Part Three

English Quantifier Systems
Chapter Seven

Simple existential quantifiers

7.1 Heuristic preliminaries

In Parts I and II we have examined a considerable variety of analyses of the English quantifiers, often made quite bewildering by the fact that the survey was far from exhaustive and by the further fact that many, if not most, of the analyses reached conclusions which contradicted the conclusions of other analyses. Even the two most recent theories, which we might assume to have benefited from an examination of earlier theses, are startlingly opposed, for Lakoff and Carden have suggested that quantifiers are underlying predicates, Jackendoff that they are underlying nouns or, in some cases, nominalised 'articles'. We can reasonably suggest three fundamental factors at work in the production of these contradictions: (i) basic theoretical opposition, e.g., 'parts of speech' grammar vs. transformational grammar, is certain to produce opposing analyses; (ii) as quantifiers form a notoriously difficult part of the grammar of English, indeed, one suspects, of the grammar of any language, one ought to expect a wide range of opinions; (iii) there is such a wide range of grammatical distribution for each individual quantifier that a close analysis of one quantifier may lead to a
hypothesis quite different from that suggested by the grammar of another quantifier. Faced with such difficulties, it would be surprising if every student of the English quantifier system did not feel at least a twinge of sympathy with Kruisinga when he remarks (1932a:129):

"The chapter on indefinite pronouns [i.e., quantifiers; RMH] may be considered the lumber-room of the pronouns; and a lumber-room may be as convenient in grammar as it is in a house."

Fortunately, however, there are a number of heuristic devices available which will enable us to cut down the variations in the grammar of quantifiers to manageable size; of these we shall employ two. But before mentioning what they are, it is advisable to emphasise the modest status of these devices. One can never approach a scientific problem in vacuo; one must first have some notion of previous theories and one must also have some idea of the kind of hypothesis which is likely to be fruitful. In other words, in order to get the 'right' answers one has to know what the 'right' questions are. This implies that the kind of heuristic decisions which we make below are to some extent a product of the hypothesis which they themselves are supposedly to help us reach. Yet this does not have the seriously damaging consequences which might be suspected,
namely that the complete argument is a vicious circle. One important reason for this is that it is hoped that the heuristic devices have a certain grammatical justification in themselves. But there is still another reason: if the hypothesis suggested below is incorrect, then this can stem from three causes. Firstly, it may be that the grammatical theory employed, here a version of recent transformational grammar, could be inadequate. We have stated as an a priori that it is adequate, but it can hardly be denied that there is ample room for doubt. Secondly, it may indeed be the case that the wrong heuristic devices were used, the 'wrong' questions asked. Thirdly, it is all too possible that the argument constructed below will be incorrect. If we bear all these factors in mind, it will be recognised that the appropriateness of the heuristic devices employed, although important, is not necessarily crucial in determining the adequacy of the hypothesis eventually proposed.

In view of the wide range of quantifiers, the first device which we must employ is one that divides the quantifiers into various subsets. It is interesting to note in this respect that Lakoff and Carden agree with Jackendoff in making a bipartite division and that this division assigns the several quantifiers to virtually the same subsets. Lakoff and Carden make a distinction between 'absolute' and 'relative' quantifiers, this terminology being derived from Partee (1970:157). In
the first subset are included quantifiers such as many, five, few, cf. §6.2; in the second we find some, every, all, none. The semantic intuition here is that the first type of quantifier describes the 'absolute' size of a set, whereas the second describes a certain proportion of a set or the 'relative' size of a set, cf. Partee (1970:157-58), Lakoff (1970d:396). For a number of reasons, which it would be premature to consider at this moment, I find this terminology misleading, but terminological quibbles aside, there is certainly some evidence that such a division is justifiable. Much of the evidence stems from the fact that the semantic intuition closely accords with a syntactic distribution. As Lakoff and Carden both have pointed out, and as we have observed in §5.3 and elsewhere, 'absolute' quantifiers occur grammatically in postdeterminer contexts whereas 'relative' quantifiers do not. The reason why Lakoff and Carden are in general (but not complete) agreement with Jackendoff is that the latter also uses this syntactic criterion for subdividing quantifiers; thus Jackendoff's Group II quantifiers cannot appear in postdeterminer position whereas his Group III quantifiers do appear there. If there are discrepancies in the placement of individual quantifiers, as is the case with few, cf. §6.2, this is largely due to differing claims about the grammatical distribution of the quantifier involved.
Despite the unanimity displayed above by otherwise contradictory theories, it is by no means certain that the division is as simple as that. The thinking behind this assertion is that the grammar of quantifiers is characterised not by one surface distinction with one semantic correlate, but by two surface distinctions with two semantic correlates. Thus I would claim that there are three fundamental groupings of quantifiers (this, of course, is to ignore for the present Jackendoff's inclusion of a group, etc. in his study, an inclusion which we shall show below to have much justification). Of course, it may be argued that it is not too difficult, if the linguist is sufficiently pedantic, to find \( n \) distinctions, which would lead to the creation of at least \( n+1 \) subsets. But I would claim that the two criteria named below are the only simple and discrete criteria to be found in surface structure (and heuristic devices cannot readily appeal to the theoretical construct of underlying structure) which are also directly associable with semantic intuitions or facts.

