

A DIACHRONIC TREATMENT OF ENGLISH QUANTIFIERS

by

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ABSTRACT

This study presents an analysis of the history of English quantifiers (each, all, both, some, any, etc.) in which it is proposed that these words are best analyzed as members of the syntactic category of adjectives until the end of the sixteenth century when they were re-analyzed as a separate category. Historical changes involving each in the each(...)other reciprocal construction are described; the explanation of these changes is considered in terms of its ability to provide evidence in the decision between two competing synchronic analyses of the each(...)other construction in Modern English. Both re-analyses are seen as examples of the types of contribution that diachronic studies can make to the synchronic study of language.

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UN ANALYSE D'HISTOIRE D'ANGLETERRE

À DÉTERMINER LES QUANTITÉS

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ABRÉGÉ

Cet étude présent un analyse d'histoire d'Angleterre à déterminer les quantités (each, all, both, some, any,...) de lesquelles il est proposé que ces mots sont mieux analysé comme membre de catégorie syntaxique d'ajectifs jusqu'avant le seizième siècle quand ils ont été re-analysé comme une catégorie à part. Changement historique impliquant each dans each(...)other construction réciproque sont décrit; l'explication de ces changements est considéré en terms d'habileté pour fournir de l'évidence dans la décision entre deux analyse synchronique concurrent de each(...)other construction dans l'anglais modern. Les deux re-analyse sont observé comme exemples des genre de contribution que les études historique peuvent faire à l'étude synchronique de langage.

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CHAPTER 1

INTRODUCTION

Historical change in language has been a topic of interest for a long time. The purposes of studying diachronic change have varied from tracing the parentage of languages and constructing trees of language families to attempting to determine how and when a given change in a language took place. The purpose of the present study is closer to that of the latter type, but it does not stop with the history of a language; it is based on an approach to linguistics that proposes that the results of diachronic studies can contribute to the synchronic study of language. A fuller description of the approach to be taken here is to be found in Lightfoot (1976), on which this brief account is based.

With the development of transformational-generative grammar linguists have a way of viewing and describing syntactic change in language that was not provided by the neogrammarian approach. As Lightfoot (1976) points out, the neogrammarian approach was noticeably inadequate for studies of diachronic syntax. It allowed a means of expressing phonological changes by the writing of rules to correlate a given element of the phonological inventory at one time with an element/elements at another time, but a corresponding attempt to relate a sentence at one time with a sentence at another time is senseless.

Transformational-generative grammar allows the linguist to view (superficial) changes in a language as changes in the abstract, formal system of rules that generates the language. One change in the abstract system (i.e., the grammar) may result in several changes in the language output; to study diachronic change a linguist reverses the direction and, observing several changes occurring at the same time in a given language, looks for one change in the grammar of the language that would explain his observations. He proposes one grammar for the language at the earlier period and another for the later period, basing his proposed grammars on the language data of each period as well as on the necessity of explaining the differences in the language data observed at the two different times. With this approach the study of diachronic syntax is possible.

Although it is conceivable that a language could undergo several unrelated changes at one time, the number of changes that can occur simultaneously is quite limited since mutual intelligibility must be preserved between the speakers of the language before the change(s) and those after the change(s). Therefore it is justifiable to say that in the study of diachronic change the preferred analysis is one that relates simultaneous superficial changes by demonstrating that they are the consequences of a single change in the grammar of the language.

This sort of demonstration can give evidence to aid in the resolution of synchronic disputes at two levels. First, it can show that, of two competing theories of grammar, one is inadequate when historical data are considered. An example of this type is Lightfoot (1974) in which Lightfoot argues that historical changes in the precursors of Modern English modals (e.g. can, could, may, might, will) can be insightfully described within the framework of a 'shallow syntax' as in the Extended Standard Theory, whereas seven simultaneous changes must be regarded as only accidentally occurring at the same time in a framework incorporating an abstract syntax--for instance, in the generative semantics framework of Ross (1967).

Second, the consideration of historical data can provide evidence to aid in the decision between two competing synchronic analyses of a given phenomenon. Lightfoot's (1974) analysis shows that an explanation for the simultaneity of seven diachronic changes in modals can be made upon the assumption that a syntactic category of 'modal' was created in the sixteenth century. Thus it provides an argument for including the category 'modal' in a synchronic description of Modern English--given that no further re-analyses have occurred, and there appears to be no evidence for any. Chomsky (1965) is an example of a synchronic analysis for Modern English proposing one category for verbs and a separate one for modals. On the other hand, Ross (1967)

presents an analysis of Modern English in which no distinction in category membership is made between verbs and so-called modals; both are in the same category--that of verbs. The historical evidence presented by Lightfoot supports the former (type of) analysis for Modern English over the latter (type), since the former allows a good explanation to be made for the diachronic changes observed in modals.

The study of diachronic change in language can therefore provide evidence to decide between different synchronic analyses of a given phenomenon and between different theories of grammar. There is also another way in which the study of diachronic change can contribute to the development of a theory of grammar. One approach to the problem of explaining the facts of language use and acquisition is to develop a theory of grammar so restrictive that it is possible for the child acquiring the language--or for the linguist--to find only one possible grammar that is compatible with the language data available. This means that the grammatical theory will specify a limited number of grammars as possible systems to underlie human languages. In so doing, the theory predicts what changes are possible in grammars; a given grammar can only change to another in the set of possible grammars specified by the theory. The study of language change can provide a test for the correctness of these predictions; it can also suggest further restrictions on the theory. The development of a theory of grammar and

the study of diachronic change can interact in this way.

One example of a restriction on the theory of grammar for which the study of historical change can provide evidence is the Opacity Principle proposed in Lightfoot (1974) and developed in more detail in Lightfoot (1976). This is a proposal that:

"...changes in various places in the grammar may have the effect of making existing deep structure analyses more opaque to the language learner, harder to figure out. There seems to be a tolerance level for such exceptional behaviour or 'opacity', and when this is reached a radical restructuring takes place and renders the deep structures more transparent, easier to figure out and 'closer' to their respective surface structures" (Lightfoot 1976, p. 6).

The Opacity Principle will (ultimately) predict exactly how much exceptional behavior--how many 'exception features'--can occur before a re-structuring will be provoked.

The Opacity Principle is illustrated in Lightfoot's (1974) analysis of English modals. Lightfoot argues that in early Old English the precursors of Modern English modals (henceforth pre-modals) showed the behavior of normal verbs and should therefore be analyzed as verbs for this period. By the end of the Middle English period, the pre-modals had undergone four changes that made them exceptions to the normal behavior of verbs; that is, pre-modals had four exception features by the end of the fifteenth century. The pre-modals now looked like a distinct class--one separate from that of verbs--and Lightfoot proposes that they were re-analyzed as a distinct category sometime in the sixteenth

century. This proposal explains seven further changes in the (pre-)modals that took place in the sixteenth century; all seven changes follow from a re-analysis in which the category 'modal' was created.

The general explanation for these diachronic changes is that pre-modals had become opaque as members of the category of verbs, and the four exception features proved to be enough to provoke a re-structuring of the base; the re-structuring is evidenced by the seven later changes. The Opacity Principle is proposed as a principle of grammatical theory that restricts the set of possible syntactic components, but its effects can be seen most easily in such historical change. It is through the study of individual cases of diachronic change that the functioning of the Opacity Principle can be studied, and in this way a determination of the tolerance level for opacity in synchronic grammars may ultimately be made.

A second area in which the study of diachronic change can contribute to the development of a restrictive theory of grammar is in its ability to provide evidence for the autonomy thesis. This is "...the claim that syntactic rules operate independently of considerations of meaning and use. This restricts the definition of a possible rule of grammar." (Lightfoot 1976, p. 7). It is sometimes claimed (e.g. in Stockwell 1976) that syntactic change which is not caused by semantic and/or phonetic/phonological factors

does not occur. The demonstration of diachronic syntactic changes which are independent of these factors is therefore an argument for the autonomy thesis; the presentation of such examples of change therefore (indirectly) aids in developing a restrictive theory of language.

So far I have emphasized the possible contributions to synchronic studies that can be derived from the study of diachronic changes in language. Diachronic studies can also be pursued for the purposes of understanding the history of a given language and contributing to the development of a theory of language change. These goals are closer to the traditional ones for historical linguistics. Linguists can attempt to develop a theory that specifies the types of changes that languages can undergo and the mechanisms by which these changes are effected. From this viewpoint Lightfoot's analysis of modals can be seen as embodying the claim that change in the base rules of the grammar is one possible type of historical change, a claim that is not uncontroversial; other work on diachronic syntax has concentrated on changes in transformations (e.g. Lakoff, Klima, Traugott). Evidence to decide matters like these furthers the development of a theory of language change.

CHAPTER 2

THE HISTORY OF QUANTIFIERS

Synchronic descriptions of the syntax of Modern English normally include 'quantifiers' as a syntactic category.

This category includes each, all, both, some, every, either, few, more, any, none, etc. These words behave differently from those in any other syntactic category in Modern English, although they show similarities to adjectives, adverbs, and nouns. Distinguishing quantifiers as a separate category is justified for Modern English, but an examination of the history of English will show that this distinction is not warranted for earlier stages of the language.

In Old English (henceforth OE) and Middle English (ME) the categories of adjectives, adverbs, and nouns showed considerably more overlapping of functions and forms than they do in Modern English (NE). I will show that this overlapping occurred in ways that allowed present-day quantifiers to be considered as members of the category of adjectives. In fact, present-day quantifiers must be considered to be adjectives in OE and ME in order to allow the simplest syntactic descriptions of those periods. Various historical changes resulted in the addition of exception features to these particular adjectives until a re-analysis of them was finally provoked in Early Modern English (ENE); the result of the re-analysis was that a separate category

of 'quantifiers' was established at the end of the sixteenth century.

It will be seen that the behavior of the quantifiers¹ themselves did not change in very radical ways, but rather that changes in other categories in the grammar and the general clarification of distinctions between these categories caused quantifiers to gradually become isolated as a class. An analogy might be drawn to the old joke: If you volunteer, step forward; if all but one person step backward, the one person is as isolated as if he had stepped forward. In this respect the history of quantifiers provides a good example of the Opacity Principle at work. The independence of syntactic change from semantic factors is also demonstrated since the quantifiers themselves did not undergo any of the changes that isolated them, so it is hard to see how anyone could claim that this re-analysis was the result of semantic and/or phonetic or phonological factors. This re-analysis therefore is seen as providing evidence for the autonomy thesis as well as for the Opacity Principle.

The distinctive syntactic features of quantifiers in NE are the variety of positions in relation to the noun modified in which they can occur and their ability to stand alone as nouns. The possible positions for quantifiers are: 1) Preceding the modified noun (and any adjective)

as in 'all boys' 2) Predeterminer position as in 'all the boys' 3) Postnominal position as in 'the boys all'

4) Followed by of and the modified noun phrase as in 'all of the boys' 5) What I will, contrary to current usage, call postposed position as in 'the boys were all...'

Not all quantifiers exhibit all of these characteristics, of course. A syntactic peculiarity of the class of quantifiers in NE that I will not discuss is the fact that there are co-occurrence restrictions on the use of quantifiers with other quantifiers and with some adverbs.²

In OE, the quantifiers show the same positions and the same ability to occur alone as substantives:

1) Preceding the noun modified as in 'all boys'

OE: c1000 Wið ealle wundela, genim þas wyrte (The Oxford English Dictionary (OED): under all)
NE: 1873 Theognis bids his friend (Cyrrus) be as much as possible all things to all men (OED: all)

2) Predeterminer position as in 'all the boys'

OE: 855 Ofer al his rice (OED: all)
NE: 1847 With all my heart, With my full heart (OED: all)

3) Postnominal position as in 'the boys all'

OE: 885 And þa scipo alle zeraehton (OED: all)
NE: 1782 The dogs did bark, the children screamed, Up flew the windows all (OED: all)

4) In OE, with a plural noun phrase in the genitive case; later followed by of and the noun phrase as in 'all of the boys'

OE: c875 ~~Daet~~ he spraec to his liornaera sumum
(OED: some)
NE: 1891 Higher up...there are some of the most
sublime scenes I have looked on anywhere
(OED: some).

5) Postposed position as in 'the boys were all...'

OE: a1000 Hit is Adame nu eall forgolden (OED: all)
NE: 1850 Another is all frivolity (OED: all)

6) Used as substantives.

OE: a1000 AE1c hine selfa begrindeþ gastes dugu^m
(OED: each)
NE: 1871 Each did much to...purify the spiritual
self-respect of mankind (OED: each)

Quantifiers were easy to find in all of these positions from OE to NE, so I conclude that they were all productive positions throughout the history of English.

I will first discuss the behavior of quantifiers in OE. I will show that, although their syntactic behavior in OE is very similar to that in NE, this did not isolate them as a class in the earlier stage as it does now. This is because in OE, there were parallel constructions to those of quantifiers in normal adjective behavior, and so quantifiers fit quite comfortably into the class of adjectives at this stage. Next I will trace the development of these parallels through ME and later and show that several of them disintegrate towards the end of the ME period and in the following century, so that quantifiers--as adjectives--have acquired several exception features. By 1600, quanti-

fiers no longer look enough like adjectives, and the language resolves the resulting opacity by a re-analysis in which they are established as a syntactic category distinct from that of adjectives.

Inflection of adjectives and quantifiers in OE

In OE, adjectives are inflected for case, number, and gender. There are two sets of inflectional endings, the weak and the strong. The former is used when the adjective is preceded by a demonstrative (se or þes) or possessive pronoun, when it modifies a noun in direct address, regularly when it occurs in the comparative degree, and frequently when in the superlative degree; the strong declension is used elsewhere (Kispert, p. 33). Quantifiers are declined exactly like adjectives in OE, using the same inflectional endings and following the distinctions noted above for the use of the strong or weak set of endings. Their occurrence in the weak form is rare because they do not occur in the comparative or superlative degree normally, and they do not appear to occur after demonstrative or possessive pronouns in OE. This leaves their main use of the weak form as that in direct address, which is a comparatively rare use in itself.

In fact, the use of quantifiers in the weak form is rare enough to cause some authors to state that they are exceptions (as adjectives) in that they are always declined

strong (Bright, p. 1v; Sievers-Cook, p. 215; Quirk, p. 31).

But Campbell says "From adjectives of indefinite quantity, eall all, monig many, genōg enough, &c., the weak forms are naturally rare, but are used when syntax demands, e.g. þa monigan cyningas..." (p. 261). The reason for the confusion is undoubtedly the rarity of the weak form of quantifiers, as well as differences among grammarians in the specification of the conditions for the use of the weak and strong forms. Sievers-Cook, for example, says that the weak form occurs whenever the adjective is used as a noun (p. 215). But quantifiers occur in the strong form when used substantively:

874 On allum þam þe him laestan woldon (OED: all)
al000 AElc hine selfa begrindeþ gastes duguðum
(OED: each)
al000 þonne ic winde sceal sincfaȝ swelȝan of sumes
bosme (OED: some)

So Sievers-Cook concludes that quantifiers are exceptions in occurring in the strong form when adjectives would use the weak. But Kispert gives an example of an (attributive) adjective used substantively in the strong form: ac sē wonna hrefn fūs ofer fægum [sceal] fela reordian (p. 43).

Notice here that the adjective is not preceded by a demonstrative or possessive pronoun. The fact is that adjectives used as substantives usually are preceded by a demonstrative--often enough so that Quirk says categorically:

"Adjectives used substantively are preceded by a demonstrative: sēo aeȝele 'the noble (woman)'" (p. 88). However,

although the weak form usually does occur in most of these cases, the right explanation for the weak form seems to be that it occurs because of the demonstrative or possessive and not because of the substantival use. The following quotation nicely illustrates the distinction:

Matthew xv.14 Se blinda, gyf he blindne laet
(Kellner, p. 146)

Here both instances of the adjective blind are used as substantives, but the first one occurs with the demonstrative se and is thus in the weak form, while the second occurs without a demonstrative and is in the strong form. The syntactic imbalance in weak and strong forms of quantifiers therefore actually follows from the semantic characteristics of quantifiers; their indefiniteness precludes the (frequent) use of demonstratives or degrees (with the exceptions of much, more, most; few, fewer, fewest). So quantifiers (as adjectives) are not syntactically deviant with respect to the strong versus weak distinction.

