THE DEVELOPMENT OF THE DETERMINER SYSTEM IN THE HISTORY OF ENGLISH

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This paper attempts to clarify the development of the determiner system by examining the distribution of elements within noun phrases in the history of English, arguing that their word order patterns are basically the same in Present-day English and early English, except possessive pronouns, which have been grammaticalized into a central determiner. The unique behavior of possessive pronouns was responsible for a variety of word order patterns and the cooccurrence of articles/demonstratives and possessive pronouns in early English: the base-generated position of possessive pronouns was Spec-NumP in Old English and the head of NumP in Middle English and Early Modern English. Finally, grammaticalization of possessive pronouns in Late Modern English led to the establishment of the determiner system as in Present-day English.*

Keywords: *determiner system, double determiner, grammaticalization, noun phrase, possessive pronoun*

1. Introduction¹

This paper aims to explore the development of the determiner system by investigating the word order of elements within noun phrases in the history

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¹ Here are the historical periods of English standardly assumed: Old English (OE: 450–1100), Middle English (ME: 1100–1500), Early Modern English (EModE: 1500–1700), Late Modern English (LModE: 1700–1900), and Present-day English (PE: 1900–). This paper also uses the term “early English” to refer to all the early stages of English except PE.

of English.² In the tradition of English grammar, the determiner system in PE has been characterized by dividing determiners into the following three classes.

Table 1

Predeterminer:	e.g. <i>all, both, half</i>
Central determiner:	e.g. articles, demonstratives, possessive pronouns, <i>any, every, some</i>
Postdeterminer:	e.g. cardinal and ordinal numerals, <i>few, many</i>

(cf. Quirk et al. (1985: 253))

Quirk et al. (1985) state that the three classes of determiners are distinguished on the basis of their positions in relation to one another, and adjectives appear between determiners and the head noun within noun phrases. Thus, the positions of elements within noun phrases such as articles, demonstratives, possessive pronouns, quantifiers, adjectives and so on are fixed in PE, and some of them are not allowed to cooccur within the same noun phrase. As illustrated in (1), the word order of the three classes of determiners is rigid: predeterminers precede central determiners, which in turn precede postdeterminers. Moreover, the examples in (2) show that adjectives must follow all the classes of determiners, and articles, demonstratives and possessive pronouns cannot cooccur within the same noun phrase.

- (1) a. *those all trouble (cf. all those trouble)
 b. *five the all boys (cf. all the five boys)
 c. *two both students (cf. both two students)

(cf. Quirk et al. (1985: 253))

- (2) a. *good the king (cf. the good king)
 b. *old my friends (cf. my old friends)
 c. *that his book / *his that book

It has often been said that the word order in early English was rather free because of the rich system of case endings and other inflectional morphology, so word order patterns like (1) and (2) were once possible. A related question is whether the determiner system in early English was different

² Our focus here is on prenominal elements, excluding postnominal elements. Genitive full noun phrases are also beyond the scope of this paper, because they have undergone a complex path of development and deserve to be discussed in an independent paper (Allen (2003)). But this paper deals with possessive pronouns, which are usually included in the determiner system and show an interesting change in the history of English.

from that in PE, and if so, how different it is between PE and early English.

As for the development of the determiner system, there have been some studies arguing that there was no functional category D in early English, and that it was introduced at some time in the history of English (Yamamoto (1989) and Osawa (2000)). For the word order of elements within noun phrases in early English, some linguists argue that they were free to appear in any position within noun phrases (Carlson (1978), Lightfoot (1979) and Yamamoto (1989)), while others argue that they exhibit several word order patterns, with the implication that their positions within noun phrases were fixed to some extent (Mitchell (1985) and Alexiadou (2004)). Based on these arguments, it might be assumed that in early English, the word order of elements within noun phrases was free, or at least, they showed freer distribution than in PE. As we will see, however, there is empirical evidence to argue against this widely accepted assumption: the data collected from historical corpora suggest that the distribution of elements within noun phrases in early English was basically the same as in PE, except that of possessive pronouns.

The purpose of this paper is to provide a systematic investigation of the distribution of elements within noun phrases, namely quantifiers, articles/demonstratives, possessive pronouns and adjectives, in the history of English, and to account for the development of the determiner system within the framework of generative grammar. The results of this investigation will show that the word order of elements within noun phrases was almost fixed in early English; the key difference between PE and early English is whether or not articles/demonstratives and possessive pronouns can cooccur within the same noun phrase. The fact that they do not cooccur in PE suggests that possessive pronouns compete with articles/demonstratives for the same position in noun phrases, which was not the case in early English. This difference is argued to be closely related to the grammaticalization of possessive pronouns into a central determiner.

The organization of this paper is as follows. Section 2 presents the data on the distribution of elements within noun phrases, which have been collected from *The York-Toronto-Helsinki Parsed Corpus of Old English* (henceforth, YCOE), *The Second Edition of the Penn-Helsinki Parsed Corpus of Middle English* (henceforth, PPCME2), *The Penn-Helsinki Parsed Corpus of Early Modern English* (henceforth, PPCME) and *The Collins Wordbanks Online* (henceforth, Collins). This reveals that the syntactic status of possessive pronouns in early English was different from that in

PE. Section 3 briefly reviews some previous studies on the distribution of elements within noun phrases in early English, pointing out their problems. Section 4 attempts to account for the change in the distribution of possessive pronouns in the history of English. Section 5 is the conclusion of this paper.