The two surface syntactic criteria of which we shall make use are: (i) whether or not the quantifier can appear in postdeterminer position, cf. above and Carden (1970c); (ii) whether or not the quantifier can be directly preceded by and be within the scope of the negator \textit{not}. Both criteria, of course, are applicable only at surface structure. Applying these two criteria
to the three quantifiers *some, many and all, we find the following paradigms of grammaticality, where *some is the most restricted and many the freest of the three:

(7.1) a Some cricketers write poetry
b *The some cricketers write poetry
c *Not some cricketers write poetry

(7.2) a Many cricketers write poetry
b The many cricketers write poetry
c Not many cricketers write poetry

(7.3) a All cricketers write poetry
b *The all cricketers write poetry
c Not all cricketers write poetry

Although the criteria applied here appear to be relatively clear-cut, there are some cases where classification of a particular quantifier is problematical - this is especially true of *few. Thus, although we find:

(7.4) The few cricketers write poetry
it is extremely difficult to ascertain whether this is an instance of *few or a few, and consequently whether or not *few appears grammatically in postdeterminer position. Furthermore, (5) is ungrammatical:

(7.5) *Not few cricketers write poetry
but if we accept Lakoff's claim (1970d:395) that few is derived from not many, then it is obviously the case that the ungrammaticality of (5) is independent of the criterion (defined linearly at the surface) of not-
precedence; not only that, but few ought to accept the paradigm of many throughout. This, of course, leads to a natural solution to the status of few in (5), but before we can follow that through we shall have to examine few and not many in more detail, cf. §6.2 and Chapter 8. Another case in which our criteria are not wholly adequate, it might appear, is in the relative unacceptability of:

(7.6) ?*All boys came to the party

But since (3a) is certainly acceptable this must be due to aspects of the syntax which are outside the rather narrow criteria we are using here; again, this is a matter to which we shall return later, in Chapter 9.

The first of the semantic criteria to which the above syntactic criteria relate is approximately that given by Partee (1970) and adopted by Lakoff: only those quantifiers which can appear in postdeterminer contexts describe the size of the set relative to one’s expectations, cf. Lakoff (1970d:396, note 6); the other quantifiers simply describe the proportion of the full potential set of referents, cf. §4.2, whether that be the total proportion (all), a partial proportion (some) or

1 American speakers especially find (6) considerably more acceptable than I do. Indeed, I find the sentence totally unacceptable in the intended meaning, where all ≠ only. We shall return to this point in Chapter 9.
the null proportion (no/none). However, I would claim that it is the second criterion which is of greater importance. This criterion is that there is a set of universal quantifiers and a set of existential quantifiers. The terms used here are, of course, borrowed from symbolic logic, and an explanation of their meaning can be found in any elementary handbook on logic, e.g., Reichenbach (1947:87-91). Crudely speaking, and for linguistic purposes only, a universal quantifier indicates that the set of referents of the collocating noun is equivalent to the full potential set of referents; an existential quantifier indicates that reference is to some nonnull, but non-equivalent, subset of the full potential set of referents. Thus all is a universal quantifier; some and many are existential quantifiers. It should be noted that no/none has no surface position within this classification. Rather, it must be regarded as the negation of an existential quantifier, compare the position in logic, again outlined in Reichenbach (1947:91-96). To some extent this is in conflict with the findings of the first criterion, but we shall assume that the second criterion overrides the first. Regrettably, the second semantic criterion correlates with the syntactic criteria only in a rather complex manner: only those quantifiers which cannot appear in postdeterminer position but which can appear immediately after not are universal quantifiers. All the other quantifiers are existential quantifiers. Even these generalisations are
not wholly true: for example, each, although it is a universal quantifier, does not appear after not:

(7.7)  *Not each cricketer writes poetry
But this, we shall suggest, is the product of some other syntactic restriction, cf. §9.5.

