumes the Anti-locality Constraint, as schematized in (12):

\[
(12) \text{Anti-locality Constraint: } [X_{P} \ Y_{P} [X_{X} \ X_{t_{Y_{P}}}] \quad (Abels \ (2003: \ 12))]
\]

This constraint prohibits the movement from the complement position to the specifier position within the same projection. The parameter on the phasehood of PP and the Anti-locality Constraint make it possible to account for the cross-linguistic difference of preposition stranding. In languages where
P is a phase head, the object of the preposition has to stop off at [Spec, PP] when it moves out of PP. However, such movement is ruled out by the Anti-locality Constraint in (12). Therefore, preposition stranding is not allowed in those languages, as shown in (13a) below. In contrast, in languages where P is not a phase head, preposition stranding is possible because the object of the preposition can move out of PP without passing through [Spec, PP], as shown in (13b):

(13) a. \[
[CP C [TP Subj. [T T [vP v [VP V [PP wh [P P twh]]]]]]]
\]

b. \[
[CP wh [C C [TP Subj. [T T [vP twh [vP v [VP V [PP P twh]]]]]]]]
\]

One of the key notions in Abels’ (2003) approach, the Anti-locality Constraint in (12), has received support from a number of studies, which show that it allows a unified explanation of various phenomena in English and other languages (see Grohmann (2003) and Takita (2009) among others). On the other hand, the other key notion, the parameter on the phasehood of PP, simply restates the fact that preposition stranding is possible in some languages but not in others. Therefore, unless independent evidence is provided for P as a (non-)phase head in the relevant languages, it would be theoretically desirable to assume that PP is a phase in all languages, along the lines of van Riemsdijk’s (1978) original proposal. Moreover, Abels’ (2003) approach is not sufficient to deal with preposition stranding in individual languages. Especially relevant is the situation in OE, where preposition stranding was allowed only in restricted contexts. It is not clear how his approach can account for the fact of OE that preposition stranding was allowed in þe relative clauses, but not in se (þe) relative clauses, for example. Therefore, retaining the benefits of the Anti-locality Constraint in (12), the remainder of this paper develops a new analysis of preposition stranding that dispenses with the parameter on the phasehood of PP, by building it upon the model of cyclic linearization proposed by Fox and Pesetsky (2005).

5 A similar problem arises in van Riemsdijk’s (1978) approach. The parameter he postulates (i.e., whether PP has an escape hatch position or not) is also a restatement of the fact that preposition stranding is possible in some languages but not in others.
4. Analysis

4.1. Cyclic Linearization

Fox and Pesetsky (2005) attempt to derive successive cyclicity without recourse to the Phase Impenetrability Condition (PIC) (cf. Chomsky (2000, 2001)), arguing that successive-cyclic movement is forced by linearization of syntactic structure that applies in the mapping from syntax to phonology. The gist of their proposal is summarized as follows:

(14) a. Each time Spell-out applies at a Spell-out domain, it yields a linearization of the constituents of the domain (i.e., their relative order is fixed).

b. Information about linearization, once established at a given Spell-out domain, is never deleted in the course of a derivation.

The list of Spell-out domains includes at least CP and vP/VP. According to (14), the derivation converges unless the set of information about linearization which is established at each Spell-out domain contains an ordering contradiction.

Let us see how the necessity of successive-cyclic movement follows from this cyclic linearization model. Consider the non-successive-cyclic derivation in (15), in which to whom moves directly to the embedded [Spec, CP] without first stopping off at the embedded [Spec, vP]:

(15) *[CP To whom will he [vP say [CP that Mary [vP gave the book]]]?]

a. embedded vP: gave < the book < to whom

b. embedded CP: to whom < that < Mary < embedded vP (gave the book) (=gave)

In the embedded vP, Spell-out applies to yield the linearization in which gave precedes the book and the book precedes to whom, as shown in (15a). When the derivation reaches the embedded CP, the linearization is established in which to whom precedes that, that precedes Mary, and Mary precedes vP, more precisely, its first constituent gave, as shown in (15b). This derivation is ruled out because the relative ordering between to whom and gave is contradicted at the two Spell-out domains. Next, consider the successive-cyclic derivation in (16), in which wh-movement proceeds through the specifiers of each Spell-out domain:
In the embedded vP, to whom moves to [Spec, vP] revising the word order of vP, and Spell-out applies to yield the linearization of its constituents, as shown in (16a). Then, to whom stops off at the embedded [Spec, CP] and the matrix [Spec, vP] on its way to the matrix [Spec, CP], yielding the set of linearization information in (16b–d). This derivation converges because there is no ordering contradiction in (16); especially, the relative ordering between to whom and gave is kept unchanged in the course of the derivation. If this is correct, successive cyclicity is derived not from the PIC, but from the cyclic linearization model as formulated in (14).