I conclude, therefore, that quantifiers in OE act exactly like adjectives as far as inflections are concerned, and to that extent appear to be members of the same category. Nouns and demonstratives, on the other hand, have slightly different inflectional endings, and thus look like distinct categories from quantifiers and adjectives in this respect.

The type 'all boys'

This is a common construction for quantifiers and other adjectives in OE, as in NE. The quantifier or other adjective is inflected to agree in case, number, and gender with the noun in OE; the strong form of the adjective or quantifier is used since it is not preceded by a demonstrative or possessive pronoun. This construction is exactly the same for quantifiers and adjectives; quantifiers look just like adjectives when they occur in it.

In fact, quantifiers look a bit more like adjectives when they occur in this construction in OE than in NE. Attributive adjectives in OE and NE can commonly occur with either a singular or plural noun--e.g., a/the black hole; black holes. In NE quantifiers differ from ordinary (attributive) adjectives in that most of them have severe restrictions on their use immediately preceding singular and plural substantives. For example, each, every, and either can only occur before singular nouns, while many, several, and most can only occur before plural nouns. Quantifiers in OE are restricted in this respect too, but apparently not quite as much; many and each could occur immediately before either a plural or a singular noun in OE, for instance (Jespersen VII, 12.5₁₁; OED: many, each):

c893 þæt Estland is swyðe mycel, & þær bið swyð
 manig burh (OED: many)
c1000 AElcē wunde hyt gehaelep (OED: each)

The type 'all the boys'

Although in NE only quantifiers occur in predeterminer position, in OE there are several other types of adjectives that can occupy this position:

1) Kispert (p. 140) says that adjectives ending in -weard may occur before the determiner (sē or pēs); Quirk says that these adjectives usually precede the demonstrative: on sūðweardum þāem lande; of inneweardre his heortan (p. 88).

2) Kispert states that normally sē, pēs and mīn precede a noun and any adjectives modifying the noun "...but a metathesis of positions also occurs: ...on sele þām hean"

(p. 140). Mosse (p. 123) says: "The order "adjective + article (demonstrative, possessive) + substantive" that is still encountered in Lawman was undoubtedly a survival from OE;" he gives three examples from The Brut:

end 12th C	at <u>aeðelen are chirechen</u>	(Mosse, p. 123)
end 12th C	mid <u>deore mine sweorde</u>	(Mosse, p. 123)
end 12th C	mid <u>sele þan kinge</u>	(Mosse, p. 123)

I have been unable to find any further evidence about this type, and more study is needed to decide this point conclusively. Kispert's and Mosse's statements do seem to imply, however, that predeterminer position for attributive adjectives might have been a productive position in OE; if so, this type provides a good parallel for predeterminer position for quantifiers.

3) In OE possessive pronouns may precede the demonstrative and noun: haeleð mīn se leófa (Kellner, p. 138). Mustanoja

says that this type (min se leofa (leofesta) freond) is common in OE (p. 298).

Possessive pronouns in OE (sometimes called possessive adjectives) include min, þin, sīn, uncer, incer, ūre/ūser, and ēower. These possessive pronouns are fully declined as strong adjectives to agree in number, gender, and case with the noun modified. Other possessive pronouns are his, hiere, and hiera. These are the third person possessives, and are not declined but remain invariant regardless of the noun modified (Kispert, p. 92).

Since most of them are declined exactly like adjectives, it seems that the possessive pronouns in OE should be analyzed as adjectives. The third person possessives then represent invariable adjectives like fela and unrim. As is shown in the examples above, the possessives can co-occur with the determiner se (perhaps they also co-occur with þes but I have no examples of this type), so should not be categorized as determiners. In OE as in NE either se or þes can occur in a noun phrase, but not both. This restriction on co-occurrence is naturally handled by an analysis in which both are treated as 'determiners' and only one determiner is (optionally) generated for each noun phrase. If possessives were treated as determiners a specific statement of these co-occurrence restrictions would have to be made--an expense to the grammar with no apparent corresponding gain. If possessives are analyzed as adjectives, they can co-occur

with other adjectives and with either one of the determiners se and pes. Therefore, I propose that possessives in OE should be analyzed as adjectives,³ and that the common OE type 'min se leofa freond' is a parallel in adjectives to predeterminer position for quantifiers.

4) Numerals followed by adjectives in the superlative degree normally occur in predeterminer position (Kellner, pp. 110-1). The type 'one the best knight' occurs from the eleventh century on, while the plural type 'three the best ointments' is attested since the tenth century (Mustanoja, pp. 207-9):

- 971 paer waeron preo pa betstan ele (Kellner, pp. 110-1)
 cl000 pis folc...haef geworht ane pa-maestan synne
 and Gode pa lapustan (Mustanoja, p. 297)
 1091 pas forewarde zesworan xii pa betste of pes
 cýnges heaife (Visser, p. 226: OED)

The adjective is normally in the superlative in this type, with only one early example recorded with the adjective in the positive form (Mustanoja, pp. 297-9).

There is some uncertainty over the interpretation of these types. Mustanoja argues that one in these constructions is an emphatic, intensifying use found elsewhere in OE (pp. 297-8), while others argue that one stands for 'alone' or 'only,' a common use of it in OE (Visser, p. 225). As for the plural type, Mustanoja is uncertain whether or not a partitive meaning is associated with it (p. 300); Visser asserts that there is no partitive meaning--at least

in the singular type--since the noun is singular and not in the genitive (p. 225). Whatever the exact interpretation of these types is, however, they provide another case in which an adjective other than a quantifier characteristically occurs in predeterminer position, although it is restricted to the case in which a superlative follows. Mustanoja says: "This peculiar rhythmic arrangement, which probably has counterparts in most languages in the world, is responsible for such common types as all the world, both the(se) boys, half a bottle..." (p. 299). Both he and Kellner point out that a similar construction occurs in OE with some and few:

Mid feawum þam getrywestum mannum (Mustanoja, p. 300)
 Healfdene for mid sumum þam here on Norþhymbre
 (Kellner, p. 110)

For this type to hold as a parallel to quantifiers in normal adjectives, I must establish that numerals in OE are in fact members of the category of adjectives.

Kellner says: "With the exception of hundred and thousand, which are always substantives, the numerals were in Old English used both as a) Substantives (governing the genitive case) and b) Adjectives" (p. 162). The first point to be made here is that the fact that numerals can function as substantives does not mean that they are nouns; since adjectives in OE can function freely as substantives the cardinal numerals used as nouns fit very well into that category. The second point is that Kellner is apparently

not correct in excluding hundred and thousand from adjectival use. The OED says for hundred: "In OE. sometimes used as a true adjective, either invariable (like other cardinal numbers above three), or declined in concord with its sb." And for thousand, the OED has a section for its use as "adj. or quasi-adj., followed immediately by a plural (or collective) noun."

c975 Mi^x peningum twaem hundre^xum (OED: hundred)
 cl000 Iob...waeron eft forzoldene...busend ~~3~~ tyme
 oxena and busend assan (OED: thousand)
 cl000 Mid twam hundred penezon (OED: hundred)

In each of these examples the numeral does act exactly like an adjective. OE had other invariable adjectives (e.g. fela, unrim), so this invariability alone is not reason enough to discount hundred and thousand as adjectives. Also, their occurring as invariable nouns is also exceptional (Bright, p. 111; Campbell, p. 285; Sievers-Cook, p. 238-9; Kispert, p. 116-7).

The first three cardinals, ān, twēgen, þrīe, are the only ones to be inflected consistently as adjectives for each case and gender (Kispert, p. 116). Higher numerals can also be used as adjectives and can be declined as well, although they are not usually inflected. But there are numerous exceptions in the Northern dialects (Sievers-Cook, p. 236).

Numerals can occur in the typical adjective position, between the determiner and the modified noun:

c1175 Nu werēn þas þreo laze 3e-written inne þa oðre
 table breode sunderlipes (OED: three)
 c1275 Bi-twene þis twam volke (OED: two)

It seems, then, that in the simplest analysis of OE, numerals should be considered to be adjectives. This means that a fourth parallel to predeterminer position for quantifiers holds in OE.

These four parallels--especially the last two or perhaps three, which represent common and apparently regular types--support the proposal that predeterminer position for quantifiers does not distinguish them from adjectives in OE--not, at any rate, as clearly as it does in NE. The predeterminer position of quantifiers in NE is unique and helps to define their distinctness as a class, but in OE this is not the case.

The type 'the boys all'

The postnominal position of quantifiers in OE is a possible position for other adjectives as well as for quantifiers, so does not contribute substantially to the opacity of quantifiers as adjectives in OE. Quirk says (p. 88-9):

"It is by no means rare to find modifiers in general (especially adjectives, and especially in poetic usage) following their nouns: freoðoburh faegere 'fair stronghold', wadu weallendu 'surging waters', niceras nigene 'nine water-demons'. Even possessives and emphatic demonstratives can take this position: ēþel þysne 'this country, wine mīn Unfert' 'my friend, U', gingran sinre 'to her handmaiden'."

Quirk also says that adjectives in -weard are frequently

found following the noun modified (p. 88). Kispert gives a few examples of postnominal position also: dryhten sinne 'his lord,' Nergend ūser 'our Saviour' (p. 140). And, finally, numeral adjectives are found postnominally:

Beowulf Uncer tweȝa (OED: two)
Beowulf Be þaem ȝebroȝrum twaem (OED: two)

Again, as with predeterminer position, postnominal position does not distinguish quantifiers as a class on the grounds of exceptional syntactic behavior because demonstratives and attributive, possessive, and numeral adjectives can also occur in postnominal position. This shows a greater freedom of position for all noun modifiers in OE that helped to keep quantifiers from looking too distinct from other adjectival modifiers.

The type 'all of the boys'

In NE, most quantifiers can occur in this construction. In OE the periphrastic genitive with of did not exist, but many of its functions were handled by the genitive case inflection. So the same 'all of the boys' constructions could occur in OE, with the genitive case of the noun in place of of plus the noun phrase. All of these constructions are partitives, a common function of the genitive in OE. Kispert (p. 122) says:

"This common use of the genitive indicates the whole from which a part is taken; the partitive genitive is often accompanied by fela 'much, many', ma 'more', a superlative, sum 'a certain (one)', some other indefinite pronoun, or a number."

Kellner (p. 108) says more generally that the partitive genitive can be governed by nouns, adjectives in the comparative and superlative degree, numerals, interrogative pronouns and indefinite pronouns:.

Beowulf	Aenig ymbsittendra	(Kellner, p. 109)
Beowulf	An aedelunga	(Kellner, p. 109)
Beowulf	Weorðmynda dael	(Kellner, p. 109)
Beowulf	maðma menigeo	(Kellner, p. 109)
Beowulf	nan gūðbilla	(Kellner, p. 109)
Elene	folca gedryht	(Kellner, p. 109)
Elene	arleasra sceolu	(Kellner, p. 109)
Anglo-Saxon Chronicle	ehta hund mila	(Smith, p. 241)
Anglo-Saxon Chronicle	twegen gebroða	(Smith, p. 241)
Anglo-Saxon Chronicle	scipu Deniscra monna	(Smith, p. 241)
Anglo-Saxon Chronicle	teopan dael his londas	(Smith, p. 241)

These examples show that, rather than being a syntactic peculiarity of quantifiers, the use with the partitive genitive is a characteristic shared by several classes of words with a partitive meaning.

Since it occurs with superlative and comparative adjectives, the fact that the partitive genitive is used after quantifiers is not something that completely separates quantifiers from attributive adjectives syntactically. In addition, all and both do not seem to occur in this construction until the end of the sixteenth century⁴ (OED: all, both; Jespersen VII, 9.9₂); this means at least that quantifiers (including all and both) were not a completely distinct and separate class, even within the adjective category, in OE.

Cardinal numerals are also found with the partitive genitive and this means that a good parallel in adjective

behavior to the behavior of quantifiers exists in OE. I have argued that numerals should be considered to be members of the category of adjectives in OE; the fact that both numerals and quantifiers can take the partitive genitive strengthens the case that quantifiers, too, should be considered to be adjectives.

The type 'the boys were all...'

Quantifiers may occur in a postposed position in OE, as in NE. The OED says: "All adj. is often separated from the sb. which it defines, by an auxiliary vb. or clause."

a1000 Hit is Adame nu eall forgolden (OED: all)
 a1000 Us is eallum þearf ̥aet ure aezhwylc o̥erne
 bylde (OED: all)
 c1000 Hi fealla* bezen on aenne pytt (OED: bo)

The quantifiers here are inflected in the strong declension to agree with the nouns they modify. With the elaborate inflectional system in OE for adjectives, it is not difficult to locate the antecedents of eall, eallum, and bezen. Perhaps, invoking the relatively 'free' word order of OE, it could be said that this postposition of quantifiers does not contribute much to the opacity of quantifiers as adjectives, as far as interpretation is concerned at least. But there appears to be a more reasonable possibility.

~~In~~ OE most adverbs are morphologically derived from nouns and adjectives. "Most commonly, adverbs were specialised uses of an old adjective case-ending in -e that we can best call dative-instrumental (it is concerned with

means and thence with manner)" (Strang, p. 272). An adverb formed from an adjective in this way is identical in form to the strong adjective in the feminine singular accusative, or in the nominative or accusative plural of any gender. This means that a postposed quantifier (which is almost always strong), when moved off a noun that was in any one of these forms would look exactly like an adverb formed from the adjective (i.e., from the quantifier). Another frequent source of adverbs in OE is the use of any one of the oblique cases of a noun or adjective (with the neuter a-declension endings). Quantifiers are no exception in this respect; they may be used as adverbs in their oblique cases just like other adjectives. Kispert gives a few examples of each case (except accusative plural, which he says is not recorded in adverbial use); his list includes gen. sg. ealles, dat. instr. sg. ealle, accusative sg. eall and genōg ('enough'), and dat. instr. pl. miclum (pp. 80-1). So a quantifier moved off a noun in most oblique cases would also look like a normal adverb. Note that the neuter accusative singular eall is identical to the strong forms of the nominative singular form of all genders. Therefore, many quantifiers moved off nouns would look like adverbs in form, and in their postposed position would look like normal adverbs and not exceptional adjectives. Probably, however, such postposing would be mainly off the subject noun phrase (OED implies that this is the usual case under the entry for all) and therefore

the quantifier would very often be in a possible adverbial form.

It does appear to be true that the meaning of a sentence is often not more than slightly altered if at all when a postposed quantifier is interpreted as an adverb. The OED says that a postposed quantifier may appear to refer to the predicate; e.g., in "'Zion our mother is all wofull'... all, originally an attribute or complement of Zion, comes to be viewed as qualifying woful = altogether woful" (OED: all). Therefore interpreting a postposed quantifier as an adverb would normally not result in confusion or misinterpretation of the meaning of the sentence, and such an interpretation could survive in the language.