We are now in a position where we can set up a systematic classification of quantifiers on the basis of our first heuristic device. Combining the semantic and syntactic criteria we may call the three resultant types of quantifiers non-negatable existential, negatable existential and universal quantifiers. However, for reasons which will become apparent only as this study proceeds, we shall call the first two classes simple and compound existential quantifiers respectively. For heuristic reasons once more, we shall assume that there is a paradigmatic quantifier for each subset: for simple existential quantifiers it is some; for compound existentials, many; for universals, all. It should be understood that in claiming that these three quantifiers may act as models we are not further claiming that, for example, every universal quantifier behaves like all, or that many is the only compound existential. All that is being claimed is that any universal quantifier will behave in broad outline as all does, and we shall, indeed, have to spend some considerable time in explaining how and why individual quantifiers diverge from the proposed paradigm. In fact, we shall be able to indulge
ourselves with the paradox that a paradigmatic quantifier may itself diverge from the paradigm, cf. the unacceptability of (6) compared with (3a). Nevertheless, the basic facts can be clarified with the help of the following diagram:

<table>
<thead>
<tr>
<th>(7.8)</th>
<th>Context</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Preceding Negative</td>
</tr>
<tr>
<td>some</td>
<td>No</td>
</tr>
<tr>
<td>many</td>
<td>Yes</td>
</tr>
<tr>
<td>all</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Before we move on to the second heuristic device, it is essential to note that one quantifier (at least) does not fit neatly into the above discussion: this quantifier is any. Not only does this quantifier have a highly restricted distribution, as we have noted previously, especially in §§2.3 and 3.3, but it appears to share attributes of both existential and universal quantifiers. That it is connected with the former class can be exemplified by the following sentence:

(7.9)  I didn't read any pre-papers which is virtually synonymous with:

(7.10) I read no pre-papers

Only the negation of an existential quantifier could indicate reference to a null set. Any's relation to universal quantifiers is seen in the sentence:

(7.11) Any politician suffers from a credibility gap
Although (11) is not paraphrasable by:

(7.12) All politicians suffer from a credibility gap

it is clear that in both cases reference is to the full potential set, and thus any is behaving there very much as if it were a universal quantifier. Further evidence that any has many of the attributes of a universal quantifier is to be found in the fact that its grammatical distribution is similar to that of either. However, since we have not shown that either is a universal quantifier this argument is rather premature. Because the grammar of any is so complex we shall not attempt an analysis of it until we have discussed the rather less complex quantifiers.

We can now proceed to a discussion of the second heuristic device, which, fortunately, is considerably clearer in outline than its partner. All quantifiers in English can occupy two positions: (i) immediately preceding a noun; (ii) as the head of a partitive construction with a 'definite' noun phrase. Examples are:

(7.13) a Some men are bachelors
       b Some of the men are bachelors
(7.14) a Many men are bachelors
       b Many of the men are bachelors
(7.15) a All men are bachelors
       b All of the men are bachelors

Although Lakoff and Carden make no significant distinction
between the two constructions, which causes considerable difficulty for the reader of their work, cf. Chapter 4, there can hardly be any doubt that such a clear distinction must be relatable to some important grammatical facts. Once again, it would be premature to discuss what these facts are now, but we shall assume that there are some, and therefore discuss non-partitive and partitive constructions separately. As this is purely an assumption it could be quite incorrect, but that is a problem we shall only consider in due course.