2. Data

This section investigates the distribution of quantifiers, articles/demonstratives, possessive pronouns and adjectives within noun phrases by making use of the four corpora just mentioned. It will be found that their behavior in early English was basically the same as in PE, except that of possessive pronouns.

2.1. Quantifiers

This section focuses on the behavior of quantifiers, *all*, *both*, *half*, *every*, *any*, *some*, *many* and *few*. As discussed above, these quantifiers can be classified as follows in terms of their positions within noun phrases.

Table 2

Predeterminer	: <i>all</i> , <i>both</i> , <i>half</i>
Central determiner	: <i>every</i> , <i>any</i> , <i>some</i>
Postdeterminer	: <i>many</i> , <i>few</i>

The word order patterns to be examined in YCOE, PPCME2, PPCME and Collins are given in (3).

- (3) a. Q - Art/Dem - N
b. Art/Dem - Q - N

Q = quantifier, Art/Dem = article or demonstrative, N = noun

As shown in (3), we investigate the positions of quantifiers in relation to articles/ demonstratives which are classified as central determiners. Note that possessive pronouns are excluded in (3) because they did not behave as a central determiner in early English, as we will see in section 2.2. Moreover, it is generally assumed that articles did not exist in OE (the definite article later developed from demonstratives and the indefinite article from the numeral *one*; Fischer and Wurff (2006: 116)), so the relevant data in OE only involve demonstratives as elements of Art/Dem.

First, let us consider how the predeterminers, *all*, *both* and *half*, are positioned within noun phrases. The results of the investigation based on the

four corpora are shown in Table 3.

Table 3

ALL	<i>All</i> - Art/Dem - N	Art/Dem - <i>All</i> - N	Total
YCOE	1927 (99.85%)	3 (0.15%)	1930
PPCME2	2056 (100%)	0 (0%)	2056
PPCEME	2048 (100%)	0 (0%)	2048
Collins	21014 (99.94%)	13 (0.06%)	21027
BOTH	<i>Both</i> - Art/Dem - N	Art/Dem - <i>Both</i> - N	Total
YCOE	9 (100%)	0 (0%)	9
PPCME2	11 (100%)	0 (0%)	11
PPCEME	69 (97.18%)	2 (2.82%)	71
Collins	1795 (99.67%)	6 (0.33%)	1801
HALF	<i>Half</i> - Art/Dem - N	Art/Dem - <i>Half</i> - N	Total
YCOE	11 (52.38%)	10 (47.62%)	21
PPCME2	37 (80.43%)	9 (19.57%)	46
PPCEME	173 (83.57%)	34 (16.43%)	207
Collins	3926 (59.71%)	2649 (40.29%)	6575

It is observed from Table 3 that the distribution of *all* and *both* in YCOE, PPCME2, PPCEME, and Collins shows a strong tendency for them to precede central determiners within noun phrases. As for these two quantifiers, there seems to be no difference in their distribution among OE, ME, EModE and PE: they have been predeterminers throughout the history of English.

However, an interesting difference is observed between the distribution of *all* and *both*, on the one hand, and that of *half*, on the other: in contrast to *all* and *both*, *half* can be used as a postdeterminer as well as a predeterminer. In this respect, the ratio of the predeterminer use to the postdeterminer use of *half* is similar between PE and early English, though it seems that the predeterminer use was predominant in ME and EModE. Alongside *all* and *both*, *half* is generally classified as a predeterminer in PE (Quirk et al. (1985: 253)), but Table 3 indicates that it is also frequently used as a postdeterminer in PE. Given the results in Table 3, it is reasonable to assume that *half* has been used both as a predeterminer and as a postdeterminer since the OE period.³

³ Amano (2007) argues that *half* is being grammaticalized into a postdeterminer in PE.

Second, the distribution of the central determiners, *every*,⁴ *any* and *some* in the historical corpora is also basically the same as that observed in PE, as shown in Table 4.

Table 4

EVERY	<i>Every</i> - Art/Dem - N	Art/Dem - <i>Every</i> - N	<i>Every</i> - N	Total
YCOE	0 (- %)	0 (- %)	0 (- %)	0
PPCME2	0 (0%)	0 (0%)	214 (100%)	214
PPCEME	4 (0.33%)	0 (%)	1207 (99.67%)	1211
Collins	2 (0.01%)	12 (0.06%)	20485 (99.93%)	20499
ANY	<i>Any</i> - Art/Dem - N	Art/Dem - <i>Any</i> - N	<i>Any</i> - N	Total
YCOE	1 (0.1%)	0 (0%)	1007 (99.9%)	1008
PPCME2	0 (0%)	0 (0%)	987 (100%)	987
PPCEME	54 (1.12%)	0 (0%)	4761 (98.88%)	4815
Collins	20 (0.06%)	24 (0.06%)	35236 (99.88%)	35280
SOME	<i>Some</i> - Art/Dem - N	Art/Dem - <i>Some</i> - N	<i>Some</i> - N	Total
YCOE	37 (1.55%)	0 (0%)	2357 (98.45%)	2394
PPCME2	0 (0%)	1 (0.18%)	557 (99.82%)	558
PPCEME	1 (0.04%)	1 (0.04%)	2232 (99.92%)	2234
Collins	70 (0.17%)	36 (0.09%)	41587 (99.74%)	41693

In all the corpora, almost all of the attested examples fall into the Q-N pattern and there are few examples of the other two patterns. This suggests that *every*, *any* and *some* rarely occur with other central determiners throughout the history of English, indicating that they have been central determiners since the OE period.