This (proposed) adverbial use of quantifiers has something of a parallel in numeral adjectives; neuter forms of cardinals can be used in multiplicative expressions as adverbs (Campbell, p. 287):

c900 Lang scipu... pa waeron fulneah tu swa lange
swa pa oðru (OED: two)

Adjectives and quantifiers used substantively

A difference between quantifiers and adjectives in NE is that quantifiers, but not adjectives, can be used freely as substantives. But this difference did not exist in OE. Kellner says: "Any adjective can be used substantively" (p. 312). Strang says: "Finally, it must be said of the forms discussed here, and of all others which can be attri-

butive within the NP, that as long as they remained highly inflected they were free to act as heads. Demonstratives, numerals, adjectives are all really pronouns as well; the traditional labels do not imply the distinctions we are now familiar with" (pp. 300-1). Adjectives may be used substantively in OE to refer to God, to man "and describing qualities of body and mind...used as well in the singular as in the plural, in the positive as well as in the comparative and superlative degree" (Kellner, p. 146), to things and animals, and to abstract ideas:⁵

- Beowulf cwæð paet se aelmihtiga eorðan worhte (Kellner, p. 145)
 a900 Ne geald he yfel yfele (Kellner, p. 151)
 Matthew Se þe underfehð rihtwises on rihtwises naman, he onfehð rihtwises mede (Kellner, p. 146)
 cl000 twegen landes men and an aelpeódig (Kellner, p. 146)
 971 Crist sylfa his geongrum saegde (Kellner, p. 146)
 (OE) Blanca (=white or grey horse, OE use; Kellner, p. 150)
 Beowulf sóð and riht (Kellner, p. 151)

The substantival usage of adjectives was very free in OE, therefore; adjectives could be used substantively for any type of referent, and this substantival usage was very frequent (Kellner, pp. 146-51). So in OE, quantifiers looked no different from all other adjectives: both could be freely used as substantives.

I have shown in this section that the syntactic functions and positions of quantifiers did not differ substantially from those of adjectives in OE. The two classes

behave alike with respect to inflection (including the use of strong versus weak forms), with respect to prenominal ('all boys'), predeterminer and postnominal position, use with partitive genitives, and use as substantives. I have also shown that the postposing of quantifiers does not necessarily make them look like exceptions to normal adjective behavior because they can then usually be interpreted as normally formed adverbs. I conclude, then, that quantifiers should be considered to be members of the syntactic category of adjectives in OE; there is not enough motivation to complicate the grammar by setting up a distinct category of quantifiers for this stage of English.

ME and later: Inflection of adjectives and quantifiers

In late OE, final -m coalesced with n and in very early ME all vowels in unstressed syllables were weakened to e (Wyld, p. 239; Quirk, p. 11). These phonetic changes resulted in the fairly elaborate OE inflectional systems for nouns, adjectives, and demonstratives being greatly simplified. The Northern dialects are ahead of the others in this change, but by the twelfth or thirteenth century it is generally true that only a \emptyset versus -e inflectional distinction exists for adjectives. The strong versus weak and singular versus plural distinctions are only partially made in this system, and no distinctions among cases are made. The strong singular form of the adjective has a null (\emptyset) inflec-

tional ending, while the strong plural, and weak singular and plural all have an -e ending. This system, moreover, only applies to monosyllabic adjectives that end in a consonant (Mustanoja, p. 276; Strang, p. 210; Mosse, p. 64; Curme, p. 198). "These distinctions in the inflection of monosyllabic adjectives are fairly well preserved in the works of careful 14th-century writers like Chaucer and Gower..." (Mustanoja, p. 276). All other adjectives are invariable in this period.

Quantifiers on the whole (except for the survival in some cases of a genitive plural, which will be considered later) follow the adjectives in the simplification to two forms (Emerson, xciv), although the weak forms are rare as in OE and for the same reasons. The weak versus strong distinction becomes quite confused and irregular in ME, so quantifiers would not appear irregular in this respect at any rate. In OE some confusion is noticed by Quirk (p. 69) and Campbell (p. 261), but in ME this confusion appears to increase so that even in the earliest ME texts (e.g. The Peterborough Chronicle) the difference between the strong and weak declensions is suppressed and there is a tendency to use the adjective in an invariable form (Mustanoja, p. 276; Mosse, pp. 45, 90-1). So throughout the ME period, as in OE, no distinction between quantifiers and adjectives is made in inflection. Once final unstressed -e is lost towards the close of the fifteenth century, of course,

quantifiers and adjectives are alike in not showing any (normal) inflectional endings. The final -e was often omitted in prose earlier and was probably not pronounced anymore, so invariable forms for both quantifiers and adjectives should probably be considered to occur earlier in the period (Wyld, p. 249).

The type 'all of the boys'

In early ME numerals still occur with the inflected partitive genitive:

12th C xix wintre (wintre for the OE gen. pl. wintra;
Mosse, p. 89)
end 12th C fele hundred wintre (Mustanoja, p. 291)

But as the inflectional endings disappear, an appositive type of construction begins to appear with numerals. This construction instead of the one with a partitive genitive occurs as early as the thirteenth century and becomes dominant (Kellner, p. 162; Mustanoja, p. 291):

c1340 These hundird shepe that were ther
(OED: hundred)
c1200 Mani þusend halī saules (OED: thousand)

The same sort of appositive expression instead of a partitive genitive begins to occur with words expressing measure:

c1275/c1205 he...lette aenne drope blod
(Mustanoja, p. 84)
1362-93 a dozeine chickenes (Mustanoja, p. 84)
c1386 no morsel breed (Mustanoja, p. 84)

This construction is frequent in the thirteenth and fourteenth centuries. But the appositive construction suddenly begins to die out with nouns of measure towards the end of

ME; it does not appear in Caxton and has mostly disappeared by the end of the fifteenth century (Kellner, pp. 109-110; Mustanoja, p. 84). But it continues to occur throughout the period and into NE with hundred, thousand (e.g. NE a hundred sheep).

When the genitive periphrasis with of develops in the twelfth century, it is used with cardinals throughout ME (Mustanoja, pp. 79-80):

- a1225 fif and sixti hundred of hepen monnen (Mustanoja, p. 79)
- c1386 of ladies foure and twenty (Mustanoja, p. 80)
- 1390 of smale whieles twelve (Mustanoja, p. 80)

Sometime between the ME and NE period the of-periphrastic genitive ceased to occur with smaller cardinals, but constructions like hundreds of men, a bushel of grain are still common constructions on into NE.

In early ME quantifiers occur with the inflected partitive genitive; when the of-periphrasis develops they begin to occur with that construction (with the exceptions of all and both):

- c1175 Ga...per eni of pine canne li^x in (OED: any)
- c1200 Ne chaes himm noht te Laferd Crist Till nan off hise posstless (OED: none)
- c1200 Summe off ure little floce (Morris, p. 139)
- c1205 Ne mihten heo...heore nenne [c1275 none of 3am] adun bringe (OED: none)
- c1220 Eni of his limen (OED: any)
- c1386 Everich of you schul brynge an hundred knightes (Morris, p. 191)
- c1386 He...maked ech of hem to been his thral (OED: each)
- 1388 Thei token eueryche of hem a peny (OED: every)

So in ME through NE quantifiers have parallels with numerals

and with nouns expressing measure; and this characteristic of quantifiers remains a reason to regard numeral adjectives and quantifiers as members of the same category.

The type 'the boys all'

In OE, numerals could occur immediately after the noun modified. This use seems less frequent in ME; the OED has the last example for three in this position as the following:

al300 Fīue-thoossand men...he Fedd wyt fīue laues
and fīsses thre (OED: three)

This position is still used archaically or poetically; when it ceased to be a productive normal position for numerals, one adjectival parallel for quantifiers was lost.

The characteristic position for adjectival modifiers in OE was prenominal although this was by no means without exceptions. In ME the postnominal position becomes a productive one for adjectives as is shown by the fact that all new borrowings come in as postpositives. "In this period most adjectives can occur as pre- and post-nominals"

(Lightfoot 1975, p. 205). This means that with regard to the postnominal position (and the ordinary prenominal as in 'all boys', of course) quantifiers look like adjectives in ME as long as this freedom in position lasts. But when, by the sixteenth century, prenominal position is standard, quantifiers are exceptional in that they alone can occur in postnominal position. By this time no other type of modifier can (productively) occur in this position, so quantifiers are

isolated as a class in this respect, and the first exception feature is added.

The type 'all the boys'

Four parallels to predeterminer position for quantifiers were suggested for OE. The first (adjectives in -weard) and third types (possessive pronouns) do not seem to survive in this position after the OE period in normal use.

The second proposed parallel to predeterminer position for quantifiers was with attributive adjectives. Mosse (p. 123) points out the 'dear my lord' type in Shakespeare as the last survival of this type:

- 1601 Dear my lord (Abbott, p. 25)
- 1605 Gentle my Lord (Jespersen II, 15.16)

In fact, the normal use of an attributive adjective in predeterminer position may be said to have died out prior to Shakespeare's time. Both Jespersen (II, 15.16) and Abbott (p. 25) suggest that in the Elizabethan address good my lord, my lord has become a sort of compound like the French monsieur or milord. Under this interpretation these examples in Elizabethan English represent a frozen form, and not the normal use of attributive adjectives in predeterminer position. Jespersen (II, 15.16) says that the 'dear my lord' form "...was then extended to similar groups" and gives the following examples:

- 1588 sweet my childe (Jespersen II, 15.16)
- 1588 good my glasse (in addressing the mirror; Jespersen II, 15.16)

It seems that by this time the form was only used in direct address; thus the Elizabethan use was a very limited one, and predeterminer position for adjectives may be said to have died out earlier. The word order found in NE (my good lord) was also found in Elizabethan English (Jespersen II, 15.16). At any rate, whether it died out with the Elizabethans or before them, this parallel to predeterminer position for quantifiers no longer existed by the beginning of the seventeenth century.

The 'one the best knight type' in OE was discussed earlier. It occurs throughout ME as well; Visser says that it occurs rather frequently in the fourteenth and fifteenth centuries (p. 225): In addition, this construction without a following noun is recorded in ME. Visser gives as earliest examples Chaucer:

c1368 I am so litel worthy, and ye so good, For ye
be oon the worthiest on lyve (Visser, p. 225)

c1374 For I have falsed oon the gentileste...and
oon the worthieste (Visser, p. 226)

Mustanoja says that this construction "...becomes stereotyped and begins to deteriorate before the end of the ME period" (Mustanoja, p. 299).

The types 'one the best,' 'one the best knight' and 'two the proudest knights' all die out in the Elizabethan age. Visser gives as last examples:

1611 He is one The truest manner'd (Visser, p. 225)

1590-6 He is one the truest knight alive
(Visser, p. 226)

1590-6 His stature did exceed The hight of three the
tallest-sonnes of mortal seed (Visser, p. 226)

Mustanoja, Visser, and Kellner all agree that these types die out in the Elizabethan era (pp. 297-300, p. 225, and pp. 110-1 respectively). Whatever the reason for this construction dying out, the fact that it did means that pre-determiner position is now occupied by quantifiers alone. This means that another exception feature is added to quantifiers sometime between the late ME period and the end of the sixteenth century.

The type 'the boys were all...'

In early ME, as in OE, most adverbs are morphologically derived. In OE the most common ending was the old dative-instrumental -e added to adjectives, and it is still used in ME (Strang, p. 272). Before the simplification of adjective inflections to -e and \emptyset , this ending distinguished an adverb from an adjective (in most of its forms). But when adjectives are simplified to two forms, adjectives will very often end in -e and be indistinguishable from the adverbs formed from them in this way. And also, when final -e is lost, these adjectives and adverbs will still be indistinguishable from each other. This leads to confusion in their use:

cl205/cl275	for his <u>wel</u> dede (Mustanoja, p. 649)
end 14th C	the condicioun of mannes goodes...ne
	last nat <u>perpetuel</u> (Mustanoja, p. 648)

Adjectives are often used in adverbial function in ME, and the use of adverbs instead of attributive adjectives--though

rare in early ME--is frequent in late ME. This confusion and use of one form for the other is increased by the existence of areas where adjectival and adverbial functions almost overlap--e.g. predicate adjectives and modal adverbs (Mustanoja, p. 314):

cl386 he nas nat right fat, I undertake, But looked
holwe, and therto sobrelly (Mustanoja, p. 314)

Under these conditions, the postposing of quantifiers is not a use that would make them look exceptional, or distinct from adjectives: they will simply look like the fairly frequent type of adverbs that used to end in -e and are now identical to their corresponding adjectives--unchanged adverbs.

However, -e as an ending to form adverbs is becoming inactive by about 1170, and the adverbial ending -lice (-ly in NE) is highly productive.⁶ The use of -lice increases greatly within the ME period (Mustanoja, p. 314) and becomes the regular method of forming adverbs.

Strang says that throughout the history of English there has been uneasiness about adjectives and adverbs identical in form, and that there has been a steady progress from the plain, or unchanged, type to the type in -ly--that is, progress towards making a clear distinction in form (p. 273; Curme, p. 335, agrees). The growth of the -ly form enables this distinction to be made.

Evidence of the growing tendency to make a clear dis-

inction between adverbs and adjectives by using -ly as the distinctive adverbial ending is the tendency to use it even on adjectives that already end in -ly. The OED (-ly) states:

"It was, down to the 17th c., somewhat frequently attached...even to adjs. in -ly, as earlily, godlily, kindlily, livelily, lovelily, statelily; but these formations are now generally avoided as awkward..."

In addition, Jespersen says that -ly was originally only added to words of native origin, but began later to be used with French loans as well. He gives as examples princely and scholarly (Jespersen VI, 22.93), which the OED dates from a 1548 and 1598 respectively.

So from late ME, there is a growing tendency to make unchanged adverbs distinct from adjectives, and it is done by the increased use of (only) one adverbial ending: -ly. In the middle of the sixteenth century it looks as though this tendency reached a peak. The use of quantifiers in postposed position is contrary to this tendency, and it seems reasonable to propose that towards the end of the sixteenth century a third exception feature is added to quantifiers as adjectives.

This part of the history of adverbs in English is an example of a principle of historical change proposed by Lightfoot (Personal communication): that languages practice therapy rather than prophylaxis. In OE adverbs were distinguished from adjectives by their -e ending. Inflectional

endings were later leveled to -e, although that change made adverbs indistinguishable from adjectives. Then the language extended the use of the -like form to remedy the problem that it had created.

Adjectives and quantifiers used substantively

The OE freedom in the use of adjectives as substantives continued on through ME as well: "In ME adjectives could be used substantively without any restriction and they remained, generally, invariable" (Mossé, p. 91). They could be used in the singular or plural to refer to persons, to animals, to things, and to abstract ideas:

end 14th C	that fre	'that noble (person)'
end 12th C	þe fremede	'the strangers'
end 14th C	þe broun	'the browns, the brown beasts, stags'
end 12th C	þa æðelen	'the noble (ones, i.e. deeds)'
mid 13th C	heore hot	'their hot(ness)'
end 12th C	unholde	'the enemies'
(All quotations are from Mosse, p. 91)		

The substantival use of adjectives is frequent in ME, as it was in OE (Emerson, cxxi; Mustanoja, p. 642) and is at least partly due to the same factors, in addition to being a survivor from OE: "The distinction between nouns and adjectives has never been a very sharp one, and the conversion of nouns into adjectives and vice versa is therefore a natural process" (Mustanoja, p. 642). Quantifiers in ME continue to be used freely as substantives, as they have been throughout the entire history of English.

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So in early ME, as in OE, both adjectives and quantifiers have the ability to occur freely as substantives, and what is a peculiarity of quantifiers in NE is not one in the earlier periods. But in late ME the substantival use of adjectives begins to occur less frequently and less freely according to Strang (p. 205):

"Adjectives in the late 14c could freely be used as head-words in reference to persons or things, singular or plural. But this usage had really become anomalous with the virtual, and in the 15c total, disappearance of adjectival inflections for number, and the growing pronominal distinctions for human/non-human gender... By the end of the period [1570] exceptions can be found (cf. 286), but something approaching the present restrictions on adjectives as head-words is in operation."

The use of an adjective substantivally with a singular referent falls into disuse in late ME and is only occasionally found after the ME period (Mustanoja, p. 645; Kellner, pp. 147-8). The substantival use of an adjective to refer to an abstract idea dies down in the second half of the fifteenth century and the first half of the sixteenth century, and although it is revived by Elizabethan authors, it dies out with them (Kellner, pp. 151, 154).