7.2 The structure of noun phrases

In the previous section we were able to establish, by means of two heuristic devices, a preliminary classification of the English quantifiers, and thus we can now proceed to an analysis of the structure of individual types. In the remainder of this chapter we shall concentrate on the grammar of simple existentials, of which we shall consider some the paradigmatic example. Although the restriction to one type of quantifier at a time is necessary in view of the complexity of the situation, it cannot ever be satisfactory to discuss simple existentials exclusively; obviously there will have to be occasional reference to other types of quantifier.
We have already observed that many different underlying sources have been postulated for quantifiers, from 'indefinite pronouns' to verbs and from nouns to 'straightforward' quantifiers. Whatever the respective merits of these proposals, it can hardly be denied that in surface structure some is a quantifier or determiner. Thus an appropriate phrase marker for the surface structure of (16) might be (17):

(7.16) Some boys entered

(7.17)
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 S
 / \  
 NP  VP
 /   /
 Art N  V
 /     /
 Quant boys entered
     some
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In order to justify the claim that some has exactly that same status in underlying structure we have to satisfy two conditions. The first of these is that such a structure, or at least one which does not depart from that in (17) to any significant extent, is adequate as an analysis of noun phrases. The second, which is only applicable in the case that the first condition is satisfied, is that it is adequate to consider some as being dominated in underlying structure by the branch of the NP which dominates it in surface structure.
Since it is the first condition which is clearly prior, that must be the one which we examine firstly. We may take as the standard formulation of base rules to generate constituents of NP's that given in Chomsky (1965:107):

\[
(7.18) \quad \text{NP} \longrightarrow (\text{Det}) \text{N} (S')
\]

where Det and S' are optional and the prime function of S' is to introduce embedded relative clauses. However, Bach (1968) gives a detailed critique of Chomsky's formulation and he concludes (1968:121):

"It is reasonable to propose that all nouns come from relative clauses based on the predicate nominal constituent."

Bach's alternative to Chomsky's formulation contains two rules, which will not be significantly different from (1968:92):

\[
(7.19) \begin{align*}
\text{NP} & \longrightarrow \text{Det} + \text{one} + S \\
\text{S} & \longrightarrow \text{Det} + \text{one} + \text{Aux} + \text{be} + \text{Predicate nominal}
\end{align*}
\]

Thus the sentence:

\[
(7.20) \quad \text{I spoke to the anthropologist}
\]

has an underlying structure which closely corresponds to:

\[
(7.21) \quad \text{I spoke to the one [the one was an anthropologist]}
\]

The rules in (19) form an exclusive alternative to that in (18) for otherwise, as Bach points out, (20) would be derivable from two sources, and that is quite undesirable,
although it cannot be ruled out on a priori grounds. Bach (1968:93-104) lists six arguments in favour of deriving nouns from a relative clause. It would be prodigal of space to repeat these arguments in full here, but a brief summary is necessary in order to judge the validity of his claim.

Firstly, there is the fact that:

(7.22) The idiot called me up yesterday is ambiguous. As Bell (1972:25) points out, the ambiguity is describable in logical terms by the contrast attributive - referential. Attributive usage is referentially successful if there is just one object which satisfies the description; referential usage is successful if the speaker and hearer know of just one object being referred to - although the description need not be true. Bach shows that this distinction can be made by distinguishing between restrictive (= attributive) and nonrestrictive (= referential) sources for idiot, thus:

(7.23) a The one who is an idiot called me up yesterday
    b The one, who is an idiot, called me up yesterday

The second argument derives from the grammar of negation; a sentence such as:

(7.24) The professors didn't sign a petition is three-ways ambiguous (at least). Negation of the following three elements can occur, as is shown by
possible stress and intonation variations: professors, sign, petition. If Bach is correct in arguing that negation is always underlying sentence negation, then the nouns must be derived from an underlying sentence, as he suggests. Thirdly, there is the fact that nouns may contain tense elements, although admittedly only traces of them remain. Thus consider the tense references of wife in:

(7.25) a Before I met my wife she worked in a library
    b After I divorced my wife she went to Afghanistan

Perhaps more obvious evidence of this is to be found when the prefix ex- occurs:

(7.26) My ex-wife is living in a commune in Afghanistan

Fourthly, Bach explains the grammar of attributive adjectives, which cannot be derived from an underlying relative clause where the adjective is predicative, by positing (28) as the source of (27):

(7.27) I saw the alleged killer
(7.28) I saw the one [\textit{the one was allegedly the killer}]

Bach's fifth argument is that 'definite' NP's occur grammatically in predicate nominal constructions only under very restricted conditions, as is partly exemplified by (29), cf. further Bach (1968:103):
(7.29) a He is the person I was talking about

b ?John is this philosopher

Bach claims that his proposed derivations for nouns permit justifiably generalisations to be made about such phenomena. The last of Bach's six arguments is that if I own no marsupial then (30) fails for lack of reference:

(7.30) My marsupial scratched me yesterday

The failure of (30) to refer, Bach claims, must be explained by postulating:

(7.31) Something which I have is a marsupial as part of the underlying structure of (30).