Finally, let us examine the distribution of the postdeterminers, *many* and *few*, within noun phrases. Consider the results of the investigation based on the four corpora in Table 5.

⁴ According to the *Oxford English Dictionary*, *every* first appeared around the end of the 12th century. Indeed, no examples of noun phrases with *every* are found in YCOE, as shown in Table 4.

Table 5

MANY	<i>Many</i> - Art/Dem - N	Art/Dem - <i>Many</i> - N	Total
YCOE	0 (0%)	9 (100%)	9
PPCME2	69 (94.52%)	4 (5.48%)	73
PPCEME	36 (59.02%)	25 (40.98%)	61
Collins	253 (23.56%)	821 (76.44%)	1074
FEW	<i>Few</i> - Art/Dem - N	Art/Dem - <i>Few</i> - N	Total
YCOE	1 (11.11%)	8 (88.89%)	9
PPCME2	0 (0%)	24 (100%)	24
PPCEME	0 (0%)	93 (100%)	93
Collins	6 (0.05%)	12634 (99.95%)	12640

The frequency of *few* preceding central determiners is very small, accounting for 1 among 9 examples in YCOE and 6 among 12640 examples in Collins, respectively. As for *many*, although 69 examples and 36 examples of *Many*-Art/Dem-N are attested in PPCME2 and PPCEME, respectively, almost all of these examples involve the indefinite article *a(n)*: only one of the 36 examples attested in PPCEME involves the definite article *the*. Similarly, 253 examples of *Many*-Art/Dem-N are attested in Collins, but as many as 225 examples involve the indefinite article *a(n)*. Therefore, it seems to be the case that throughout the history of English, *many* can be used both as a predeterminer and as a postdeterminer, and the former use is almost restricted to examples in which it is followed by the indefinite article *a(n)*.⁵

So far, we have observed the distribution of quantifiers which are classified into predeterminers, central determiners and postdeterminers in the history of English. What we have found is that at least for the kinds of quantifiers examined here, their distribution is basically the same in PE and early English. As will be discussed in section 3, this fact runs counter to the observations in previous studies that elements could be freely ordered within noun phrases in early English. On the contrary, the results of the investigation in this section suggest that the word order of quantifiers within noun

⁵ Alternatively, Huddleston (2002) suggests that *many* combines with the indefinite article to form a complex determiner in PE. Note that the fact that *Many*-Art/Dem-N is not found in YCOE is due to the absence of the indefinite article in OE; see Nakao (1972) for the observation that the indefinite article began to appear in the beginning of the 13th century.

phrases has been fixed throughout the history of English, which will lead us to assume that the determiner system as in Table 1 was already established in OE, at least for quantifiers.

2.2. Articles/Demonstratives, Possessive Pronouns and Adjectives

One of the most remarkable properties of noun phrases in early English is the cooccurrence of articles/demonstratives and possessive pronouns, constituting what are widely known as double determiners in the literature. According to Carlson (1978), Lightfoot (1979) and Yamamoto (1989), another property is that adjectives could precede articles/demonstratives and possessive pronouns in early English. This section investigates the distribution of articles/demonstratives, possessive pronouns and adjectives, in order to check the validity of these observations on noun phrases in early English.

First, let us examine whether adjectives could precede articles/demonstratives and possessive pronouns within noun phrases in early English. For this purpose, the word order patterns in (4) have been searched in YCOE, PPCME2 and PPCEME, yielding the results summarized in Table 6.

- (4) a. Art/Dem - Adj - N
 b. Adj - Art/Dem - N
 c. Poss - Adj - N
 d. Adj - Poss - N
 Adj = adjective, Poss = possessive pronoun

Table 6

	Art/Dem - Adj - N	Adj - Art/Dem - N	Total
YCOE	20306 (99.65%)	71 (3.5%)	20377
PPCME2	11928 (98.79%)	146 (1.21%)	12074
PPCEME	24960 (97.6%)	613 (2.4%)	25573
	Poss - Adj - N	Adj - Poss - N	Total
YCOE	3055 (99.16%)	26 (0.84%)	3081
PPCME2	3103 (99.97%)	1 (0.03%)	3104
PPCEME	5888 (99.76%)	14 (0.24%)	5902

In OE, ME and EModE, the patterns Art/Dem-Adj-N and Poss-Adj-N are the overwhelming majority, whereas there are just a few examples of the patterns Adj-Art/Dem-N and Adj-Poss-N. Therefore, it is concluded that adjectives in early English behaved like those in PE, normally following ar-

tics/demonstratives and possessive pronouns.⁶

Next, consider the case of double determiners where articles/demonstratives and possessive pronouns cooccur within the same noun phrase. The word order patterns in (5) have been searched in YCOE, PPCME2 and PPCME, yielding the results summarized in Table 7.

- (5) a. Art/Dem - Poss - N
b. Poss - Art/Dem - N

Table 7

	Art/Dem - Poss - N	Poss - Art/Dem - N	Total
YCOE	187 (74.5%)	64 (25.5%)	251
PPCME2	4 (80%)	1 (20%)	5
PPCME	129 (100%)	0 (0%)	129

What is noticeable here is that the number of examples with the order Poss-Art/Dem-N drastically decreases in ME, and finally no examples are attested in EModE. The order Art/Dem-Poss-N, on the other hand, is still frequently observed in EModE, and it survived until the beginning of the 20th century (see section 4). An immediate question here is why the order Poss-Art/Dem-N disappeared in the history of English earlier than the order Art/Dem-Poss-N. This can be attributed to the unique behavior of possessive pronouns in the history of English, which will be discussed at length in section 4.