When the free substantival use of adjectives disappears, the distinction between the category of nouns and that of adjectives becomes much clearer, and quantifiers in substantival use look like nouns. Jespersen says that "The formal distinction between substantives and adjectives is more pronounced in English than in any other language of

the same family;..." (II, 8.13). This distinction (in NE) is the presence of the quite general -s plural and genitive inflection for nouns. Once a word occurs with this inflection, Jespersen says it is a noun (II, 9.21). Although -s was not a plural marker for adjectives, it spread in ME to some adjectives (as well as to a great many nouns which had had different plurals in OE); although only the strong masculine and neuter singular adjective had a genitive in -es, this nominal genitive was gradually extended to adjectives used substantivally, which then virtually became substantives (Jespersen II, 9.51).⁷ This is more evidence of the growing tendency to interpret adjectives used substantivally as nouns.

The growth in the use of the propword one is part of the same increasing distinction between adjectives and nouns as the decrease in the use of adjectives as substantives. Following are some of the examples proposed as the first clear instances of the propword one:

- 1338 a moche felde; so grete a one never he behelde
(Strang, p. 271)
- 1380 Wan he was armed on horsebak, a fair knyzt a
was to see, A iolif on wyb oute lak, bope
strong & fers was hee (Kellner, p. 161)

Mosse agrees with Strang and Kellner that the use of the propword one occurs from the middle of the fourteenth century; at that time it was still superfluous (Mosse, p. 91). Jespersen (II, Appendix X) gives the following as an approximate chronology for the development of the propword one:

1300	a good one
1400	the good one
1550	never a one, such a one, (the) good ones
1600	one good one
18th C	that one, a silver one
19th C	the one (we) preferred, those ones, a one to keep company, the ones that..., my one

There are various explanations about the reasons for this development. It allows the distinction of singular versus plural to be made (one/ones), and as evidence for the importance of this function there is the fact that in early quotations using the propword the plural is more frequent (Jespersen II, 10.82). The propword also fills a position in the sentence that is otherwise lacking (a noun became an obligatory part of a noun phrase); this is something like the use of it and there to fill the subject position (Jespersen II, 10.12). Tied in with the development of the propword are the loss of inflections and the relative 'fixing' of word order in ME. It is in the fifteenth century that the use of it and there to fill the subject position is well-established (Strang, pp. 96, 211), so filling the noun slot in a noun phrase fits in well with the time of that development.

The important thing to notice here is that it is in the sixteenth and seventeenth centuries that the use of the propword seems completely established: "Examples abound in the 16th and following centuries" (Jespersen II, 10.32). So the quantifier adjective, which is still completely free to stand alone as a substantive, has an exception feature

by this time.

An interesting observation is that some of the quantifiers could occur with one from OE onward; this was originally the numeral one, but as one developed its indefinite function, could be interpreted as the indefinite or, finally, propword one instead (Jespersen II, 10.22):

- 971 AEt aexhwylcum anum para hongap leohfaet
(OED: each)
cl200 þatt ilic an sholde witenn wel (OED: each)
al225 of euerich one (Jespersen II, 10.22)
cl225 Blescif ou mid euerichon of ðeos gretunges
(OED: every)
cl250 Him and ilc-on his kamel Wið watres drinc
ghe quemedede wel (OED: each)
cl250 par-inne is monyon hungri hund (Visser, p. 79)

This use may have contributed to retarding the re-analysis of quantifiers by decreasing their opacity as adjectives.

Quantifiers as a class

As was mentioned earlier, quantifiers, numerals, and a number of nouns of measure all could take the partitive genitive in OE, and then the of-periphrastic genitive in ME. It seems possible that in the earlier stages this was a genuine 'semantic' partitive--a part of a whole was referred to. The fact that all and both do not seem to occur with either a partitive genitive or an of-periphrasis until much later adds support to this possibility. Jespersen says that neither all of them nor both of them is found in Malory (according to Baldwin), but from Elizabethan times these expressions become frequent (Jespersen VII, 9.9₂).

The OED has as first examples:

- 1593 Yea, all of them at Bristow lost their heads
(OED: all)
1590 I am sure you both of you remember me
(OED: both)

The OED (all) says that the all of construction is "...comparatively modern, and is probably due to form-assoc. with none of, some of, little of, much of, few of, many of" and calls it rare except with pronouns. For both the OED says: "Both of is now used before pronouns and pronominal words, instead of the simple both...The use with a sb., as 'both of these arguments', is colloquial, but scarcely ever occurs in literature." This may be considered evidence that at this time these quantifiers were considered to be part of a class and the construction with of was extended to them for that reason.

Evidence of confusion before the re-analysis

Quantifiers have four exception features towards the end of the sixteenth century: their uses in postnominal and in predeterminer positions, their postposing ('the boys were all...'), and their free use as substantives. There is evidence that there was some confusion as to the status of quantifiers in the second half of the sixteenth and first half of the seventeenth centuries, which would be expected in a class whose category membership is opaque.

In the second half of the sixteenth century, quantifiers begin to occur with the -s genitive that shows that

they are being interpreted as nouns. Jespersen (II, 9.5₅) says: "The genitive plural is practically never found in those cases in which adjectives and adjectival pronouns can stand alone as principals, though Shakespeare has in manies eyes ... in manies lookes..." More examples:

- 1509 and none's death discuss (Curme, p. 174;
Curme's apostrophe in none's)
- 1548 If eythers worke (OED: either)
- 1565 sommes consciences OED: some)
- 1580 as great delight in thy company as ever I did
in anyes (Curme, p. 174)
- 1591 as eithers way them led (OED: either)
- 1593 of eithers colour was the other (OED: either)
- 1597 somes lot (OED: some)
- 1598 of manies ouerthrow (OED: many)
- cl600 they are both in either's powers (Schmidt:
either; Schmidt's apostrophe. Schmidt gives
a number of such examples)
- 1616 boths talke (OED: both)
- 1653 for somes unquietness (OED: some)
- 1675 to somes understanding (OED: some)
- 1715 both's witnesses (OED: both)
- 1823 some's Self-love (OED: some; quotation is
from Byron)

The OED (some) says the possessive form of some is now rare. "In early mod.Eng. sometimes inflected as a sb., with genitive both's" (OED: both). OED says of either: "...formerly sometimes inflected in genit."

More evidence of confusion as to the status of quantifiers is the existence of the following type of construction in which they occur after of, normally only a noun position:

- 1489 Whether of the both it shall fortune (OED: both)
- 1544 We be borne for neither of bothe (OED: both)
- 1584 The covetous man is the worst of both (OED: both)
- 1588 Neither of either, I remit both twain
(Jespersen VII, 17.8₁)

- 1621 Wives were taken in Israel by bills of Dowry,
and solemne espousals; but concubines without
either of both (OED: either)
1667 Either of both abhorreth one the other.
(OED: both)

The last example may be archaic; my other examples are in the range of 1540 to 1620. These constructions are occurring at exactly the time I propose the category of quantifiers as distinct from that of adjectives was being established, and the quantifiers inflected in the genitive like nouns in the previous set of examples occur during the same time span. Since adjectives had begun to lose their ability to occur freely as substantives, quantifiers began to look like nouns rather than (or in addition to) adjectives because of their continuing ability to be freely used substantivally. By the middle of the sixteenth century quantifiers had four exception features and their categorization as adjectives was becoming opaque enough so that, it seems, they were beginning to be interpreted as nouns (probably in addition to being considered adjectives because of the other constructions in which they also occurred). Things could have continued in this direction, so that they became full nouns, but instead it appears that a re-analysis took place and a separate syntactic category of quantifiers was established.

Changes caused by the re-analysis

In earlier periods of English, quantifiers could occur preceding a pronoun. OED says for all: "...with a pers.

or rel. pron. (In the nom. all was formerly often prefixed; e.g., all we, for which the mod. usage is we all, or all of us.)" This appears to be a very frequent construction in ME, judging from the numerous examples of it given by MED:

- cl000 Ealle hi sind on Godes resihre (OED: all)
- al225(?al200) purh heore vuela raede, beien heo
beo daedde (MED: bō)
- cl275 Summe hi weren wyse, and duden al bi his rede
(OED: some)
- 1382 Alle wee as shep erreden (OED: all)
- cl475(cl445) Resoun...allowiþ bope hem to be doon.
(MED: bōthe)
- al470 Here be within this castell thirty ladyes, and
all they be wydowys (MED: al)
- 1593 as all you know (Schmidt: all)
- 1594 Both they Match not the high perfection of my
loss (Abbott, p. 162)
- 1602 Into the madness wherein now he raves And all
we mourn for (Abbott, p. 161)
- 1611 Alle we like sheepe haue gone astray (OED:
all; quotation is from Authorized Version of
the Bible)

The 1611 example is from the Authorized Version of the Bible, which Strang (p. 140) says is almost entirely in the language of Tyndale (1525); I have no other examples later than Shakespeare.

Mustanoja says: "All followed by a personal pronoun occurs from OE down to earlier Mod. E. "ealle hi sculen þuder cume (Poema Mor. 174)" (p. 213), but gives no later example. Relying on Mustanoja's statement and on the range of the examples I have found, I assume that this type died out by the beginning of the seventeenth century, and thus just about at the time of my proposed re-analysis of quantifiers.

In Shakespeare this type may have already been marked and used only for emphasis; this is what Abbott (p. 316) seems to imply: "So "we" is emphatic in, "all we like sheep have gone astray," and in Hamlet, 11.2.151, in both cases, because of antithesis.

"Into the madness wherein now he raves
And all we mourn for." (Abbott's emphases)

At earlier periods, this use may have been felt as a substantival use of all in apposition to the pronoun we, but when other appositive types died out (a bushel venym) it may have been felt as anomalous and given way to all of us or we all. Otherwise it may have something to do with the establishment of the of-genitive following all and both. I have no real explanation for this construction dying out, but include examples of it because of its possible relationship to the re-analysis of quantifiers, especially in view of its dying out at the same time as the re-analysis.

A construction in which a pronoun and a quantifier, both inflected in the genitive, modify a noun, occurs from the beginning of the ME period:

all126 here elces riht hand (MED: ēch)
c1175 heore beira gast (OED: bo)
l377 her botheres myxtes. (OED: both)
c1387-95 at oure aller cost (MED: al)
a1450 for here beyre lou (MED: bō)
1513 our alleris offence (OED: all)
1536 your bothe Sovereigne (OED: both)

The MED (al, bōthe) says that oure alre(s) = 'of all of us';
her botheres = 'of both of them.'

There are numerous examples of this construction in ME (I have collected just over one hundred of them), all the way up to 1500. Although I have only two certain examples after 1500, as with the last type I am sure that it did not disappear instantly after that date; the problem undoubtedly lies in the difference between a good source for ME--the MED--and a less extensive source for data after the ME period.

It seems strange that a genitive plural marking should exist at so late a stage as the end of ME, but all of my examples show some sort of inflection, and almost all show a clear survival of an old adjectival genitive plural. Mustanoja says that the inflectional genitive plural of all is current in all dialects in ME in a partitive sense 'of all' and is particularly common after a possessive (p. 213). The MED says "...in ME, the gen. [of bō] occurs only in the phrases oure beire etc." The OED (all) says about this construction with all: "Later northern writers, to whom the -er had no longer a genitive force, added a second possessive ending, making alleris, alders, althers." Another unusual fact is that all and both are the most frequent quantifiers in this type, although they do not otherwise occur with a genitive in the history of English and only begin to occur with a following of plus noun phrase at the end of the sixteenth century. The addition of an -s ending seems to indicate that these quantifiers were felt as nouns; or

perhaps they were felt as equivalent to the possessive pronouns.

The construction without a following noun also occurs in ME; MED lists comparatively few examples:

all21 Ealre biscope curs he habbe, and here ealre
be her be ge witesse (MED: al)
?cl200 Ezperre bezze wass off soþfasst lufe filledd
(MED: either)

When it occurs without a following noun, the order is either with the quantifier preceding or following the possessive. the OED says (for either) that this use survived until the seventeenth century.

The construction with a noun following appears frequently later, although in a somewhat different form:

1592 both our remedies (OED: both)
1595 to all our sorrows (OED: all)
1596 for both our sakes (Schmidt: both)
1601 were you both our mothers (OED: both)
1602 to both your honours (Schmidt: both)
1607 to all our lamentation (Schmidt: all)
1627 both their haire (OED: both)
1752 both our unhappiness (OED: both)

With only a few exceptions,⁸ all my examples of the 'heora beire gast' type have the possessive pronoun occurring first and the quantifier following with some sort of genitival inflection. In addition, in the large majority of the cases the following noun is singular. However, in all the examples--without exception--that I have found from 1592 on, the quantifier precedes; the noun is either a sort of collective (e.g. unhappiness, haire, lamentation) that does not normally occur with a plural -s ending, or is a regular

plural. The plural occurs even where a singular would be expected because the quantifier undoubtedly modifies the pronoun instead of the following noun (e.g. the quotations from 1595 and 1601 above; Jespersen VI, 17.6₂). The following later quotations illustrate the same point:

- 1738 one brimmer to all your healths (Jespersen VI, 17.6₂)
1830 a sister died in both our infancies
(Jespersen VI, 17.6₂)
1915 I think she's been pulling both our legs
successfully (Jespersen VI, 17.6₂)

Jespersen gives some twenty-five other modern examples, and in all but one the noun is in the plural:

- 1710 Dr. Swift is all our favourite (Jespersen VI, 17.6₂)

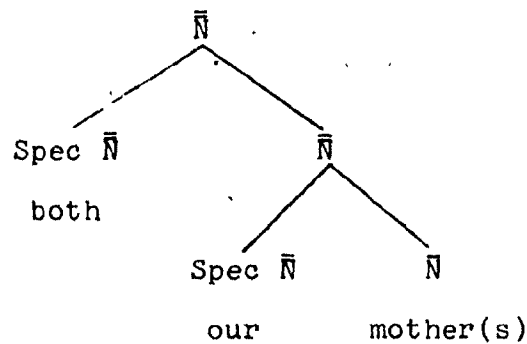
I have fourteen examples of the later type ('both our mothers') from Shakespeare's works alone (that have been quoted by Schmidt, OED, or Jespersen), so this is apparently a relatively frequent construction in spite of a dearth of examples from the sixteenth century. A sudden and fairly drastic change in a common construction must be explained. This change occurs at exactly the point at which I claim that quantifiers were established as a category distinct from adjectives. The shift in order and in the number of the following noun can be explained in terms of the re-analysis of quantifiers.

The first thing to be noticed is that in the earlier type the quantifier looks as though it is in the typical adjective position, following the determiner and preceding

the noun. In addition, the construction looks something like the older construction in which two adjectives modifying a noun would each be inflected; this is especially true for the later part of the period in which this construction occurs when the inflection may no longer be recognized as being genitival. A reasonable explanation seems to be that these old constructions were idioms or frozen forms--by the sixteenth century at least--and that they ceased to occur when the re-analysis of quantifiers took place because their construction, no longer understood as genitival, made them look like adjectival uses which were anomalous after quantifiers were established as a category distinct from adjectives. One other possibility is not unlikely: especially because of their -r ending (shared by the majority of the examples), they may have been re-interpreted at some time within the ME period as being adjectival possessive pronouns on an analogy to our, their, etc. (This -r is the normal strong OE genitive plural inflection for adjectives.) If this were the case, again this adjectival interpretation would be expected to disappear once quantifiers are a distinct category.

In the earlier stages of English, quantifiers would be generated under adjective nodes. This means that they would be on a 'coordinate' level with other adjectives and with the noun modified. After the re-analysis of quantifiers took place, the change of singular to plural in the following

noun can be explained if a well-established structural analysis of quantifiers is adopted in which the quantifier occurs on a higher, separate node:



In this structure, the quantifier 'modifies' the whole noun phrase our mother, and cannot be taken only with our. The quantifier both requires a plural noun when it occurs in the 'all the boys' type. For all, either a plural or singular noun can occur in this construction; perhaps plural is more common. This would explain the plural marker on the noun even when a singular form is actually the one required by the meaning.