Our problems would be considerably eased if it were the case that all of Bach's arguments were equally correct, but unfortunately this is not so: arguments 3 and 6, at least, seem false. Counter-examples to argument 3 can be found with a number of nouns which are not capable of having tense markers or some other indication of tense, as is the case with, for example, mother:

(7.32) a *My ex-mother has remarried

b *My future mother is pregnant

Anderson (1968) suggests that my mother must be related in an adequate grammar to the woman who bore me, and some further justification for such an underlying representation, extended to father and some instances of parent, is to be found in Hogg (1973b). Observe that there is no way of altering the tensed verbal in who
bore me in order to produce *my ex-mother or *my future mother. On the other hand, with my wife we can postulate the following three forms:

(7.33) a my wife : the woman to whom
              I am married

b my future wife: the woman I am to marry

   c my ex-wife : the woman to whom
              I was married

This means of accounting for the difference between my mother and my wife, although superficially not very different from Bach's, is in fact sufficiently distinct for it to provide no direct support for his exact derivation. A preferable derivation only necessitates the introduction of lexicalisation rules along the lines suggested for both in Chapter 4, which do not obviously contain predicate nominal constructions. With respect to his sixth argument, (30) could also be derived from:

(7.34) The marsupial which I have scratched
  me yesterday

and this will explain the failure of reference equally well. For some justification of that derivation see Lyons (1967).

Of the remaining arguments, I believe that only the first is totally convincing. Thus: argument 2 is dependent on the claim that element negation is inadmissible in underlying structure; argument 4 is admitted by Bach
(1968:102-3) to be dependent on some rather obscure elements in the grammar; argument 5 is possibly the strongest of these three, but it must be noted that Bach's case depends on the equivalence of the \textit{N is N} relation in sentence (29a) and that in:

(7.35) John is a philosopher

Whereas (29a) is an expression of identity, this is not the case with (35), which expresses a membership relation. It is not at all certain that Bach's analysis explains or clarifies this distinction, cf. Plötz (1972: esp. 82ff.) for further discussion. But even if only one of the above six arguments is wholly convincing, this is nevertheless sufficient ground for supposing that noun phrases have a considerably greater complexity in deep structure than is supposed by Chomsky (1965) and other studies within that framework. And we shall certainly be able to see in Chapter 12 that the first argument, concerning attributive and referential sources for NP's, is neatly paralleled by the distinction between cataphoric and anaphoric reference which is drawn there. Furthermore, this distinction is related to the occurrence of restrictive and nonrestrictive relative clauses.

The problem arises, however, that it appears to be the case that Bach's arguments only justify deriving the from some position outside the noun phrase (for the examples supporting argument 1 only relate to 'definite' noun phrases). Yet, and this seems only reasonable,
Bach wishes to extend his hypothesis about the position of the to the quantifiers, as the following statement shows (Bach, 1968:106):

"It is natural to think about adapting a system of operators (quantifiers) like those used in logical systems and allowing these operators to function with the variables in the deep structures of sentences. The class of operators will include the more abstract elements underlying such forms as articles, some and the like."

Furthermore, Bach (1968:106-7) shows that if we abstract quantifiers from noun phrases in underlying structure, then we account for the ambiguity of:

(7.36) She wants to marry a man with a big bank account

The two interpretations of (36) can be clarified by the representations of (37):

(7.37) a Some $x \left[ \gamma x \text{ has a big bank account and she wants to marry } x \right]$

b She wants $\exists \text{some } x \left[ \gamma x \text{ has a big bank account and she marry } x \right]$

The difficulties facing us are now fairly clear. We have seen that the behaviour of the is best explained by assuming that in underlying structure it is not a component part of the noun phrase with which it is associated in surface structure, contra Chomsky (1965)
and others. Furthermore, there is evidence that the same is true of quantifiers such as some. Therefore we must look for some position in underlying structure where the, some, etc. may be placed outside their collocating NP, yet which guarantees their being generated at the correct point in surface structure. Also, it has to be determined whether or not the underlying position of the is the same as that of some. This latter question must be delayed for the moment, until we turn to a consideration of the grammar of the in Chapter 12, but that must not deter us from searching for an adequate analysis of some.