Finally, consider the more complicated cases where articles/demonstratives, possessive pronouns and adjectives cooccur within the same noun phrase. Since very few examples are attested in YCOE, PPCME2 and PPCME where adjectives precede articles/demonstratives or possessive pronouns in the initial position of noun phrases (see Table 6), only the follow-

⁶ If we take a close look at the relevant data, it is observed that the kinds of adjectives that precede articles/demonstratives and possessive pronouns are highly restricted. In YCOE, such adjectives are limited to two kinds: one is the adjective equivalent to *middle* in PE and the other includes some adjectives ending with *-ward* which express directions. The adjectives attested in the order Adj-Art/Dem-N in PPCME2 and PPCME are also limited to two kinds: one is the adjective *such* and the other includes some adjectives modified by degree adverbs such as *so* and *too*. We will put aside these exceptional cases here, just noting that some particular property of the relevant kinds of adjectives would lead to their unusual positioning within noun phrases. See Matushansky (2002) for the analysis that *such* and adjectives modified by degree adverbs move to the initial position of noun phrases in PE.

ing word order patterns have been examined.

- (6) a. Art/Dem - Poss - Adj - N
 b. Art/Dem - Adj - Poss - N
 c. Poss - Art/Dem - Adj - N
 d. Poss - Adj - Art/Dem - N

Table 8 shows the distribution of (6a, b) in the three corpora where articles/demonstratives precede the other elements within noun phrases.

Table 8

	Art/Dem - Poss - Adj - N	Art/Dem - Adj - Poss - N	Total
YCOE	18 (45%)	22 (55%)	40
PPCME2	1 (50%)	1 (50%)	2
PPCEME	42 (76.36%)	13 (23.64%)	55

It seems that adjectives may precede or follow possessive pronouns when they follow articles/demonstratives, which is interesting because adjectives cannot precede possessive pronouns in the absence of articles/demonstratives, as we saw in Table 6. Below I provide examples of each pattern.

- (7) a. se *heora halga* bisceop
 the-Nom their holy-Nom bishop-Nom
 (coblick,LS_25_[MichaelMor[BiHom_17]]:201.88.2578:o2)
 b. this *my excellent* remedy (CLOWES-E2-P1,45.241:e2)
 (8) a. þam *ylcan his* nefan
 the-Dat same-Dat his nephew-Dat
 (cogregdC,GD_1_[C]:9.64.11.717:o2)
 b. the *honourable my* verie good mother
 (TBARRING-E2-P1,96.30:e2)

Table 9 shows the distribution of (6c, d) in the three corpora where possessive pronouns are in the leftmost position within noun phrases, preceding articles/demonstratives and adjectives.

Table 9

	Poss - Art/Dem - Adj - N	Poss - Adj - Art/Dem - N	Total
YCOE	241 (100%)	0 (0%)	241
PPCME2	0 (0%)	0 (0%)	0
PPCEME	0 (0%)	0 (0%)	0

We observed in Table 7 that only one example of the order Poss-Art/Dem-N is attested in ME and there are no such examples in EModE. Ta-

ble 9 shows that no examples are found in PPCME2 and PPCEME where possessive pronouns precede articles/demonstratives. However, it should be noticed that even in OE, the order Poss-Adj-Art/Dem-N is never attested, in contrast to as many as 241 examples of the order Poss-Art/Dem-Adj-N. Some of the latter examples are given in (9).

- (9) a. his þone readan gim
his that-Acc red-Acc jewel-Acc
(coblick,HomU_18_[BIHom_1]:9.125.121:o2)
- b. min þæt unrote mod
my that-Nom sad-Nom mind-Nom
(cogregd,GDPref_and_3_[c]:33.243.3444:o2)
- c. his þæt berhte leoht
his that-Acc bright-Acc light-Acc
(comart3,Mart_5_[Kotzor]*Ma26,A.17.485:o2)

2.3. Summary

In this section, we have investigated the distribution of quantifiers, articles/demonstratives, possessive pronouns and adjectives within noun phrases in the history of English. In section 2.1, we found that the distribution of quantifiers, which are classified into predeterminers, central determiners and postdeterminers, is basically the same in PE and early English. Based on the fact that their positions have been fixed throughout the history of English, it would follow that the determiner system as in Table 1 was already established in the OE period, at least for quantifiers.

Section 2.2 discussed the case of double determiners. We observed that the relative order between articles/demonstratives and possessive pronouns was free in OE, but it was only possible for articles/demonstratives to precede possessive pronouns in ME and EModE, as shown in Tables 7, 8 and 9. In cases where they cooccur with adjectives within the same noun phrase, the situation of the relative word order among these three elements is as follows: (i) adjectives cannot precede articles/demonstratives, (ii) adjectives cannot precede possessive pronouns in the absence of articles/demonstratives, (iii) adjectives can precede possessive pronouns and vice versa, when articles/demonstratives precede both of them, and (iv) when possessive pronouns precede articles/demonstratives in OE, adjectives cannot intervene between them. Then, the possible word order patterns of elements within noun phrases in early English can be summarized in (10).