Before proceeding, let us mention two consequences of this cyclic linearization model which will be relevant for the subsequent discussion on preposition stranding. One is that movement out of a Spell-out domain does not have to stop off at its specifier unless it causes an ordering contradiction, contrary to what the PIC dictates. The other is that because cyclic linearization is a mechanism working in the mapping between syntax and phonology, it does not apply to constituents with no phonological content.

4.2. Preposition Stranding in OE

This section offers an explanation for the distribution of preposition stranding in OE in terms of the cyclic linearization approach. Recall the discussion in section 3.1. According to Amano (1982) and Ohkado (1990), preposition stranding is possible iff the Head-Complement Parameter values are non-distinct between VP and PP. Assuming that PP is a Spell-out domain (see Sabbagh (2007) for arguments based on rightward movement), it can be argued that an object may move out of PP without causing an ordering contradiction if VP and PP have the same Head-Complement Parameter values, thereby resulting in the relevance of word order for the possibility of preposition stranding under the cyclic linearization approach. Consider
first the derivation of preposition stranding with pronominal objects in (17), where P follows Pron. (pronominal object) within PP, a possibility which was available only for pronominal objects as exemplified in (2a) and (3a).

(17) Preposition stranding with pronominal objects (see (2b) and (3b))

\[
[v_P \text{ Pron.} \ [v_P \ [v_P \text{Pron.} \ [v_P \text{V} \ [v_P \text{V}}
\]

\[
a. \ PP: \text{Pron.} < P \\
b. \ v_P: \text{Pron.} < PP (=P) < V < v
\]

When Spell-out applies at the level of PP, it is established that Pron. precedes P, as shown in (17a). Then, at the level of vP, Pron. moves to [Spec, vP], yielding the linearization in which Pron. precedes P, the first constituent of PP with phonological content, as shown in (17b). Therefore, preposition stranding with pronominal objects was possible, inducing no ordering contradiction. On the other hand, if a full NP object moves out of PP (by topicalization, or scrambling of the sort observed in Germanic languages), it would cause an ordering contradiction, as shown in (18):

(18) *Preposition stranding with full NP objects

\[
[v_P \text{NP} \ [v_P \ [v_P \text{P NP} \ [v_P \text{V} \ [v_P \text{V}}
\]

\[
a. \ PP: \text{P} < \text{NP} \\
b. \ v_P: \text{NP} < PP (=P) < V < v
\]

Note that, because of the Anti-locality Constraint in (12), NP cannot move to [Spec, PP] to revise the order P-NP before Spell-out. Therefore, the linearization produced at the level of vP does contradict that produced at the level of PP. This is how preposition stranding with full NP objects was excluded in OE.  

Now let us turn to preposition stranding in be relative clauses exemplified in (4a). The derivation is shown in (19), which involves the movement of OP (empty operator) directly to [Spec, CP]:

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6. One might wonder why P could follow its pronominal object, but not its full NP object within PP in OE. This is the observed fact of OE (see (2a) and (3a)) that can be traced back to the historical development of adpositions in which they were postpositions in Proto-Indo-European (Lehman (1974: 234)), and they were still postpositional when their objects were pronouns in Proto-Germanic (Hopper (1975: 41)). Therefore, the possibility of head-final P in the case of pronominal objects would be a residue of prehistoric OE (which disappeared in ME; see section 3.1).
Preposition stranding in *pe relative clauses (see (4a))

\[
[\text{CP OP [CP pe [TP Subj. [vP [vP P tOP] V] v]} T]]
\]

a. PP: \(P < \emptyset \text{P}\)
b. vP: \(\emptyset \text{P} (=P) < V < v\)
c. CP: \(\emptyset \text{P} < pe < \text{Subj.} < \text{vP} (=P) < T\)

Since an empty operator does not have phonological content, it does not enter into cyclic linearization, so that it does not cause an ordering contradiction if it moves out of PP without stopping off at the specifiers of Spell-out domains. This is why preposition stranding was possible in *pe relative clauses in OE.

We are now in a position to see how preposition stranding in *se (\(\text{pe}\)) relative clauses is ruled out.

*Preposition stranding in *se (\(\text{pe}\)) relative clauses (see (4b, c))

\[
[\text{CP se [CP (pe) [TP Subj. [vP tse [vP P tse] V] v]} T]]
\]

a. PP: \(P < se\)
b. vP: \(se < PP (=P) < V < v\)
c. CP: \(se < (pe <) \text{Subj.} < \text{vP} (=P) < T\)

As shown in (20), the relative pronoun *se moves to [Spec, CP] via [Spec, vP]. Due to the Anti-locality Constraint in (12), it cannot stop off at [Spec, PP] to revise the order P-NP at the level of PP. As is obvious, the relative ordering between *se and P is contradicted in PP and vP/CP. Therefore, preposition stranding in *se (\(\text{pe}\)) relative clauses was not allowed in OE.