7.3 Some underlying requirements

By far the simplest and most appealing answer to the question "To which grammatical category does some belong?" is: "Some is a quantifier", and this is precisely the answer exploited by Force (1968) and also, it would appear, Lakoff (1971c). Indeed, the correctness of that answer can hardly be denied if we accept, further, that some is the 'basic' or paradigmatic quantifier. But observe that the above answer is a definition and that by itself it gives no explanation. What we need to do is relate some, or the category of quantifiers, to other grammatical categories, so that we may observe both distinctions and equivalences. Answering by definition is of no help here; it is the relationship
of some to previously well-defined categories which is crucial. Let us accept, approximately following Chomsky (1965), that those categories are N, V and A (noun, verb and adjective), although this ought not be taken as a denial that verbs and adjectives may have the same underlying source, as is suggested by Lakoff (1970b: 115-33).

We have already examined, in Chapter 5 and especially §5.3, the claims of Lakoff and Carden that some is an underlying predicate, and concluded from this examination that there is rather more negative than positive evidence concerning those claims. There is therefore no need to repeat those arguments here. In Chapter 6, however, we examined the suggestion by Jackendoff that some is a 'nominalised article', in other words that it is an 'article' in deep structure which is converted by some transformation into an NP in surface structure, cf. Jackendoff (1968:439). This proposal, it will be recalled, was rejected for three reasons: firstly the consequent phrase marker had too much 'structure'; secondly, there was insufficient motivation for the transformations which were proposed; thirdly, the underlying structures assigned to some a status which was felt to be too distant from that assigned to quantifiers such as many.
It is this third point which is most important here, for Jackendoff suggested that *many* was a noun in underlying structure. One of Jackendoff's arguments in favour of such a hypothesis was the similarity between the behaviour of some noun phrases expressing quantity, such as *a number*, and the behaviour of some quantifiers. In this context it is therefore extremely interesting to note the very close semantic relation between (38) and (39):

(7.38) A number of men came to the party
(7.39) Some men came to the party

Although it would probably be an exaggeration to claim that the two sentences are paraphrases of one another, cf. §6.1, it is certainly the case that they are almost so, and therefore we should attempt to suggest analyses which are very similar, in order to reflect this fact. In §6.3 we already disposed of one objection to closely parallel analyses, namely that in (38) *men* is preceded by *of*, whereas this is not so in (39); in that section we showed that this difference is a purely surface one, caused by the operation of the Adjacent NP Constraint, repeated below:

(7.40) *

This explanation only holds, of course, if *a number* is an NP in surface structure, whereas *some* is not; but
there is very little reason for believing otherwise, and so (40) may be deemed adequate, but see the further discussion referred to above.

Perhaps the primary criterion which Jackendoff invokes to justify assigning different underlying structures to number and some is that the former can be preceded by the, the latter cannot, cf. Jackendoff (1968: 437). Thus we find:

(7.41) a The number of men
       b *The some men

However, in contradiction of the validity of this criterion, there is an interesting restriction on occurrences of number when preceded by the: this is that the predicate phrase associated with the number must refer to the size of the quantity referred to by the number. This restriction does not apply to most other nouns which Jackendoff relates to number, for example, group. So we find:

(7.42) a A number of men came to the party
       b A group of men came to the party

(7.43) a *The number of men came to the party
       b The group of men came to the party

Conversely, it is only the number which permits quantity-referring predicates:

(7.44) a The number of men who came to the party was five
b *A number of men who came to the party was five

c *The group of men who came to the party was five

Revealingly, however, we do find:

(7.45) The group of men who came to the party were five in number

An explanation of this last sentence will be offered in Chapter 8.