- (10) a. Art/Dem - (Adj) - N
b. Poss - (Adj) - N

- c. Art/Dem - (Adj) - Poss - (Adj) - N
- d. Poss - Art/Dem - (Adj) - N (only in the OE period)

After reviewing previous studies in section 3, we will provide a syntactic analysis of the word order patterns in (10) in section 4, arguing that the variety of word order patterns of elements within noun phrases is attributed to the unique behavior of possessive pronouns in early English, with the rest of the determiner system unchanged in the history of English. Concretely, the base-generated position of possessive pronouns was lower than that of articles/demonstratives in early English, but possessive pronouns have been grammaticalized and finally become a central determiner by PE. This would imply that the structure of noun phrases has been constant in the history of English with articles/demonstratives occupying the head of DP as central determiners, thus arguing against Yamamoto’s (1989) and Osawa’s (2000) view that the functional category D was absent in early English.

3. Previous Studies on Noun Phrases in Early English

Before discussing the structure of noun phrases and the determiner system in early English, let us review some previous studies on noun phrases in early English. First of all, Fischer and Wurff (2006) summarize the determiner system and the positions of quantifiers in early English, as shown in Table 10.

Table 10

Changes in:	Old English	Middle English	Modern English
determiners: system	articles present in embryo- form, system developing	articles used for presen- tational and referential functions	also in use in predicative and generic contexts
double det.	present	rare	absent
quantifiers: position of	relatively free	more restricted	fairly fixed

(Fischer and Wurff (2006: 111))

They observe that double determiners had been found until early ME but soon thereafter died out in common usage, because possessive pronouns came to be treated as central determiners. They also note that the positions of quantifiers were relatively free within noun phrases in OE, and they grad-

- b. *sweet* my child (Love I ii 68)
(Yamamoto (1989: 3))
- (15) a. Hie þa lærde se hera halga bisceop
them then instructed that their holy bishop
'Then their holy bishop instructed them' (BIHom 201.24)
- b. *this his* distemper he is in now (Wives IV ii 28)
- (16) a. Ne cwæð he no ðin sio winestre hond, ac ðin
not said he no your that left hand but your
sio swiðre
that right
'He did not say 'your left hand, but 'your right''
(CP 389.20)
- b. mid hire þære yfelan sceonesse & facne
with her that evil suggestion treachery
'with her evil suggestion and treachery' (BIHom 5.1)
(ibid.: 3–5)

Yamamoto treats the examples in (16) differently from those in (14) and (15): while the adjectives, demonstratives and possessive pronouns occupy their base-generated positions in (14) and (15), the possessive pronouns in (16) are base-generated lower than the demonstratives and are then topicalized to yield the surface word order. According to her, examples like (14) and (15), which are disallowed in PE, were often observed in OE because the structure of noun phrases in early English was different from that in PE.

(ibid.: 5)

Adopting the ideas of Fukui (1986, 1988),⁷ Yamamoto assumes the structure of noun phrases in early English as in (17), where N projects up to the single-bar level and allows the iteration of that level with no specifier. In cases where possessive pronouns precede demonstratives, they are topicalized to adjoin to N', as illustrated in (17). She also argues that in early English, demonstratives and possessive pronouns were not distinct from adjectives generated at the N' level, and that the relative order of elements within noun phrases was determined by semantic and pragmatic factors. This is the reason why the examples in (14)–(16) were allowed in early English. According to her, the functional head D has emerged and the structure of noun phrases has become DP in the history of English, with the result that the word order of elements is fixed within noun phrases in PE.

In Table 6, it was observed that adjectives basically cannot be in the leftmost position when they cooccur with either demonstratives or possessive pronouns. This fact is incompatible with Yamamoto's observation that adjectives could freely precede demonstratives and possessive pronouns in early English. Moreover, her analysis predicts that elements within noun phrases are free to appear at the N' level and their relative word order depends on semantics and pragmatics. However, it does not properly capture the distributional facts in Tables 7, 8 and 9: the pattern Poss-Art/Dem-(Adj)-N died out much earlier than the pattern Art/Dem-(Adj)-Poss-(Adj)-N, and adjectives could only precede possessive pronouns in the presence of articles/demonstratives.

Fourth, Alexiadou (2004) discusses the development of possessive pronouns, adopting Cardinaletti's (1998) tripartite division of pronouns into clitic, weak and strong pronouns. She argues that possessive pronouns in PE are clitics whereas those in early English were either strong or weak adjectives, and that they are both base-generated in Spec-nP, giving the structure of noun phrases in (18).

- (18) a. [TopP [DP [D' clitic_i [AgrP Agr [n_P t_i [n' n NP]]]]]]
 b. [TopP [DP Dem [D' D [AgrP weak_j [Agr' Agr [n_P t_j [n' n NP]]]]]]]]
 c. [TopP [DP Dem [D D [AgrP [Agr' Agr [n_P strong [n' n NP]]]]]]]]
 (cf. Alexiadou (2004: 35))

According to her, clitic possessive pronouns move to the head of DP, weak

⁷ Fukui (1986, 1988) argues that lexical categories only project up to the single-bar level without closing off their projections whereas functional categories may project up to the double-bar level and have a specifier which closes off their projections.

possessive pronouns move to Spec-AgrP and strong possessive pronouns remain in Spec-nP. She argues that weak possessive pronouns move to Spec-TopP when they cooccur with adjectives within the same noun phrase, because adjectives occupy Spec-AgrP, competing with weak possessive pronouns for the same position.

Alexiadou's analysis seems to have some problems in explaining the word order patterns in (10), which are repeated here as (19).