It is tempting to think that this raising of the quantifier would also account for the loss of the 'all we' type; in NE a pronoun not immediately dominated by 'S' normally cannot occur in the 'nominative' case, so this would explain why the 'all we' type is lost. However, it does not explain why the pronoun cannot then occur in the oblique case: *All us like sheep have...

There are two more changes that took place at about the time of the re-analysis of quantifiers which can be explained by it, and which therefore lend some support to its existence.

In NE quantifiers cannot occur freely in conjunction with each other, but in earlier stages of the language their use seems to have been freer in this respect:

- c1275 Mid childe hii weren bope two (OED: both)
c1420 þey weron ʰas bleynd all bothe, y wys, as ever
was ony stok or stoune (OED: all)
1413 The scorpyon...byteth and styngeth bothe two
at ones (OED: both)
1561 They all endeuor...to kepe still eyther bothe
kingdome safe (OED: either)
1571 Yet would he retain with hym still Silan and
Sasilas, all both Lacedomonians (OED: both)
1600 To endeavour and strain themselves, both all
and some (OED: all)
1600 Both find each other, and I lose both twain
(OED: both)

I do not have any later examples like these; the only others I have found are the following:

- 1621 Wives were taken in Israel by bills of Dowry,
and solemne espousals; but concubines without
either of both (OED: either)
1667 Either of both abhorreth one the other
(OED: both)

These two quotations are of a somewhat different type than those in which two quantifiers occur adjacently, and may be ruled out in NE by a semantic rule rather than by a syntactic one of co-occurrence; I will not explore this problem further.

My examples of quantifiers used freely in conjunction with each other are all in the sixteenth century or earlier--

perhaps in the seventeenth century or earlier, if the last two quotations given above are of the same type. These data are compatible with the proposal that quantifiers were treated as normal adjectives earlier, and, in accordance with the uses of that category were able to be used in conjunction with each other freely--like, for example, the big bad wolf. More study is certainly needed to establish this point, but if it can be supported one of the major arguments for generating quantifiers as a separate category in NE does not hold for earlier stages; this is the necessity in NE of preventing the occurrence of more than one quantifier in the same noun phrase. (I am overgeneralizing quite a bit here; only some quantifiers must be prevented from co-occurring in the same noun phrase: some few men, *all some men.) If it does prove to be true that quantifiers can co-occur freely in OE and ME and until the re-analysis at the end of the sixteenth century, then the categorization of quantifiers as adjectives before that date is supported.

In OE, quantifiers could occur in a number of different positions, but not, apparently, in the most typical adjective position--between the determiner and the noun. This situation for quantifiers is not unique for adjectives; however, as possessive adjectives apparently did not occur in this position either;⁹ it was argued earlier that possessives should be categorized as adjectives. This means that the

inability to occur between the determiner and the modified noun did not make quantifiers distinct from (all) adjectives in OE.

In ME and in the beginning of ENE, although it seems to happen only rarely, quantifiers do occur in this position to a greater extent than in NE:

- l297 in þe al worlde (OED: all)
- al300 our bather slogh (OED: both)
- cl430 the bothe endes (OED: both)
- al500 Leeve you not this eich one (OED: each)
- l589 Your some sweete smiles (OED: some)
- l615 Your either person (OED: either)
- l615 Two rocks...whose each strength... (OED: each)
- l704 The massie Goblets...Whose each capacious womb
(OED: each)

Quantifiers are being treated like absolutely normal adjectives when they occur in this position. This list includes the latest examples that I have found of the construction (excluding examples like this much bread in NE), so it seems that the construction--though rare--was a possible one until the early seventeenth century. This lends some support to my proposal that quantifiers were re-analyzed and established as a category at about this time.

Conclusion

The distinctive syntactic features of quantifiers in NE do not distinguish them in OE from the category of adjectives. The variety of positions with respect to the modified noun and the ability to be used freely as substantives are features shared by quantifiers and other adjectives

in OE and therefore, I propose, a syntactic distinction in category membership between quantifiers and adjectives is not justified for OE.

Throughout the ME period changes in the usage of nouns, adverbs, and numeral, possessive and attributive adjectives resulted in the decrease of the syntactic features they shared with quantifiers; quantifiers began to look like a distinct class. They had acquired four exception features by the end of the sixteenth century, which proved to be enough to provoke a re-analysis in which a syntactic category of 'quantifiers' was 'created.'

This re-analysis is seen as the effect of the Opacity Principle, a possible principle of the theory of grammar. The distinctness of quantifiers as a class at the end of the sixteenth century was due largely to the effects of changes that had occurred in other categories in the grammar, and particularly to the growing distinctness in the category of adjectives from the categories of nouns and adverbs; for this reason, the history of quantifiers is seen as a good example of support for the autonomy thesis.

FOOTNOTES TO CHAPTER 2

1. For simplicity's sake I will refer to each, all, every, any, some, etc. as quantifiers throughout the paper, although I propose that no such category exists in OE and ME.
2. See, for example, Dougherty 1970 and 1971. These restrictions could also conceivably be semantic in that no reading--or a conflicting reading--is assigned and the sentence is thrown out if the co-occurrence restrictions are violated.
3. This analysis is not without problems, however. As stated earlier, after a possessive or demonstrative (se or pes) an adjective occurs in the weak form. This distinction in weak versus strong form would be more difficult to state if possessives are analyzed as adjectives. I have no solution to this problem, but can only point out that the use of the weak and strong forms was somewhat confused even in OE (Quirk, p. 69; Campbell p. 261), so that perhaps a simple way to state the distinction is not as valuable as it may at first glance seem to be. One might be tempted to propose that a semantic solution could perhaps be found in terms of the definite versus indefinite distinction; these words are sometimes even used as labels in place of weak and strong. However, this would seem to result in syntac-

tic rules (rules of case marking and agreement) being subject to semantic factors, which is contrary to this study's approach to linguistics.

4. It might be that the use of a partitive in OE had more to do with the semantics of a word than with (mere) syntactic restrictions, as evidenced by the conspicuous absence from these construction types of all and both--quantifiers that do not have a genuine partitive sense.
5. Note the use of the strong form of the adjectives here.
6. Originally -lice was not itself an adverb ending; -lic was a suffix used in deriving an adjective from a noun, and the -e is the same dative-instrumental case ending used to form adverbs from adjectives. But -e added to forms in -lic became so common that -lice was as a whole interpreted as an adverbial ending and added to words that the -lic form's meaning would not fit (Strang, p. 272).
7. Note that Jespersen here is talking about somewhat different usages than the ones Mustanoja (p. 277) calls French plurals on adjectives. However, when these French plurals occur with adjectives being used substantivally, they will make them look like nouns and so contribute to the growing loss of substantival function for adjectives; whether the -s is a French or English -s makes no difference in this case because it can be interpreted as the growing English plural -s.

8. The examples that do not fully conform to the pattern followed by all of the others are all with both (except one unclear case with all):

al400 both her love (MED: bōthe)
cl430 by their both assente (OED: both)
[Here the position conforms to the general pattern, but no inflection appears on both.]
cl400 boþe oure will (MED: bōthe)
al400 bothe our hoostis (MED: bōthe)
al500 bothe per thees (MED: bōthe)

In four of these quotations the quantifier occurs first; however, this deviation from the pattern may perhaps be explained by the fact that both bō and bōthe occur at this time and bō seems to normally follow its noun--either immediately or postposed to a position farther right in the sentence. So there may have been pressure to further differentiate these two forms by strengthening the positional difference between them. At any rate, there are many more examples with both that fit the general pattern exactly, and only these few that do not.

One more exception to the general pattern is:

Chaucer I have herd al youre opinion
(Jespersen VI, 17.6₁)

Al here could be adverbial and refer to your opinion as a whole, so this may not be an exception.

9. Kellner (p. 138) does, however, give three examples in which a possessive is preceded by se (Orosius: Se heora cyning and two in Blickling Homilies). Again, further study would be necessary to determine the point

for certain, but it seems (from Mustanoja, p. 298) that predeterminer position for possessives was the common one. Also note that heora is one of the indeclinable possessives (and the form heora is a genitive of the personal pronoun), so it could be interpreted as the genitive of a pronoun rather than as an adjective; this may be a fine line to draw.

CHAPTER 3

THE 'EACH OTHER' RECIPROCAL CONSTRUCTION

Each other is sometimes described as having become a compound, sometimes as being only the juxtaposition of each and other. Morris (p. 150) says that although each other is sometimes called a reciprocal pronoun it is not a compound; "...in such phrases as "love each other," "love one another," the construction is, each love the other; one love another; each and one being subjects, and other and another objects, of their respective predicates" (Morris, p. 150). Dougherty (1970, 1971, 1974) also claims that each other is not a pronoun or compound. The OED (each) says that each and other "...have however long become a compound..." Visser (p. 445) agrees that each other "...began to be realized as a kind of compound object...If the change in status should have been coeval with that of 'each at other' to 'at each other', and with the introduction of the genitive 'each other's', it could only have happened after the Middle English period..."

I will first present some different ways of expressing reciprocity that have occurred throughout the history of English, then describe the history of the 'each other' construction in more detail. The diachronic changes that have occurred in the 'each other' construction will be examined from the perspective of two synchronic analyses for NE--

one proposing that each other is a pronoun in NE, the other arguing that it is not. The analysis of the history of the 'each other' construction will be seen as providing evidence in the choice between these two analyses. One of the analyses will be seen to be able to explain the diachronic changes in the 'each other' construction as an example of a re-analysis provoked by the Opacity Principle. The proposed re-analysis occurs at the time of the historical changes which Visser suggests were the indicators of the realization of each other as a compound object; an explanation for the occurrence of the re-analysis at the time of these changes is offered.

Types of reciprocal constructions

English in earlier times had quite a few ways of expressing the reciprocal notion. Below are examples of eleven types (based on Visser, pp. 439-447) including the first and last occurrences of them listed by Visser (pp. 439-447) unless stated otherwise:

1) Simple pronoun--not very frequent in ME

Beowulf	Naes...long to. ðon ðaet þa aglaecean <u>hy</u> eft gemetton
cl400	But, syr meyr, May y take with the sojour? Som tyme we knowe <u>us</u> yore

- 2) Personal pronoun plus adverb: gemaenelice in OE;
emel, samen, and together in ME and later

Defensoris Liber Scintillarum Gebiddap eow
gemaenelice (translating: orate pro invicem)
1440 Two marchauntes louyd hem to-gydere

- 3) Personal pronoun plus preposition--very frequent in
OE and early ME

AElfred Ne untreowsige ge no eow betweoxn
cl250 Ofte sibbe men foken (=deceive) hem bi-twenen

- 4) Every other

cl175 We luuien ure efrec oðer us bi-twenen swa we
weren broðre
cl386 the lovyng children, that whilom loveden so
flesshly everich oother, wolden everich of hem
eten oother, if they myghte
1470-85 they...wounded everyche other dolefully

- 5) Either other

Trin. Coll. Hom. þesse wise beswikeþ her aþer oþer
cl522 if we loue either other

- 6) Other alone

al023. Ne bearh nu foroft 3esib 3esibban,...ne broþor
oprum
1620 I would have caused you to slaye other
1809 We know not other--oceans are between
(quotation is from Campbell)

Visser states: "This now obsolete usage occurred in later
use only in Scottish dialects, where it is also found in
other functions than as object (p. 443):

1785 when a youthful, loving, modest pair, In other's
arms, breathe out the tender tale

Except for Scottish dialects, it seems that this use of
other ceased at about the end of the sixteenth or beginning

of the seventeenth century.

7) Personal pronoun plus self

AElfred Alexandres aefterfylgendas...hu hie hie selfe
mid missellican gefeohtum fordydon

1605 Get thee gone; tomorrow We'll hear ourselves
again

Visser also lists:

1759-67 What can they be doing, brother?--quoth my
father,--we can scarce hear ourselves talk

However, this seems to be a questionable example of reciprocity.

8) No object (expressed) plus adverb: samod/samen, betwuh,
together, and mutually; very frequent with together in
ME and in Shakespeare

cl225 He hehte alle his peines & adele his cnihte
fon somed to fihte

1655 Making her believe that...as ofte as they shold
medle together, if she were...confessed by him,
she shold be cleere forgiven

1820 Scott The two brothers met as brothers who
loved each other fondly, yet meet rarely together

1847 Ch. Brontë We mutually embraced

1870 Tennyson For here two brothers one a king, had
met And fought together

1896 A. E. Housman Towns and countries woo together

1908 Wells I put my arms about her and we kissed
together

9) 'Q...other' Another way of expressing the reciprocal
notion was with other--without a determiner--and a quan-
tifier towards the beginning of the sentence to make
the reciprocal notion more distinct (Visser, p. 444).
Many quantifiers seem to be able to occur in this use;
of course, since other alone could express the recip-
rocal notion, it is impossible to tell how much the quan-
tifier contributed to the meaning.

all...other

cl380 Alle dedes and werkes of þe Trinite mai not be
departid from opir. (OED: other).

each...other

- c893 & swe aelc aeftor oðrum (OED: other)
c1522 the conflict of diuers qualified elementes in
our body, continually labouring ech to vanquish
other
1538 Ych one to the profyt of oðer (OED: each)
1611 Let each esteeme other better then themselues
(Authorized Version of the Bible; 20th century
version: each of you should humbly reckon the
others to be of more account than himself;
Jespersen II, Appendix 5.56)

either...other

- Andreas AEgber þara eorla oðrum trymede Heofonrices
hyht
1677 There seems to be a more connatural Transmutation
of either into other (OED: either)

every...other

- 1154 AEuric man sone raeuede oþer þe mihte (OED:
every)
a1500(c1465) Every kynge werred upon oþer MED: ever1)

none...other

- c1400 Noon of hem neuer tofore had seye oþer, ne noon
of hem knewe opirs persone ne knewe of opirs
comying (OED: other)
1422-1509 non of us may well helpe other

one...another

- 1548 Wone then labored another touerthrowe
1551 nature dothe provoke men one to healpe another
1597 It is certaine, that either wise bearing, or
ignorant Carriage is caught, as men take diseases,
one of another (Jespersen VII, 17.7)

outher...other

- c893 AEr heora aþer mehte on oþrum size zeraecan
(OED: outher)
a1450 Nys man in erthe...Shall...pees make, Er outher
of vs haue other slayne (OED: outher)

any...other

c1386 If eny [various readings any, ony] of us have more than other, Let him...part it with his brother (OED: any)

one...other

1604 tilting one at other's breast (Schmidt: other)

neither...other

c893 þaet naðer ne mehte on oprum size zeraecan
(OED: other)

whether (=which of two)...other

all23 Loc, hweðer þaera zebroðra oðerne ofer bide
(OED: other)

both...other

al500 But yef they loue both othir, thay shall be in gret myssais (MED: bōthe)

10) One another. This expression of reciprocity is current in NE; first quotation from Visser:

1526 Owe no thinge to eny man; but to love one another

11) Each other. This is also current in NE; Visser gives as first instance:

AElfric his suna ferdon, and ðenode ælc oðrum

Of these eleven ways of expressing the notion of reciprocity, (1) - (4) apparently died out before 1500, (5) died out in the early sixteenth century, and (6) - (7) had died out by about 1600 except for the use of (6) in Scottish dialects.

Regarding type (8) Visser comments: "The gap in the quotations given below between 1655 and 1820--if not due to

uncompleted research--is remarkable" (p. 442). He has many examples before 1655, and only those listed above after 1820. Perhaps the use in these later quotations represents a (new) innovation and is unrelated to the older use, or perhaps the use in these later quotations is archaic or poetic; three of the five quotations after 1820 are either Scottish or from poetry. One could argue, therefore, that type (8) also died out by about 1600 (and perhaps was reborn around 1820). In this case there are three ways of expressing reciprocity that died out by about 1600.