To sum up, it has been demonstrated in this subsection that the cyclic linearization approach correctly predicts that preposition stranding was possible only with pronominal objects and in *pe relative clauses in OE; the two contexts had in common the property of causing no ordering contradiction.

Before closing this subsection, we should mention the fact that preposition stranding in passives was impossible in OE; that is, so-called prepositional passives, which are illustrated by the PE example in (21), were not allowed in OE:

(21) This book, has been talked about \(ti\).

As it stands, the cyclic linearization approach would predict that preposi-

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7 This account assumes that P preceded the relative pronoun *se within PP in OE. This would be supported by the fact that the demonstrative *se, which was isomorphic to (and a source of) the relative pronoun, always followed P, unlike personal or locative pronouns (cf. Allen (1980)).
tional passives were allowed with pronominal objects, as they are derived in the manner of (17), contrary to fact. This paper follows van Kemenade (1987) in assuming that preposition stranding in passives was disallowed in OE because inherent Case assigned by P cannot be absorbed by the passive morpheme: if the object moves to [Spec, TP] out of PP, it would cause Case conflict between inherent Case assigned by P and nominative Case assigned by T. Therefore, the absence of prepositional passives in OE would be explained independently, so that it does not pose a problem for the cyclic linearization approach to preposition stranding.

4.3. Preposition Stranding in ME

There are two factors which contributed to the historical development of preposition stranding in ME. One is that the Head-Complement Parameter values became [head-initial] in VP and PP, including the case of PP with pronominal objects (see section 3.1). The other is the change of Case assignment by P. According to van Kemenade (1987), P assigned inherent Case in OE, while V and P came to assign the same kind of Case in ME, i.e. structural accusative Case. This paper takes it to mean that P assigns accusative Case in the same way as V does from ME onwards: prepositional phrases have the following structure parallel to v*P, as schematized in (22):8

\[ [p_p P [p_P P NP]] \]

Chomsky (2007, 2008) argues that uninterpretable φ-features are inherited from a phase head to the non-phasal head of its complement, which makes it possible that T and V assign nominative and accusative Case via Agree, respectively. By the same reasoning, P acquires the ability of assigning accusative Case via Agree by inheriting uninterpretable φ-features from the phase head p. This means that there was a structural change of prepositional phrases from PP to pP in ME, which was closely related to the loss of inherent Case assignment by P.9 If this is correct, it is natural to as-

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8 It is standardly assumed that inherent Case is assigned from a head to its complement based on θ-role assignment (cf. Chomsky (1986: 194)), so prepositional phrases in OE did not have the split projections as in (22).

9 There have been a number of studies suggesting that prepositional phrases are pP in PE (Abels (2003), Matsubara (2000), and Svenonius (2008, 2010) among others). Matsubara (2000) adduces the possibility of prepositional subjects in PE (e.g., *Under the bed is a nice place to hide*) in order to argue for the pP analysis. Then, the development of prepositional subjects might provide a clue to determining when pP emerged in the history of English. I have investigated the distribution of prepositional subjects by employing The York-Toronto-Helsinki Parsed Corpus of Old English Prose...
sume that \( pP \) counts as a Spell-out domain from ME onwards.\(^{10} \)

With this in mind, consider the following derivation of preposition stranding in \( wh \)-relatives, \( wh \)-interrogatives, and topicalization, which became available in ME (Obj. = \( wh \)-phrase or topic):

(23) Preposition stranding in \( wh \)-relative clauses, \( wh \)-interrogative clauses, and topicalization (see (5), (6), and (7))

\[
\begin{align*}
\text{CP} & \quad \text{Obj.} \quad [C^\prime C \quad \text{TP} \quad \text{Subj.} \quad [T^\prime T \quad \text{tObj.} \quad [V^\prime V \quad \text{tP} \quad \text{Obj.} \quad [P^\prime P \quad pP \\
\text{PP} & \quad \text{tObj.}]]]]]]]]]]])
\end{align*}
\]

\begin{itemize}
\item a. \( pP: \text{Obj.} < p < \text{PP} (=P) \)
\item b. \( vP: \text{Obj.} < v < V < pP \)
\item c. \( \text{CP: Obj.} < C < \text{Subj.} < T < vP \)
\end{itemize}

In (23), Obj. first moves up to [Spec, \( pP \)] to revise the ordering between \( P \) and Obj., yielding the linearization in which Obj. precedes P. It should be noticed that this movement does not violate the Anti-locality Constraint in (12) because there are projections of \( p \) which provide uninterpretable \( \phi \)-features responsible for accusative Case assignment by P. Then, Obj. moves up to [Spec, CP] via [Spec, \( vP \)], so the derivation converges because there is no ordering contradiction with Obj. preceding all the constituents of each Spell-out domain including P.