- (19) a. Art/Dem - (Adj) - N
- b. Poss - (Adj) - N
- c. Art/Dem - (Adj) - Poss - (Adj) - N
- d. Poss - Art/Dem - (Adj) - N (only in the OE period)

First, according to her analysis, the order in (19d) is possible only when adjectives are present, but as many as 64 examples of the order Poss-Art/Dem-N are attested in YCOE, as we saw in Table 7. Second, her analysis predicts that the order Art/Dem-Poss-Adj-N is never attested because weak possessive pronouns obligatorily move to Spec-TopP whenever adjectives are present within the same noun phrase, contrary to the results of the investigation in Table 8. Third, like Yamamoto (1989), her analysis would yield the impossible order Adj-Poss-N, if adjectives cooccur with strong possessive pronouns which remain in Spec-nP.

In summary, there is a consensus among the previous studies reviewed above that articles/demonstratives and possessive pronouns could cooccur in early English, but the relative word order among articles/demonstratives, possessive pronouns and adjectives is controversial, and no previous studies can properly capture all the possible word order patterns attested in the investigation in section 2. Moreover, it was pointed out that there are serious empirical problems with the generative analyses of noun phrases in early English proposed by Yamamoto (1989) and Alexiadou (2004).

In the next section, based on the conclusion in section 2 that the word order of elements within noun phrases in early English is basically the same as in PE except for possessive pronouns, I argue that the variety of the word order patterns shown in (10) is attributed to the unique behavior of possessive pronouns in early English. There has been no emergence of the functional category D, nor change in the structure of noun phrases, in the history of English: the determiner system equivalent to that in PE was already established in OE, except for possessive pronouns, which were grammaticalized into a central determiner during LModE.

4. Explaining the Distribution of Elements within Noun Phrases

This section provides a syntactic analysis of the distribution of elements within noun phrases in the history of English. As observed in section 2, the distribution of quantifiers which are classified into predeterminers, central determiners and postdeterminers is basically the same in PE and early English, and the word order variations involving articles/ demonstratives, possessive pronouns and adjectives fall under the limited patterns shown in (10). I argue that the syntactic status of possessive pronouns in early English was different from that in PE, which made possible the cooccurrence of articles/demonstratives and possessive pronouns within the same noun phrase in early English. I also claim that possessive pronouns were grammaticalized into a central determiner during LModE, by examining the relevant data from *The Corpus of Late Modern English Texts* (henceforth, CLMET).

4.1. The Structure and Licensing of Noun Phrases

Before discussing the syntactic positions of elements within noun phrases, let us introduce the DP Hypothesis proposed by Abney (1987). He claims that the category of noun phrases is DP headed by the functional category D, which takes NP as its complement, as shown in (20).

However, it is widely argued that there must be some functional projection(s) between DP and NP (see Carstens (2000), Bernstein (2001) and Brugé (2002) among others). Following Bernstein (2001), I assume the structure of noun phrases as in (21), where Num(ber)P is located between DP and NP.

Another important assumption adopted here is that definite noun phrases have the [+definite] feature in the head of DP and they are licensed by having definite material in the local domain of D. Formulating this idea in terms of feature checking, I propose the following licensing condition on definite noun phrases, where elements that can license them include the definite article, demonstratives and possessive pronouns.

- (22) Definite noun phrases are licensed iff the [+definite] feature of D enters into a checking relation with its matching element(s) in a Spec-head and/or a head-head configuration.

This condition on definite noun phrases is reminiscent of Frisch's (1997) analysis of sentential negation, according to which NegP must be licensed by having a negative element in its head and/or its specifier position. Although he proposes the implementation of this idea in terms of Speas' (1994) Economy of Projection, his proposal can be recast by assuming that the [+Neg] feature of Neg must enter into a checking relation with its matching element(s). The checking of the [+Neg] feature is also established under a Spec-head and/or a head-head configuration: according to Frisch, NegP is licensed by having *ne* in Neg in early ME, by having *ne* in Neg and *not* in Spec-NegP in middle ME and by having *not* in Spec-NegP in late ME.⁸ Note that in Frisch's analysis there is no prohibition on having both licensing positions in NegP filled in the transitional period when sentential negation was expressed by *ne ... not*. As we will see in the next section, the same seems to be true of definite noun phrases: the order Poss-Art/Dem-(Adj)-N illustrates the case where both the head and specifier posi-

⁸ According to Roberts (1993) and Ishikawa (1995), *not* came to occupy the head of NegP during EModE.

d. Poss - Art/Dem - (Adj) - N (only in the OE period)

I argue that the key difference between PE and early English is the syntactic status of possessive pronouns, which in turn allows the cooccurrence of articles/demonstratives and possessive pronouns in early English. This implies that the position of articles/demonstratives is the same in PE and early English: they occupy the head of DP. On the other hand, given the possibility of (10c), I assume that possessive pronouns are base-generated in a lower position than articles/demonstratives in early English: the relevant position is Spec-NumP because possessive pronouns typically precede postdeterminers occupying the head of NumP within the same noun phrase, as shown in Table 11, followed by examples from each corpus.