Type (9) is now obsolete (OED: other), or still occurs with each, but only archaically or poetically (OED: each). Most of the examples I have of the 'Q...other' construction are from the late sixteenth century or earlier, a few are from the early seventeenth century; the only ones later than this are:

- 1657 Priest and people interchangeably pray each
for other (Visser, p. 445)
- 1667 Milton Responsive each to others note
(OED: each)
- 1677 There seems to be a more connatural Transmu-
tation of either into other (OED: either)
- 1821 Keats Each unconfines His bitter thoughts to
other (OED: each)
- 1867 What was to be done, asked the enraged boys
one of another (Visser, p. 445)

Of these, the 1667 quotation is from Milton, whose work is not necessarily an accurate example of the English of his time. Visser states in his Preface:

"...it is with due circumspection that quotations have been adduced from works to which the following statement, made by Addison in praise of Milton in Spectator no. 285, is applicable: "Another way of raising the language...is to make Use of the Idiom of other Tongues."

The 1821 quotation from Keats is likely to be an example of the OED's statement about the poetical use of each...other. This leaves only three instances of the 'Q...other' type later than the early seventeenth century. It seems justifiable to say that the 'Q...other' construction with other alone had all but died out by the end of the sixteenth or beginning of the seventeenth century.

In the middle of the sixteenth century, the 'Q...other', type begins to occur with the other instead of with other alone; by 1600 this appears to be the normal construction:

- al548 When bothe the armyes were approchyng to the other (OED: other)
- 1593 Beauties red and Vertues white, Of eithers colour was the other Queene (OED: either)
- cl600 each doth good turns unto the other (Schmidt: each)
- 1865 Neither knew the other (Visser, p. 445)

Types (10) and (11) with one another and each other are probably the most frequent ways of expressing reciprocity in NE. One another has occurred only since the sixteenth century, but each other is recorded in all periods of the history of English from OE to NE. Each and other can occur in several different types of constructions:

- 1) Adjacent, as in 'The boys hated each other' (henceforth referred to as each other or each other sentences)

- 2) With a preposition preceding as in 'The women gave compliments to each other' (henceforth the 'to each other' type).
- 3) In earlier periods, with a preposition between each and other (henceforth the 'each to other' type), as in:
- 1615 How these two could be...members...participant
each of other (OED: each)
- 4) With a genitive/possessive marking as in 'They hoped for each other's ruin' (henceforth each other's).

All four of these types will be referred to as the 'each other' construction.

There are some important syntactic differences between the 'each other' construction in NE and in the earlier periods. These differences and their explanation will constitute the topic of the remainder of this chapter.

Each and other as adjectives in OE and ME

As was argued in the preceding chapter, each, along with the other precursors of NE quantifiers is best analyzed as an adjective in OE and ME and until a re-analysis at the end of the sixteenth century. Its different syntactic uses can be accounted for as the normal use of an adjective in substantival functions or as the normal use of a form of the (neuter) adjective in adverbial function.

Other can also be best analyzed as an adjective for the earlier periods of English; some of the important points of its history are given below.

Other originally served as the ordinal numeral for 'second.' It was not until the beginning of the thirteenth century that secound came into the language from French. Both oper and secound fulfilled the function of the ordinal for a time; by the middle of the fourteenth century secound became dominant (Mosse, p. 66; Strang, p. 272). The OED has quotations for secound from 1200 on, and last quotation for other as the ordinal 'second' as the following:

c1400 Costome ys þe oper kynde

Other had meanings besides that of 'second' from the earliest quotations in OE according to the OED:

'the remaining'

singular: c893 Hu Gallie wunnon on Romane,

Pene on opre healde (OED: other)

plural: c893 Hu Craccus se consul wonn wið

þa oðre consulas (OED: other)

'existing besides, or distinct from, that already mentioned or implied'

singular: c900 oððe on þysse bec oððe on oðre
(OED: other)

plural: c888 Be þære sunnan & eac be oðrum
tunlum (OED: other)

All ordinals in OE except other are declined like weak adjectives; other is always declined strong, even when occurring with a demonstrative or possessive pronoun (Strang, p. 302; Kispert, p. 118; Campbell, p. 261):

c893 Se oðer consul zehierde Diulius (OED: other)

c893 Hu Craccus se consul wonn wið þa oðre consulas
(OED: other)

al225 All so as on neil driueð ut þen oðerne (OED:
other)

In this way other differs both from ordinal numerals and from

all other adjectives including quantifiers, which occur in the weak form when the syntactic conditions for it are met.

As was normal for all adjectives, other could be used as a substantive, sometimes followed by a genitive plural or of plus a noun phrase:

Singular:

- c893 þa gesette Galerius 11 cyningas under him;
oper waes haten Seuerus (OED: other)
c897 Ðæt...se oðer beo araered from ðaem oðrum
(OED: other)
a1425 þe broper toke þe operes wif (OED: other)

Plural:

- 971 Waes heora sum reðra...ðonne þa opre (OED: other)
a1100 On manezum landum tilðbið redre ðonne on oðrum
(OED: other)

Followed by a genitive plural or of plus a noun phrase as in the 'all of the boys' type:

- c893 þær wearð Leostenas, oðer heora ladteowa, mid
anre flan ofscoten (OED: other)
13.. Ooper [various readings auper, ouper, oon] o
þam we most forga, For mai na man haf heuens
twa (OED: other)

In NE, other cannot be used in the singular without a determiner or other qualifying word (e.g. any, some, no); this holds true for its use as an adjective or as a noun:

*Other man drowned.

*Fred drowned, but other was saved.

In OE and ME this restriction did not hold. Singular other can occur without a determiner or qualifying word when used adjectivally or substantivally. This use for substantivized other is illustrated in the first, sixth, and seventh quotations above; the use of adjectival other without a determiner or qualifying word is illustrated by the first example

for c893 of other as meaning 'the remaining' and the second quotation (c888) for other as 'existing besides,...' In the plural, other has apparently always been able to occur without a determiner, as it does in the fifth quotation given above. But it is the ability of other to occur as a noun in the singular without a determiner that is of particular importance in the analysis of the 'each other' construction.

In the preceding section it was stated that type (9) 'Q...other' began to occur with the other instead of other alone at about the middle of the sixteenth century, and that the last normal instances of other could be said to be at the end of the sixteenth century or early in the seventeenth century. It seems that other began to lose its ability to occur without a determiner at about the same time in other constructions as well; the latest quotations in the OED for other in a singular nominal function (other than in the 'Q...other' type) without a determiner are the following:

- al694 Controversy, which I am less fond of every day
than other
- 1480 The barons sent to hym o time and other¹
- 1596 Other than him they haue none ouer them
- 1483 All be he of his parente his affynyte or other
- 1561 Neuer thinketh vpon other but to please hir²

These quotations and those of the 'Q...other' type suggest that other ceased to be able to occur in the singular without a determiner or other qualifying word by the beginning of the seventeenth century. The data given in the preceding

section on the use of plain other to express reciprocity agree with this date.

Other in its substantival use took the normal strong adjectival plural -e in OE and in early ME. But when final unstressed -e is lost, other occurs in exactly the same form in the singular and in the plural instead of using the -s plural ending of nouns. (By 1200 -es is the ordinary plural marking for nouns according to Morris, p. 53.) Some examples of other as a plural are found in Chaucer; Malory has only other, never others; Caxton has other:

Chaucer other sayn (Jespersen II, 17.75)

1477 Caxton The other deffended them with alle their puissance (OED: other)

1470-85 Malory But in no wise there was no knight about Sir Tristram that would believe that ever Sir Palomides would hurt Sir Tristram, neither by his own hands nor by none other consenting (Malory, p. 185; referenced by Jespersen II, 17.75)

1545 Ascham This ignorauncie in men whyche know not for what tyme and to what thyng they be fit causeth some to desire to be maysters and rule other which neuer yet began to rule themselfe (Culme, p. 174)

"The substantivized pl others begins to appear towards the middle of the 16th c" (Jespersen, II, 17.75). More usually has other but sometimes others, and the instances of others continue to increase until in Shakespeare others occurs as the plural far more often than other. Later authors continue to show both forms, but others is the more common one--except in Defoe (Jespersen II, 17.75):

1551 More the folysshenes of others (Jespersen II, 17.75)

- 1557 North That thy thoughtes were others than they
seemed (OED: other)
c1600 Shakespeare as I all other in all worths sur-
mount (Schmidt: other)
1611 Bible, Authorized Version To the others he said
in mine hearing (OED: other)

The -s plural for other is well-established by Shakespeare's time, or by about 1600.)

In OE and ME, other is most simply treated as (only) an adjective, with its substantival use treated as the normal use of an adjective in nominal functions. One could also suppose that other always existed both as an adjective and as a noun, as in NE; the discussion that follows does not depend on treating other as an adjective alone.³ The facts that other could occur without a determiner or qualifying word until about 1600 and that it occurred in the form other for both singular and plural from Chaucer to Shakespeare will be important in the analysis of the 'each other' construction.

The case system and each other

Although each other has occurred in sentences from OE to NE, with the more highly developed case systems of the earlier periods of English an interesting situation appears. In NE each other can be, as a whole, analyzed as the (surface) object of a verb as in:

The candidates hated each other.

But this is not the case for OE and early ME.

The OED (each) states:

"Originally this the reciprocal each other was a phrase construed as in 4 'Distributing a plural subject or object, each being the subject, and other (inflected in OE. o̅erne, o̅res, o̅rum, etc.) being governed in acc., genit., or dat. by a verb, prep., or sb."

As long as the inflectional system made clear distinctions between the various cases of adjectives (some of which may be used adverbially), each and other might occur adjacently but could not be analyzed as a unit because of their different inflections. All of the OE and early ME examples I have found of the reciprocal each other show different inflections for each and other. (One apparent counterexample to this statement will be discussed later.)

The following are typical examples of each other with other in the accusative (first two quotations), genitive, and dative:

- 1) a1000 Us is eallum þearf ̅æt ure aeghwylc o̅erne
bylde (OED: each)
- 2) O.E. Gosp. þa cnyhtas beheold aelc o̅erne (Visser,
p. 446)
- 3) c1200 þat we sholden biwepen ure elch o̅res sinne
(OED: each)
- 4) Wulfstan ̅eowian and ̅enian aeghwylc o̅rum (Visser,
p. 444)

In the first quotation above, o̅erne is an accusative substantivized adjective governed by the verb bylde; aeghwylc is in the nominative case since it is a substantivized adjective used as subject of the clause ure aeghwylc o̅erne bylde (or, rather, ure aeghwylc = 'each of us' is the subject).

So although aerhwylic and oferne occur adjacently, it is clear that they perform the separate grammatical functions of subject and object in the clause.

- 2) O.E. Gosp. þa cnyhtas beheold aelc oferne (Visser, p. 446)

In the second quotation oferne is an accusative case of the substantivized adjective functioning as the object of beheold. Aelc could be analyzed as a nominative case, under which interpretation the sentence has the two subjects þa cnyhtas and aelc. This is apparently the only interpretation allowed by the OED's statement that each in the 'each other' construction in older English was the subject; Visser (p. 445) suggests a two subject interpretation for sentences of this type and points out that the presence of two subjects was common earlier (e.g. "He Alexander cwæð") and occurs also in NE (e.g. "My father he said"). A second interpretation for aelc in this quotation is that argued for in the preceding chapter for the type 'the boys were all....' Under this interpretation aelc is an accusative neuter form of the adjective used as an adverb. Under either interpretation, aelc and oferne are again clearly performing two separate grammatical functions.

- 3) c1200 þat we sholden biwepn ure elch oðres sinne (OED: each)

In the third quotation both of these interpretations are not possible. Elch cannot be analyzed as an adverb

because of the presence of ure (= 'of us'); the only possible interpretation is that ure elch (= 'each of us') is a subject. If it is not possible to analyze elch as an adverb here, and if it is therefore necessary to analyze it as a second subject (with we as the other subject), then perhaps all other instances of each, all and both in the type 'the boys were all...' should be analyzed as second subjects rather than as adverbs. The two subject analysis accounts for all of these types in a uniform way, whereas the analysis proposed in the preceding chapter cannot account for the third quotation above in the same way.

But there is another possible interpretation for ure elch which is not inconsistent with the latter analysis. The precursors of NE modals (can, could, shall, should, will, would, may, might, must; henceforth pre-modals) should be analyzed as main verbs in OE and ME according to Lightfoot (1974). Lightfoot argues that, until a re-analysis occurred in the sixteenth century in which the syntactic category of 'modal' was created, the pre-modals exhibited the behavior of normal verbs, including the ability to take sentential complements. This means that, in this third quotation, we could be interpreted as the subject of sholden, and biwepen ure elch oðres sinne could be a sentential complement to sholden. Under this interpretation ure elch is the subject of biwepen and oðres sinne is its object. Elch is then the nominative case of the adjective used as a noun, and oðres

is the genitive case of the substantivized adjective modifying the noun sinne. This interpretation is consistent with the analysis of quantifiers proposed in the preceding chapter, and makes it unnecessary to rely on the two subject analysis for any sentences. As in the other quotations, elch and oðres are clearly performing separate grammatical functions and cannot be analyzed as a unit.

Unfortunately, there is a problem with this interpretation of the quotation. Lightfoot (1974) states that the subject of the sentential complement to a pre-modal "...was always deleted or moved out of subject position" (p. 27); the pre-modals shared this property with verbs like try (e.g. 'She tried to work hard'). In the cl200 quotation the subject (ure elch) of the sentential complement to sholden has not been deleted; it has been moved out of subject position but not out of the sentential complement altogether, which is what Lightfoot's examples suggest that he means. If so, perhaps Lightfoot's statement is too strong, and this is a counterexample to it. In any case, this is the only example of this sort that I have, so it could be at worst a single counterexample to the analysis proposed in the preceding chapter for the type 'the boys were all...'. It is not a possible counterexample to the claim that each and other in OE and early ME show different inflections when they occur in each other sentences.

This is also the only example before 1590 that I have

found in which each immediately precedes other's; however the cl200 example is to be interpreted, it does seem clear that elch oðres cannot be interpreted in the same way (i.e., as a unit) as each other's in a NE sentence like:

We should forgive each other's sins.

In this NE sentence each other's is a (group) genitive modifying sins (i.e., equivalent to 'the sins of each other').

This interpretation is not possible for the ME quotation because both elch and oðres would then be in the genitive case; the modern English practice of putting the genitive, or possessive, inflection on only the last word of a phrase--the group genitive--did not come into the language until the thirteenth century for an adjective/determiner plus noun (Jespersen VI, 17.1₁), and even later for other types of noun phrases; for noun phrase plus prepositional phrase, Mustanoja (p. 79) says that the first instances of the group genitive are in Chaucer. Also, if one tries to interpret elch oðres in the ME quotation in the same manner as each other's in the NE sentence above, one is left with no slot in the sentence for the genitive ure. More will be said later about the genitive/possessive of each other in the next section.

4) Wulfstan ðeowlan and ðenian aeghwylc oðrum (Visser, p. 444)

In the fourth example listed above aeghwylc is the nominative case of the adjective used substantivally as the

subject of ðeowian and ðenian, and oðrum is the dative object. Once again, as the inflections on aeghwylc and oðrum show, the quotation cannot be interpreted as an example of each other functioning as a unit.

In these four examples, then, and in all the other OE and early ME examples of the reciprocal each other which I have found in Visser, the OED, or elsewhere, it is not possible to analyze each other as a unit; the inflections on the words show that the two words perform two different grammatical functions.

There is an apparent exception to this statement in early ME:

1100 On minan lande & on aelces oðres mannes lande
(MED: ech)

In this quotation aelces, oðres, and mannes each show the genitive inflection. But this is not an example of the reciprocal each other; it is difficult to see how the sentence could even be interpreted with aelces oðres taken as expressing a reciprocal notion.