Let us turn to preposition stranding in passives, which also became available in ME. Following Chomsky (2001), this paper assumes that passive (and unaccusative) \( vP \) is not a Spell-out domain.

This paper therefore assumes that prepositional phrases as a whole, whether they are \( PP \) or \( pP \), count as a Spell-out domain. Then, one might wonder what prepositional phrases have in common with CP and/or \( vP \) to be qualified as a Spell-out domain. It should be mentioned in this connection that there have been some studies which draw a parallelism between CP and PP. For example, based on the hypothesis that functional projections are “extended” projections of lexical heads they dominate, Grimshaw (2005) claims that just as CP is the largest extended projection of V, so PP is the largest extended projection of N. Based on this claim, it may be suggested that (in addition to \( vP \)) the largest extended projections of N and V count as Spell-out domains. In the case of prepositional phrases, \( pP \) is a Spell-out domain if they have split projections as in (22); otherwise, PP is a Spell-out domain. See also Emonds (1985) for related discussion.
(24) Preposition stranding in passives (see (8))
\[
[CP C [TP NP [\_T \_T [\_vP v [VP V [\_pP \_tNP [\_pP p \_PP p \_tNP] \_tPP] \_tVP] \_tTP] \_tCP] \_tCP]
\]

\[a. \quad pP: NP < p < PP (=P)\]
\[b. \quad CP: C < NP < T < v < V < pP\]

In (24), NP first moves up to [Spec, \_pP] to revise the ordering between P and NP, yielding the linearization in which NP precedes P. Again, this movement does not violate the Anti-locality Constraint in (12).\(^{11}\) Then, NP moves up to [Spec, TP], which causes no ordering contradiction with NP preceding P throughout the derivation.\(^{12}\)

To sum up, the possibility of preposition stranding was expanded in ME due to the change of Case assignment by P: the loss of inherent Case assignment led to the change of the categorial status of prepositional phrases, which in turn made possible preposition stranding in various contexts without causing an ordering contradiction.\(^{13}\)

\(^{11}\) The movement of NP to [Spec, \_pP] in (24), which serves to revise the ordering between P and NP, is not motivated by Case checking, but it is possible since it does not violate the Anti-locality Constraint. See Bošković (2007) for a mechanism of successive-cyclic movement without feature checking in intermediate positions.

\(^{12}\) Alternatively, the rise of preposition stranding in passives could be accounted for by updating van Kemenade’s (1987) analysis based on reanalysis, an operation which combines V and P into a complex verb. According to her, reanalysis became available in ME because P came to assign structural accusative Case, and the word order change from OV to VO led to the linear adjacency between V and P. When the reanalyzed structure in (i) is passivized, the passive morpheme absorbs structural accusative Case assigned by the complex verb, which in turn allows the movement of NP to [Spec, TP] for nominative Case assignment.

\[
(i) \quad [VP V [PP P NP]] \rightarrow [VP [V V+P] NP]
\]

Recasting this analysis within the framework of the minimalist program adopted here, it might be suggested that the passive morpheme somehow inactivates uninterpretable \_p-features of p responsible for accusative Case assignment by P, so that pP loses the status as a Spell-out domain. This would make it possible for the prepositional object to move directly to [Spec, TP] without causing an ordering contradiction. I will leave the implementation of this possibility for future research.

\(^{13}\) Although the same values of the Head-Complement Parameter in VP and PP lead to the possibility of preposition stranding with no ordering contradiction (see (17), (23), and (24)), the headedness of VP is not relevant for the present analysis of preposition stranding, contrary to Ohkado (1990) (see section 3.1). Instead, it relies crucially on the headedness (and structure) of prepositional phrases, which in turn yields empirical differences from the Head-Complement Parameter based approach. A case in point is the derivation of preposition stranding in \_pe-relative clauses in (19) where P is head-initial and V is head-final; the fact that it is possible lends empirical support to the cyclic linearization approach, and argues against the Head-Complement Parameter based approach.
5. Conclusion

This paper has attempted to account for the historical development of preposition stranding in English within the recent framework of the minimalist program by incorporating the model of cyclic linearization proposed by Fox and Pesetsky (2005). It has been argued that preposition stranding is possible as long as there is no ordering contradiction between P and its object, and the cyclic linearization approach allows us to provide a principled explanation for the facts that preposition stranding was only possible in restricted contexts in OE, and that its range of use was greatly expanded in the course of ME.

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**Corpora**


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