Table 11

	Poss - PostD - N	PostD - Poss - N	Total
YCOE	209 (93.72%)	14 (6.28%)	223
PPCME2	120 (99.17%)	1 (0.83%)	121
PPCEME	173 (98.29%)	3 (1.71%)	176

- (25) a. heora twegen consulas
 their two consuls (coorosiū,Or_2:5.49.19.950:o2)
- b. yure many wordis
 your many words (CMBENRUL,19.668:m3)
- c. their many Crimes (BOETHPR-E3-P1,21.42:e3)

If the above arguments are on the right track, there will be two possible underlying structures of noun phrases that involve articles/demonstratives, possessive pronouns and adjectives, depending on whether adjectives are adjoined to NP or NumP, as shown in (26).⁹

⁹ Evidence that adjectives in early English can be adjoined either to NP or NumP comes from examples like (i) where they precede postdeterminers.

- (i) a. þam heaican tyn bebodum
 those high ten commands (colwstan2,æLet_3_[Wulfstan_2]:145.212:o3)
- b. unsmerigne healfne cyse
 not-fatty half cheese (colaece,Lch_II_[2]:65.2.6.3416:o2)
- c. the small two quarters (STAT-1600-E2-H,IV,1026.14:e2)

The option of adjoining adjectives to NumP seems to have been available until EModE, yielding the order Art/Dem-Adj-Poss-N. However, adjectives can be adjoined only to NP in PE, because examples like (i) are ungrammatical. Therefore, it might be conjectured

- (26) a. [DP [D' [D Art/Dem] [NumP Adj [NumP Poss [Num' Num [NP [N' N]]]]]]]]]
 b. [DP [D' [D Art/Dem] [NumP Poss [Num' Num [NP Adj [NP [N' N]]]]]]]]]

These structures immediately account for the order Art/Dem-(Adj)-Poss-(Adj)-N in (10c), which had been available until the EModE period. Note that the condition (22) is satisfied in (26) because the [+definite] feature of D is checked under a head-head relation with articles/ demonstratives.

Turning now to the order Poss-Dem-(Adj)-N in (10d), suppose that possessive pronouns could optionally move to Spec-DP in OE, as shown in (27).

- (27) a. [DP POSS_i [D' [D Art/Dem] [NumP Adj [NumP *t_i* [Num' Num [NP [N' N]]]]]]]]]
 b. [DP POSS_i [D' [D Art/Dem] [NumP *t_i* [Num' Num [NP Adj [NP [N' N]]]]]]]]]

This results in the checking of the [+definite] feature of D, under both a Spec-head and a head-head relation; recall that there is no prohibition on having both licensing positions filled in the case of NegP (Frisch (1997)).¹⁰ This movement analysis accounts for the order in (10d), as well as the fact that when possessive pronouns precede articles/demonstratives, adjectives cannot intervene between them. However, recall from section 2 that the relevant word order was lost in the ME period. This means that the movement of possessive pronouns to Spec-DP became impossible, which is argued to be closely related to their grammaticalization in the next section.

Finally, consider the word order patterns in (10a, b). It was observed in Table 6 that adjectives typically follow articles/demonstratives and possessive pronouns when the latter two do not cooccur within the same noun phrase. The structures of (10a, b) are as in (28a, b), respectively.

- (28) a. [DP [D' [D Art/Dem] [NumP Adj [NumP [Num' Num [NP Adj [N' N]]]]]]]]]

that the change in the adjunction site of adjectives happened within noun phrases during LModE.

¹⁰ This analysis assumes that possessive pronouns move to Spec-DP to check the [+definite] feature of D in (27). Given that the feature has already been checked by articles/ demonstratives, another possibility would be that possessive pronouns are topicalized to Spec-DP without checking the [+definite] feature of D, along the lines of Yamamoto (1989) (see section 3).

- b. [DP Poss_i [D' D [NumP Adj [NumP *t_i* [Num' Num [NP Adj [NP [N' N]]]]]]]]]

It immediately follows from the structure (28a) that articles/demonstratives always precede adjectives, regardless of whether adjectives are adjoined to NP or NumP. There, articles/ demonstratives serve to check the [+definite] feature of D under a head-head relation. On the other hand, in (28b), possessive pronouns must raise to Spec-DP in order to enter into a checking relation with the [+definite] feature of D in the absence of other matching elements. Hence, the order Poss-Adj-N is derived, regardless of whether adjectives are adjoined to NP or NumP.

4.3. The Grammaticalization of Possessive Pronouns

This section attempts to clarify the syntactic status and the grammaticalization path of possessive pronouns in the history of English, which influenced their word order patterns within noun phrases after ME. I argue that the motivation for the grammaticalization of possessive pronouns is economy, in the sense of Gelderen (2004).

First of all, let us briefly review Gelderen's (2004) approach to grammaticalization. She argues that grammaticalization is driven by the two economy principles as shown in (29) and (30).

- (29) Head Preference or Spec to Head Principle:
Be a head, rather than a phrase. (Gelderen (2004: 11))
- (30) Late Merge Principle:
Merge as late as possible. (ibid.: 12)

Concerning the principle in (29), she presents plenty of examples where the position of elements has shifted from a specifier to a head within the same phrase in the history of English. One of such examples is the complementizer *that*. She argues that the complementizer *that* occupied Spec-CP in OE, by showing the example in (31).

- (31) forðam wearð ylða bearnum undyrne cuð
therefore became to-elders to-children not-hidden known
gyddum geomore þæt þe Grendel wan hwile
through-tales sadly that that Grendel fought while
wið Hroþgar
against Hrothgar
'Therefore, all mankind found out in sad tidings that Grendel
fought against Hrothgar.' (Beowulf 149–151)
(ibid.: 89–90))

This example involves the two italicized elements in the CP domain: one

corresponds to *that* and occupies Spec-CP, while the other is the particle *pe* and occupies the head of CP. Gelderen argues that the complementizer *that* first appeared in Spec-CP, but changed its position to the head of CP in late OE in accordance with the Spec to Head Principle, leading to the loss of examples like (31).