The above distributions strongly suggest that it is incorrect to consider *a number and the number* as differing only in 'article': there appears to be some more deep-seated distinction which may be applicable only in terms of two different lexical items, number₁ (with *a*) and number₂ (with *the*). To what extent such an analysis ought to be pushed is a difficult question, but it does seem reasonable to suppose that number₁, if such an ad hoc distinction is permissible, has a distribution much closer to that of *some* than Jackendoff is suggesting: *some* can never be preceded by *the* and *number* can only be preceded by *the* at the cost of significant syntactic and semantic changes, changes more radical than are normally found with the alternation between *the* and *a*. Finally, it is also the case that *the number* has another restriction which *the group* does not have, for the former cannot occur with a 'definite' NP following of:
(7.46) a *The number of the men who came to the party was five
b The group of the men who came to the party were disgusted by the orgy

At the very best, Jackendoff's distinction between some and a number is on dubious foundations.

Let us suppose, therefore, that a number and some can be assigned similar underlying structures. If we accept Jackendoff's structures for Group I quantifiers (cf. 1968:426), then both a number of men and some men will have the approximate structure of:

(7.47)

Of the problems which were raised in Chapter 6 about such a structure, that which is most relevant here is the question of subject-verb concord. The facts which we know about concord suggest that the most likely candidates for determining concord are number and some; certainly, men is in quite the wrong position. But number is a singular count noun; although it is somewhat perverse to try and assign a status of countability to some, (47)'s structure demands that this be done, and
the only possible answer is that it is uncountable. Whether it is singular or plural for matters of concord is impossible to answer, and the reason for this, one suspects, is that it is totally the wrong question to ask.

Fortunately this latter point is not too important (as might be predicted), for the behaviour of a number is sufficient to show the inadequacy of (47) for purposes of assigning concord. It was already observed in §6.3 that when a Group I word is involved there is often variable subject-verb concord, i.e., sometimes the verb is singular, sometimes plural. How that is to be explained is not easy to see, but need not worry us unduly at present, for when that word is a number the concord is stable. But it is, as it were, stable the wrong way: only plural concord is found, as is exemplified by:

(7.48).a *A number of men is standing on the corner
b A number of men are standing on the corner

Although this is not what would be predicted by looking solely at a number, it is of course predictable from the behaviour of some men, so there is absolutely no reason to suppose the concord to be in some way irregular.

Given that the plural concord of (48b) is quite regular and that (47) combined with our present knowledge of concord predicts otherwise, there are two
possible options, apart of course from the eternal hope that the problem will just go away. Firstly, we could alter the rules for concord when an NP of NP structure is involved. But this change would be completely ad hoc and it offers no generalisations, especially as the majority of such structures do not show such concord. In this context compare, for example, (44a) or:

(7.49) A wagonload of potatoes has crashed into the pub

Secondly, we could alter the underlying structure of the noun phrases in question, a suggestion which has already been broached a couple of times. This is indeed a much more plausible alternative, since it offers a motivated explanation of why a number of men has different syntactic functions and is semantically different from other phrases which have a similar surface structure: a number of men has a rather different underlying structure.

It seems fairly clear that the alterations in the underlying structure will have to perform two tasks: firstly they will have to remove a number from the scope of the NP dominating men; secondly they will have to ensure that the new position of a number is not one which potentially allows it to 'interfere' with the concord relation between men and the predicate. Both requirements lead to one unavoidable conclusion, which is that a number cannot be in the same sentence in underlying structure as men will be. Any reader who is
sceptical of this claim may wish to construct for himself structures which would fulfill the above two conditions and yet have the two NP's in the same sentence. The most plausible might be something like:

(7.50)

\[
S \rightarrow NP \quad NP \quad VP
\]

\[
a \text{number} \quad \text{men} \quad \text{came to the party}
\]

It may be correct to claim that this satisfies the conditions which are set out above, but the cost is considerable. To name but one point, if we accept (50) then it is very difficult to define the notion of logical subject in structural terms (and the problem is worse if we accept the claim of McCawley (1970) that English has underlying Verb-Subject-Object order). Even if (50) is the most plausible solution, there is still a large credibility gap.