Other used to be the ordinal numeral meaning 'second' and it appears that this meaning continued on in the ME and NE phrase every other; this phrase means 'every second' or 'every alternate' according to the OED (other). Under this meaning the OED gives the following quotations, among others:

1480 For which raunsoun to be payed eche other
chalyce of england was molte and made in to
moneye (OED: other)

1588 Spending euery other day in such sporte
(OED: other)

It appears that either each or every could be used in this phrase. Morris (p. 148) states: "Each other sometimes = each alternate, every other, as--"Each other word I was a knave."--Gammer Gurton's Needle" (1575). This is not surprising, since every and each used to be more or less interchangeable, with every being somewhat more emphatic, and there is still sometimes no distinction made between them (Jespersen II, 7.811). In fact, every (ME everi(ch)) was originally a compound from OE aefre and aelch (Jespersen VII, 17.5₁).

The OED gives no earlier examples than 1480 of every/each other as meaning 'every second,' but since secound did not even appear in English until the beginning of the thirteenth century, other must have been readily interpretable as 'second' in 1100. It seems reasonable to suppose, therefore that aelces oðres in the 1100 quotation is an earlier example of the meaning 'every second' and is not an example of the reciprocal each other which is the concern of this chapter.

Another interesting sentence is:

al450-al500(1436) Spayne and Flaundres is as yche
othere brothere (MED: ech)

Here it seems yche othere must have a reciprocal notion and both yche and othere have the same ending which may be the weak and/or plural adjectival ending. At this late date

the -e on yche would not still be interpretable as the adverbial ending -e; yche could be interpreted as an unchanged adverb, but the position in the sentence is an unusual one for an adverb. Since this is the only example I have of this type, it may be a hapax legomenon, or, since it occurs at so late a date, it may be considered as a forerunner of the NE each other's.

These are the only two examples in OE and early ME in which each and other show the same inflection and could possibly be functioning as a unit. In OE I have no such examples, so for this period at least can state that each and other, though they may be found adjacent to each other, function as separate elements with separate grammatical functions as indicated by their case endings.

It should be mentioned that there do not seem to be any examples in OE or ME of each(...)other in which other is unambiguously plural. (In the dative the singular and plural of other are identical in form.) If the two words operate independently of each other there is no reason that I can think of for the absence of this type, unless it has to do with other being still felt as equal to 'the second' in which case the plural would perhaps be less natural.

Each other's

There is only one example of which I am aware in which each occurs in a sentence immediately preceding other's

before 1590--the early ME sentence discussed in the preceding section (cl200 þat we sholden biwepen ure elch oðres sinne). In this quotation it is clear that elch is a nominative case subject and does not belong with the genitive oðres.

At the end of the sixteenth century a (group) genitive of each other first appears; when referring to each other's I mean a phrase that can be taken as the genitive form of the unit each other. Visser dates the first appearance of each other's as 1590, but he groups together each other's and one another's and his early examples (before 1816) are with one another's:

- 1590 They strained one another's hand (Visser, p. 446)
- 1599 Why the devil should we keep knives to cut one another's throats? (Visser, p. 446)
- 1816 That we may see each other's faces (Visser, p. 446)

Schmidt references ten examples of each other's in Shakespeare, among them:

- 1590 we still did meet each other's man (Schmidt: each).
- 1593 You never shall, so help you truth and god,
Embrace each other's love in banishment;
Nor never look upon each other's face
(Schmidt: each)
- 1599 that the contending kingdoms
Of France and England, whose very shores look pale
With envy of each other's happiness
May cease their hatred; (Schmidt: each)
- 1607 make each to prescribe to other as each other's
leech (Schmidt: other)

The types 'each to other' and 'to each other'

In OE and ME each other does not seem to have occurred following prepositions. There are only examples with the

preposition occurring between each and other:

- O.E. Gosp. [H1] cwaedon aelc to ofrum (Visser, p. 445)
cl386 They foynen ech at other (Visser, p. 445)
1607 Pages blush'd at ham and men of heart Look'd
wondering each at other (Visser, p. 445)
1657 Priest and people interchangeably pray each
for other (Visser, p. 445)

This is the last example of the 'each to other' type given by Visser;⁴ he notes: "According to the OED 'each to other' still occurs arch. or poet." (p. 445).

So it seems that the type 'each to other' occurs from OE through ME and dies out--in normal use--by the middle of the seventeenth century.

The normal NE construction--the 'to each other' type--begins to occur at the end of the sixteenth century; Schmidt references two examples in Shakespeare:

- 1590 And lead these testy rivals so astray
As one come not within another's way
Like to Lysander sometime frame thy tongue,
Then stir Demetrius up with bitter wrong;
And sometime rail thou like Demetrius,
And from each other look thou lead them thus
Til o'er their brows death-counterfeiting sleep
With leaden legs and batty wings doth creep.
(Schmidt: each; A Midsummer Night's Dream
III, ii, 358-365)
1591 this shouldering of each other in the court
(Schmidt: each)

Visser lists as first examples of this type:

- 1657 The Horses...struck at one another (Visser,
p. 446)
1709 These Two Lovers seem'd...made for each other
(Visser, p. 446)

The explanation of the historical changes in the 'each other' construction

The following historical changes in the 'each other' construction have been described in the preceding sections:

- 1) Three types of reciprocal constructions died out at the beginning of the seventeenth century: type (6) Other alone, (7) Personal pronoun plus self, and (8) No object (expressed) plus adverb.
- 2) Each other's is first recorded at the end of the sixteenth century.
- 3) The last normal (i.e., not poetic or likely to be archaic) examples of the 'each to other' type are in the first half of the seventeenth century; the first examples of the 'to each other' type are at the end of the sixteenth century.

These changes all took place at about the same time, so, in keeping with the approach to historical linguistics described in the first chapter of this paper, one would look for one explanation that will account for all of the changes. One would also hope to find that such an explanation will be in terms of general principles of historical change; the explanation to be preferred is one that makes use of principles that are useful in the description of other diachronic changes. The determination of such principles contributes to the development of a theory of change.

There are two competing analyses of the 'each other'

construction in NE and two corresponding explanations of the historical changes presented in this chapter. One synchronic analysis for NE involves a semantic rule of interpretation for each other, while the other proposes a syntactic movement rule for each.

Dougherty (1970, 1971, and 1974) proposes an analysis of each other that involves a syntactic movement rule (henceforth each-Movement) to convert the first sentence below into the second:

- 1) ?The men will speak each to the other.
- 2) The men will speak to each other.

Both of these sentences ultimately derive from:⁵

- 3) Each of the men will speak to the other.

The relevant stages of the derivation are that a transformation called Quantifier Postposing applies to (3) and yields:

- 4) The men each will speak to the other.

The application to (4) of a second transformation called Quantifier Movement gives:

- 5) The men will each speak to the other.

or, Dougherty claims:⁶

- 6) ?The men will speak each to the other

Under the each-Movement analysis the base component will generate deep structures with the order of elements as in (3), but not as in (1), (2), (4), or (5)--all of which are related to (3) by some combination of the transformations

Quantifier Postposing, Quantifier Movement, and each-Movement. Each other is never present in deep structure, but is always the result of the application of these three transformations.

Jackendoff (1972) and Fiengo and Lasnik (1973)⁷ propose a semantic analysis of each other sentences. The essentials of a semantic analysis are that each other is freely generated in deep structure as a pronoun under noun nodes and that there is a semantic rule that assigns an antecedent to each other and a semantic interpretation to the sentence in which it occurs. Jackendoff points out that "...the environments of each other seem to be virtually identical to those of reflexives, and any analysis which does not capture this fact is missing an important generalization" (p. 173). He proposes that one rule can determine the antecedents of both reflexive pronouns and the reciprocal pronoun each other in an each-Interpretation analysis. This generalization would result in a more economical grammar than if the two types of pronouns had their antecedents determined by two separate rules.

I assume a grammar involving the trace theory of movement rules as proposed in Chomsky (1973) and developed in Chomsky (1975, 1976). In this grammar all semantic interpretation is to be done off a surface structure enriched with traces. A trace is left by a noun phrase in the position from which it moves in accordance with a syntactic

rule. In a grammar of this type it seems that the each-Movement analysis will be more complicated in one respect than the each-Interpretation analysis.

In order to determine a semantic interpretation for a sentence with each other in it, it is necessary to first determine the (possible) antecedent(s) of each other; the antecedent will determine part of the meaning of the sentence. In the each-Movement analysis, the possible antecedents of each other will be those noun phrases from which each could have been moved by the application of each-Movement in accordance with the conditions to which this rule is subject (see Chomsky 1973). When each is moved by the each-Movement transformation, it does not leave a trace since it is not a noun phrase. This means that when it comes time to do the semantic interpretation of a sentence with each other in it, there will be no indication of the position from which each was moved and hence no indication of the antecedent of each other. So it is necessary, in the each-Movement analysis, to have a semantic rule to determine the (possible) antecedent(s) of each other. This rule is needed in addition to the syntactic each-Movement rule, and the semantic rule to actually specify an interpretation for the whole sentence.

So, both the each-Movement and the each-Interpretation analysis need a semantic rule to assign a semantic interpretation(s) to each other sentences; the former needs a rule

of each-Movement and a rule to assign an antecedent to each other, while the latter needs only a rule to assign each other an antecedent. The each-Movement analysis is more complicated to this extent; unless it is simpler or more adequate in other ways (e.g. in the statement of co-occurrence restrictions on quantifiers and certain adverbs; see Dougherty 1970; 1971), the each-Interpretation is to be preferred.

This is one way in which to compare two synchronic analyses. In the case of the comparison of the each-Movement and each-Interpretation analyses, the assumption that (all) semantic interpretation is to be done off surface structure makes it difficult to find empirical predictions that differ between the two analyses and on the basis of which they can be compared.⁸ Historical data on the 'each other' construction provide an additional means of comparing the two analyses.

The each-Interpretation analysis of the diachronic changes in the 'each other' construction

For OE and ME, sentences containing the 'each other' construction with no subject expressed (other than each) are analyzed in the same way under either the each-Interpretation or each-Movement analysis of the diachronic changes considered here. Examples of this type of sentence are:

1590 With greedy force each other doth assail
(Visser, p. 444)

1483 Thenne eche kyssed other and embraced straytelye
(Visser, p. 444)

Whether each precedes or follows the verb in this type, it is analyzed as a substantivized adjective used as subject and other is the object of the verb (or preposition, or is used as a genitive modifier of a noun phrase). This type of 'each other' construction does not provide crucial evidence in deciding between the two explanations offered; it is in the analysis of other types of 'each other' constructions that the explanations differ.

Under the each-Interpretation analysis of the diachronic changes in the 'each other' construction, the general explanation is that in OE and ME each other sentences and the 'each to other' type are analyzed with each as an adverb and other as the object of a verb or preposition or used as a genitive modifier of a noun phrase. This interpretation becomes opaque towards the end of the sixteenth century, and a re-analysis of each other takes place such that it begins to be analyzed as a pronoun. A rule of each-Interpretation enters the language at this time to provide an antecedent for this pronoun--or perhaps the reflexive antecedent rule is generalized to determine antecedents for each other as well as for reflexive pronouns (if such a rule exists at this time; I will not go into this aspect further).

There is in OE no pronoun each other and no rule of each-Interpretation. I propose that each other and the

'each to other' type sentences are analyzed in OE with each as an adverb; this adverbial use of the accusative neuter form of an adjective was discussed in the preceding chapter. Other in OE is the adjective used as the substantivized object of a verb or preposition, or as a genitive modifier of a noun. This is possible because other alone (i.e. without a determiner or other qualifying word) can occur in substantivized functions in OE. This interpretation becomes opaque later for the following reasons.

First, the simplification of the OE inflectional system makes it less clear that each and other perform different grammatical functions in the sentence. Each begins to occur without a clearly nominative case ending or a clearly adverbial ending:

- 1398 Foules that lyue by blode ete not eche other
 (OED: each)
 1485 We will helpe eche other (Visser, p. 446)
 1573-80 They do hate ech other deadly (Visser, p. 446)

In sentences with no other subject than each, it is clearer that each and other have separate grammatical functions, for no subject can be found if each other is interpreted as a unit:

- 1258 þæt aehc oþer helpe þæt for to done (OED: each)

But in sentences like those in the first group quoted above, each and other could be interpreted as a unit; there is no longer any morphological marking to prevent such an interpretation.

Second, other begins to lose its ability to occur without a determiner or other qualifying word. Once other begins to require a determiner, as in NE, the OE analysis proposed here for each other is no longer possible. Other seems to begin to require a determiner in the second half of the sixteenth century; in the reciprocal type (9) 'Q... other' the other begins to occur instead of other alone at this time, and by about 1600 the other seems to be the normal construction, although (normal) instances of other alone still occur in the early seventeenth century. During this time, a few instances occur in which each and the other are adjacent:

- 1586 while each the other did deprave (Visser, p. 445)
- 1590-6 Striving each th'other to undermine (Visser, p. 445)
- 1590-7 Each the other from to rise restraine (Visser, p. 445)
- 1647 Justled each the other too much. (OED: each)

Third, other begins to take the normal -s plural marker for nouns, so other in the 'each other' construction is no longer interpretable as a plural. It is interesting to note that Scottish dialects formerly used each others to refer to more than two persons:

- al649 They mutually entertained and feasted each others at Christmas (Visser, p. 448)

Fourth, the interpretation of each as an adverb becomes opaque in the sixteenth century. I have discussed one aspect of this argument in the preceding chapter regarding quantifiers in general; the language's campaign against

unchanged adverbs seems to be quite strong in the middle of the sixteenth century. This means that the form each is then becoming opaque as an adverb; the tendency is to have adverbs end in -ly and so to be distinct from adjectives. But the position of each in each other sentences is also becoming opaque for an adverb at this time.

The position of each in the following sentences is post-verbal:

cl386 They foynen ech at other (Visser, p. 445)
cl340 hy louye| ech o|ren ase ham selue. (Visser,
p. 446)

The position in the second quotation is no longer a possible one for adverbs in NE; ech occurs between the verb louye| and the object o|ren, in what I will refer to as post-verbal position. Adverbs do not normally occur following the verb in NE except when at the end of the sentence (Jackendoff, p. 68)--unless the adverb precedes only other adverbs or prepositional phrases. The only sentences in which an adverb can occur between the verb and object in NE are those with a 'heavy'⁹ object (e.g. The giraffe selects carefully the youngest and tenderest leaves upon the tree that are within its reach.)

This restriction on adverb position does not seem to have always existed. Although I have been unable to find a statement in a grammar about this position, a cursory search through the OED and MED has given me a number of examples in which the adverb occurs post-verbally and in

which the object is not 'heavy:'

- c1000 Abraham {a undernam hefiȝlice {as word
(OED: heavily)
- c1000 Eadward king gret wel Willem biscop (OED: well)
- all22 Ic Agathe...grete wel seo wurðfulle AEðelred
(OED: well)
- c1250 Laban and his moder...fagneden wel his sondere
man (OED: well)
- c1330 Soriandes...oȝain ferd For to taken quicklike
e children (OED: quickly)
- c1400 And tat ye recorde wel e cumantemens of god
(OED: well)
- c1400 Seyntes gyfen accydentaly blisse, when þei be
objectis to glade oȝer seyntes; bot God hymself
deles, as he acceptis seyntes (MED: accidentalli)
- c1450(c1405) Hit is þe holsemyst pyne...To bringe
boldely a-bedde e best of e royaulme and arise
with e rænke (MED: abedde)
- c1449 We desyre...at ye woll...shew gracyeuxly
your special favour & benevolence to us
(MED: graciously)
- 1483 Bere esily thy harme & it shall greue the the
lesse (OED: easily)
- a1529 Note and marke wyl thys parcele (OED: well)
- 1566 Speake hardly thy minde (OED: hardly)

A much more comprehensive study would be required to allow a strong statement about the time at which this position ceased to be available to adverbs, but it does seem from the ease with which these examples were found that post-verbal position was productive for adverbs at one time. Since no example later than 1566 was found, I will state tentatively that post-verbal position ceased to be a productive one for adverbs sometime in the sixteenth century.