On the other hand, the principle (30) indicates that it is more economical to wait as long as possible before merging than to merge early and then move. Chomsky (2000, 2001a, 2001b) also shares the same insight as (30), calling it Merge over Move. Gelderen cites the well-known case of grammaticalization of modals as an example resulting from the change from a head to a higher head in accordance with the Late Merge Principle. According to her, the base-generated position of modals, which functioned as main verbs in OE and ME, changed from V to Asp(ect), and later to M(ood).¹¹

With this in mind, let us consider the position and the grammaticalization path of possessive pronouns in the history of English. As we saw in the previous section, possessive pronouns are base-generated in Spec-NumP in OE, optionally moving to Spec-DP when they cooccur with articles/demonstratives, as shown in (32).

¹¹ Gelderen amply presents examples of grammaticalization that have been driven by the Spec to Head Principle and the Late Merge Principle: personal pronouns, negatives, relatives and so on, for the former, and adverbs, perfect auxiliaries, progressive auxiliaries, and so on, for the latter.

If possessive pronouns remain *in situ*, there are two possible word order patterns depending on the position of adjectives, namely Art/Dem-Adj-Poss-N and Art/Dem-Poss-Adj-N. If possessive pronouns move to Spec-DP, the resulting word order is Poss-Art/Dem-Adj-N. In all these word order patterns, the [+definite] feature of D is checked by articles/ demonstratives occupying the head of DP (as well as by possessive pronouns in the order Poss-Art/Dem-Adj-N). Note that possessive pronouns obligatorily move to Spec-DP in the absence of articles/demonstratives, because there are no other matching elements to check the [+definite] feature of D.

In accordance with the Spec to Head Principle, suppose that possessive pronouns became the head of NumP in ME, so their movement came to target the head of DP, which is the base-generated position of articles/demonstratives. Therefore, when articles/demonstratives appear in the head of DP, possessive pronouns cannot move there, as shown in (33). Note that even though the movement of possessive pronouns does not occur, the [+definite] feature of D is successfully checked by articles/demonstratives in the head of DP without the movement of possessive pronouns.

On the other hand, when articles/demonstratives do not appear in the head of DP, possessive pronouns obligatorily move there to check the [+definite] feature of D. This analysis can properly capture the results of the investigation summarized in Tables 7 and 9: the order Poss-Art/Dem-(Adj)-N was lost in ME, whereas the order Art/Dem-(Adj)-Poss-(Adj)-N was still attested in EModE.

The obligatory movement of possessive pronouns to the head of DP in the absence of articles/demonstratives led to their further grammaticalization in accordance with the Late Merge Principle: they came to be directly merged in the head of DP, as shown in (34).

In (34), articles/demonstratives and possessive pronouns compete for the same position, the head of DP. This is why they cannot cooccur within the same noun phrase in PE. Their cooccurrence is still observed in PPCEME, so that the grammaticalization of possessive pronouns driven by the Late Merge Principle must have happened in the LModE period.

In order to confirm this, I have investigated the distribution of double determiners in LModE by using the CLMET. Together with the results of the investigation based on PPCEME, the first row in Table 12 represents the numbers of examples attested in the corpora, and the second row represents the numbers of double determiners per a hundred thousand words in each sub-period of ModE.

Table 12 ← PPCEME → ← CLMET →

	EModE1 (1500– 1570)	EModE2 (1570– 1640)	EModE3 (1640– 1710)	LModE1 (1710– 1780)	LModE2 (1780– 1850)	LModE3 (1850– 1920)
Number	63	58	50	57	97	47
/100,000words	10.93	8.86	8.85	1.88	1.69	0.91

Although the number of tokens of the relevant examples remains almost unchanged in ModE, there is a radical reduction in the frequency of double determiners in the transition from EModE3 to LModE1, and it gradually decreases during LModE. Therefore, it is plausible to conclude that the grammaticalization of possessive pronouns into a central determiner occupying the head of DP was completed during LModE.

To sum up, this section has discussed the grammaticalization of possessive pronouns in the history of English in the light of the two economy principles proposed by Gelderen (2004). The position of possessive pronouns changed from Spec-NumP to the head of NumP in ME, in accordance with the Spec to Head Principle. This made the order Poss-Art/Dem-(Adj)-N impossible, since possessives could no longer move to the head of DP in the presence of articles/demonstratives. Then during the LModE period, possessive pronouns were further grammaticalized and came to appear in the head of DP, leading to the loss of double determiners.

5. Conclusion

In this paper, I have discussed the distribution of quantifiers, articles/demonstratives, possessive pronouns and adjectives within noun phrases in the history of English, arguing that the distributional differences between PE and early English are accounted for in terms of the unique behavior of possessive pronouns in early English. The possibility of the cooccurrence of articles/demonstratives and possessive pronouns in early English was shown to follow from their different syntactic positions: while articles/demonstratives occupy the head of DP throughout the history of English, the base-generated position of possessive pronouns was Spec-NumP in OE and the head of NumP in ME and EModE. It was also argued that possessive pronouns were finally grammaticalized into a central determiner occupying the head of DP during LModE, thereby establishing the determiner system in PE.

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