The position of the negative not during the sixteenth and seventeenth centuries is consistent with this statement. Not used to occur normally after the first verb, whether that was a main verb or a pre-modal, giving patterns like

'I will not say' and 'I say not.' In the early sixteenth century not began to occur before the main verb; the pattern was either 'I do not say' or 'I not say.' All of these patterns co-existed for some time; it was not until the late seventeenth century that not became much less common in post-verbal position (Lightfoot 1974, pp. 28-9). It may be that the type 'I spoke not' occurred later mostly when there was no (direct) object of the verb, so that this position was not then the same as what I have called post-verbal position for adverbs; more study would be needed to decide this point. But my purpose in referring to the positions of not is merely to establish that there was a tendency in the sixteenth century to avoid post-verbal position in favor of pre-verbal. This tendency may have operated simultaneously on adverbs and on the negative not. This change in the negative construction lends plausibility to the statement that post-verbal position ceased to be productive for adverbs sometime in the sixteenth century.

I propose that the fact that adverbs ceased to be able to occupy a post-verbal position as well as the language's campaign against unchanged adverbs in favor of the -ly type made the analysis of each as an adverb in the 'each other' construction opaque by the middle or end of the sixteenth century.

Fifth, the growing regularization of word order has an effect on the opacity of the analysis proposed for each

other in OE and ME. Jespersen (VII, 2.18) gives the following percentages (among others) of SVO order for the sentences that contain a subject, verb and object:

	<u>Prose</u>	<u>Poetry</u>
Beowulf		16
Alfred	40	
Layamon		48
Ancrene Riwe	66	
Chaucer	84	51
Shakespeare	93	86
Milton	88	71
Shaw	99.8	

It can be seen that there has been a steady increase in SVO order, which reached a peak at Shakespeare's time. By the end of the sixteenth century there would have been a strong tendency to analyze a given sentence as exhibiting this nearly general word order.

The increasing regularity in SVO order means that the number of each other sentences with no other subject expressed is probably decreasing; the analysis of these sentences with each as subject is certainly becoming opaque as the regularity of the order SVO increases, since in these sentences the subject each occurs after the verb:

Wulfstan *Geowian and Genian aeghwylc orðum*
(Visser, p. 444)

The increase in SVO order also has an effect on each other sentences in which a subject is expressed, e.g.:

1485 *We will helpe eche other* (Visser, p. 446)

In these sentences there is a subject, then a verb, and then each other. The tendency to analyze sentences as

showing the increasingly general SVO order could result in this type of sentence beginning to be analyzed with each other (as a unit) as the object. Since each is becoming opaque as an adverb, and each other is in the most favored position for objects, I propose that the pressure imposed by the growing regularity of SVO order contributed towards the re-analysis of each other as a pronoun so that it could, as a unit, occur as the object of the verb. Each child has to develop his own grammar of the language he is learning; if the number of each other sentences with no (other) expressed subject (e.g. the quotation from Wulfstan above) was rather small because of the increase in SVO order, the child has mainly the latter type (e.g. the quotation from 1485 above) from which to draw his analysis of each other. Being influenced by the large majority of sentences with SVO order, he tries to impose this order on as many sentences as he can. In the case of the second type of each other sentence the imposition of SVO order works if each other as a unit is analyzed as the object.

For these five reasons, the analysis of the 'each other' construction for OE and ME is becoming opaque in the sixteenth century, and a re-analysis was provoked at the end of the sixteenth century: each other was re-analyzed as a pronoun. This proposal offers an explanation for the changes in the 'each other' construction described earlier.

First, the loss of three types of reciprocal construc-

tions occurs in the early seventeenth century--just after the proposed re-analysis of each other as a pronoun. Earlier in the sixteenth century one another had been introduced into the language as a reciprocal. The later establishment of each other as a reciprocal would make it unnecessary to have so many other ways of expressing reciprocity, so some could easily be lost as 'redundant.'

Second, the fact that each other's is first recorded at the end of the sixteenth century is explained if such a re-analysis of each other is assumed to have taken place.

Under the analysis of each other proposed in this chapter for OE and ME, there is no reason for there not to be some instances in these earlier periods of each immediately preceding other's, as in the early ME quotation discussed earlier (cl200 | pat we sholden biwepen ure elch oðres sinne). However, in order for such instances not to be counterexamples to the analysis I propose, each and other's in such instances must not be analyzable as a unit. Thus, as in the cl200 quotation, it must be clear that each is a nominative subject (or adverb) and does not belong with the genitive other's.

However, one would not expect to find each other's in OE or ME within a prepositional phrase as in the 1593 and 1599 quotations from Schmidt:

1593 You never shall, so help you truth and god,
Embrace each other's love in banishment;
Nor never look upon each other's face
(Schmidt: each)

1599 that the contending kingdoms
 Of France and England, whose very shores look pale
 With envy of each other's happiness
 May cease their hatred (Schmidt: each)

The adverb (or substantivized adjective used as subject) would not be expected to occur in that position; nor would this each be expected to occur within an as-phrase as in the following quotation:

1607 make each to prescribe to other as each other's
leech (Schmidt: other)

So the analysis of the 'each other' construction which I propose for OE and ME correctly predicts that quotations like these could not occur in OE and ME. But once each other is re-analyzed as a pronoun, it is free to occur in all the positions available to nouns (provided that there is an eligible antecedent for it).

Third, the fact that the type 'to each other' begins to occur at the end of the sixteenth century is explained by the re-analysis of each other as a (reciprocal) pronoun. If each other is a pronoun it can be generated in any noun slot--for instance, after a preposition.¹⁰ The 'each to other' type dies out because adverbs can no longer occur following a verb, other begins to require a determiner, and perhaps also because it begins to look like a split compound.

Another bit of historical data also seems reasonable in view of the proposals put forth here, and thus offers some support for them. Visser (p. 447) states: "...there was formerly occasionally a tendency to provide the verb

with an accumulation of reciprocal objects and adverbs";
 he gives examples from Ben. Rule to 1682, including the
 following (from p. 447):

- Ben. Rule { a oþre heom gemaenlice betwuh on þisse.
 þenunge þeowian (ceteri sibi invicem seruiant)
 c1175 We luuien ure efrec oþer us bi-þwenen swa we
 weren broþre
 c1375 þan kissit ai ilk o er sammyne (OED inserts
 ilk between þai and oþer)
 1380 that thei sle to gidre hem silf (1534-Tyndale:
 that they sholde kyll one another)
 1613 his mind and place Infecting one another...
reciprocally
 1682 We mutually promote each other in the advan-
 tages of virtue

Like the loss of three ways of expressing reciprocals soon
 after each other was re-analyzed as a reciprocal pronoun,
 these data seem reasonable in light of the re-analysis pro-
 posed. Once there were two main ways (each other and one
another) of unambiguously expressing reciprocity, an accumu-
 lation of reciprocals in one sentence, like the accumulation
 in the language of many different ways of expressing re-
 ciprocity, becomes unnecessary.

So, the historical data presented here can be adequately
 explained with the proposal that the OE and ME analysis
 of each other sentences became opaque by the end of the six-
 teenth century and a re-analysis was provoked in which each
other began to be analyzed as a (reciprocal) pronoun. At
 this time a rule of each-Interpretation came into the lan-
 guage to determine an antecedent for the new pronoun. The
 explanation is in terms of the same general principle that

was used in the analysis of quantifiers in the preceding chapter--the Opacity Principle.

The each-Movement analysis of the diachronic changes in the 'each other' construction

Until the end of the sixteenth century, the analysis of the 'each other' construction is the same as that described in the previous section. Each is analyzed as an adverb and other as an object in each other sentences, and in the 'each to other' type. There is no rule of each-Movement in OE and ME. To propose that there was such a rule for these periods would miss generalizations; since each had the distribution of both adjectives and (at least some) adverbs, it is most economically treated as an adjective which can, like all other adjectives, be used adverbially in some of its cases. If each is treated as an adverb its position in each other sentences and in the 'each to other' type is accounted for as the presence of an adverb in post-verbal position, and no rule of each-Movement is needed.

When adverbs can no longer occur post-verbally, and each is opaque as an adverb form because of the increased use of the -ly form, the each-Movement rule is introduced into the language to produce the same output as in OE and ME--the each other sentences.

But there are two problems here. First, it looks as though the loss of post-verbal position for adverbs and the

introduction of each other's and the 'to each other' type occur simultaneously; this means that when the each-Movement rule is first introduced it does not produce the same output as in OE and ME, but produces in addition each other's and the 'to each other' type, neither of which existed before. Second, there is no reason given for the maintenance of post-verbal position for each when it is lost for all (other) adverbs. The each-Movement analysis for NE does not seem to allow a principled explanation for the introduction of the each-Movement rule or for the introduction of each other's and the 'to each other' type.

However, as has already been stated, the data on post-verbal position do not allow a strong statement to be made about the date at which this position was lost to adverbs. If the accumulation of more data were to show that the loss of post-verbal position for adverbs occurred at an earlier time than the first occurrences of each other's and the 'to each other' type, a more reasonable explanation can be offered for the diachronic changes. There would then be two stages involved in the change--the first in which adverbs lose the ability to occur post-verbally, the second in which each other's and the 'to each other' type are introduced.

The each-Movement rule at the earlier stage would look like this:

NP each V NP \Rightarrow 1 3 2 4
 1° 2 3 4

For the later stage, in which each other's and the 'to each other' type have begun to occur, the rule would look like this:

$$\begin{array}{ccccccc} \text{NP} & \text{each} & \text{X} & \text{NP} & \Rightarrow & 1 & 3 & 2 & 4 \\ 1 & 2 & 3 & 4 & & & & & \end{array}$$

The each-Movement rule for the earlier stage allows each to move only to immediately post-verbal position--its position in each other sentences or in the 'each to other' type. For the later stage the structural description of the each-Movement rule has been generalized to allow each to move over an unspecified amount of material to a position immediately preceding an NP; it can move over a verb and a preposition to yield the 'to each other' type, or over a number of words to produce each other's in a position in which it could not occur during any earlier period (e.g. 1599⁴ that the contending kingdoms Of France and England, whose very shores look pale With envy of each other's happiness May cease their hatred; Schmidt: each). Under this assumption about the date at which post-verbal position for adverbs was lost, the each-Movement rule is introduced in order to produce the same output as in OE and ME. At the later stage the rule is generalized; the generalization of a rule certainly seems to be a possible type of historical change. The question of why post-verbal position for each was maintained while it was lost for all other adverbs still remains unanswered. In addition, no explana-

tion is offered for the loss of three other ways of expressing reciprocity shortly after these changes in the 'each other' construction take place.

If the loss of post-verbal position for adverbs can be shown to occur at an earlier time than the introduction of each other's and the 'to each other' type, then the each-Movement analysis of the diachronic changes rests on a tendency, or desire, to preserve the output of an earlier period. But a tendency to preserve an earlier output can surely not be a general principle of diachronic change--it is contradicted by every historical change that takes place. Such a principle would not be expected to be developed as part of a theory of language change; it would merely predict that sometimes (possible) changes would not take place. And if the loss of post-verbal position for adverbs did occur at the same time as the introduction of each other's and the 'to each other' type, the each-Movement explanation faces another problem in explaining these changes. Not only is post-verbal position for each preserved while it is lost for other adverbs, but also not even the proposal of a 'tendency to preserve the same output' as a principle will suffice to explain the data, since the later output includes each other's and the 'to each other' type, neither of which occurred earlier.

Conclusion

The each-Interpretation analysis for NE allows a principled explanation to be made for the diachronic changes in the 'each other' construction that are described here. The explanation is based on a general principle--the Opacity Principle. The presentation of support for this principle contributes to the development of a restrictive theory of grammar.

The each-Movement analysis for NE also allows an explanation of the diachronic changes, but it is not clear that it allows any principled explanation to be made. The explanation offered here does not seem to support any principles of grammar or principles of change that may aid in the development of a theory of grammar or a theory of language change.

The adoption of the each-Interpretation analysis for NE provides a good explanation of the changes in the 'each other' construction, while the adoption of the each-Movement analysis does not, so the former analysis is supported as a synchronic analysis of NE while the latter is not.

FOOTNOTES TO CHAPTER 3

1. The OED gives quotations up to the present for this use: B.5a. "sing. One besides. (a) Without qualifying word; now only in some...or other, one...or other" (OED: other). All of the quotations after 1480 use other in one of these two idioms; since they involve frozen forms I assume that these later quotations do not give evidence of the normal use of other in the singular without a determiner or other qualifying word.

The type 'Q...other' is not the same sort of frozen form, so I propose does indicate a normal use of other without a determiner. In the 'Q...other' type, but not in the 'some/one...or other' type, the two parts of the form--the quantifier and other--can each perform a variety of different grammatical functions and often occur at opposite ends of the sentence, separated by many other lexical items that can vary freely. In the 'some/one...or other' type only a noun phrase can occur in between the two parts of the idiom.

2. The OED has also the following later quotations under the same heading:

1685 The Indians...thinking no other but I had saved the Indian's life
1690 'Tis impossible...to find any other but the setting of Mankind above the other kinds of Creatures

- 1755 This is no other than insulting a person
 1846 Peter was not likely to strike with other
than a right good will
 1895 He thought he could not do other than
 send the two prisoners for trial

I assume that 'no/any other but/than' and '(do) other than' represent frozen forms in NE and do not therefore give evidence of the normal use of singular other without a determiner or other qualifying word after 1561.

Of course, the 1561 quotation given in the text may also represent a frozen form; it is perhaps impossible to know exactly when a phrase becomes a frozen form.

But for my purpose here it is sufficient to be able to say that the quotations after 1561, at least, do not support ~~the~~ use of other alone as normal after this date.

3. If one analyzes other in OE and ME as an adjective only, and in NE as both an adjective and a noun, then 1600 is a good date to consider as the time of re-analysis. This is when other begins to be clearly treated as a noun by regularly showing the normal -s plural for nouns.
4. Visser gives one example later than 1657 which he considers to be of the same type, but it is with one another:

- 1867 What was to be done, asked the enraged
 boys one of another (Visser, p. 445)

5. Sentences are derived from deep structures and transformations apply to deep structures or to structures intermediate between deep and surface structures, but for clarity and brevity I will speak loosely throughout this discussion about the derivation of one sentence from another and the application of a transformation to a sentence, and will omit many details that are irrelevant to the purposes of the discussion.
6. Fiengo and Lasnik (1973) have pointed out that Quantifier Movement, as formulated by Dougherty, will not, in fact, yield this last sentence (6); Dougherty must either extend the range of positions to which Quantifier Movement can move each or change his each-Movement rule so that it can move each from a position within Aux directly into a position immediately preceding other. Both of these changes seem possible, and either would solve the problem.
7. Although Fiengo and Lasnik's formulation of an each-Interpretation analysis has serious defects as pointed out by Dougherty (1974), and is untenable as presented by them, these defects are largely the results of the particular analysis presented. Dougherty's strongest arguments are against the particular semantic interpretations assigned to each other sentences by Fiengo and Lasnik, and not against a semantic analysis per se.

8. For instance, the type of argument that suggests that the meanings of the two following sentences differ and that they should not be related by a transformation has no foundation in a grammar in which semantic interpretation is done off surface structure:

Each of the children hit the others.
The children hit each other.

The interpretation of sentences like these must ultimately be determined of course, but this involves the semantic rule of interpretation for each other sentences--a rule that must be present in either the each-Movement or each-Interpretation analysis, and seems to be independent of which analysis is selected. This sort of consideration cannot choose between the two analyses when they are to be part of a grammar in which semantic interpretation is done off surface structure.

9. The 'heaviness' of a noun phrase has to do with its length and complexity; a precise specification is not necessary for my purpose here since the objects in the quotations to be presented are clearly not 'heavy.'
10. I am assuming, of course, an interpretive analysis of all pronouns in which they are freely generated in the base under noun (phrase) nodes and are assigned an antecedent by an interpretive rule; see, for example, Jackendoff (1972), Dougherty (1969).

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