We have already examined, in Chapter 5, one hypothesis which would permit a number to be in a different sentence in underlying structure from that in which it appears at surface structure: this is the hypothesis presented by Lakoff and Carden. If they are correct in claiming that some is an underlying higher predicate, then there can hardly be any objection to assigning the same status to a number. In that case (48b) would have the following underlying structure:
Consider the status of the higher sentence in (51):

(7.52) *Men are a number

Doubtless neither Lakoff nor Carden would wish to claim that (52) is grammatical: 'relative' quantifiers do not appear in predicate position in surface structure; nor do I wish to discuss the meaninglessness of (52), for that is a general property belonging to many underlying sentences within the Lakoff-Carden theory, compare (53a), although (53b) is slightly better:

(7.53) a *Men are some
    b ?Men are many

Both the above problems are serious, but we have noted them before, and therefore I merely want to discuss at present the rather trivial matter of number concord in (51). Generally speaking, the subject and complement of the copula be must be identical in number (this is a 'refined' version of an adage well-beloved of primary schoolteachers and which there is no reason to doubt). Thus (54) is ungrammatical:

(7.54) *Whales are a mammal

Admittedly there are some instances where that rule is broken, for example:
(7.55) Men are a swine

(55) seems a not inappropriate remark for a more extreme feminist, but note that it has a meaning rather different from that of:

(7.56) Men are swines

Nor is it possible to get round the objection to (52) by modifying it to look like (56):

(7.57) Men are numbers

That is a perfectly acceptable sentence, even if it is highly restricted and metaphorical, and it has nothing whatsoever to do with (51).

It would therefore seem to be the case, given the above facts, that an underlying structure such as (51) runs into the problem of contradictory number concord. The most appealing solution is to claim that concord is irrelevant at the stage of (51), but it must be dubious whether this does more than sweep the difficulties under the carpet. Nevertheless, I would not wish to claim that the objection outlined here is in any way sufficient to discredit the Lakoff-Carden theory, for then it would have been more appropriate to discuss it in Chapter 5. Rather, given that there are several other, and more serious, objections to that theory, this is a minor point which may help to bring one to a final rejection of Lakoff and Carden's proposals for the underlying source of quantifiers.
Although we have been able to determine fairly conclusively, by means both of the evidence given by Bach and of other facts concerning the distribution of some and a number given above, that some is not in underlying structure in the same NP and probably not even in the same sentence as the noun with which it collocates in surface structure, it is also quite obvious that the current hypotheses which have attempted analyses of the syntax and semantics of quantifiers cannot be justified and thus even if they do meet some of the conditions which an adequate analysis of quantifiers must meet, they have to be rejected. We must therefore examine other aspects of current analyses of noun phrases to ascertain the status of quantifiers. Indeed, we have already done this to some extent, by considering the claims made in Bach (1968), and it is to an extension of his position that I now wish to turn.

In §7.2 we observed that a sentence such as (36), which is repeated here for convenience:

(7.36) She wants to marry a man with a big bank account

is ambiguous, and that this ambiguity provides some justification for the claim of Bach (1968) that noun phrases have a source outside of the NP's in which they occur. The kind of source which they might well have, and the type of structures which would necessarily be involved, are discussed in more detail by McCawley
that it is necessary for semantic representation to separate a clause into a 'proposition' and a set of noun phrases, which provide the material used in identifying the indices of the 'proposition'."

Thus for:

(7.58) The man killed the woman

McCawley suggests the following semantic representation:

(7.59)

```
S
   Proposition
     \   /  \
    x_1 killed x_2 NP:x_1
          \   /  \
           the man NP:x_2
               the woman
```

The question which immediately presents itself is what justification is there for and what status have the indices $x_1, x_2$. It is, of course, quite clear what their purpose is: as McCawley (1971:223) states, sentence (58) asserts that $x_1$ participated as agent in a certain event of killing and that $x_1$ is a man.\(^2\)

The first of these assertions is contained under the node

\(^2\) (58) asserts more than this, as McCawley points out, but that is taken for granted here. More important, however, is whether one assertion is that $x_1$ is a man or that $x_1$ is the man. The latter problem is explicitly ignored by McCawley, yet it seems to me that it is essential for his argument that he investigate it.
'Proposition' and the second within and under the node 'NP:x₁'. In other words, x₁ and x₂ are indices which designate the referent or intended referent of the noun phrases which each dominates.

It is not my intention to object here to the goals which McCawley hopes to reach by his introduction of indices, for we have surely seen enough evidence to suggest that they are largely correct. The real question is: is the introduction of indices in the manner of (59) justifiable and have they significant surface correlates? This is an important problem because of the undoubted fact that one of the principal tasks of the derivation process from (59) to (58) will be to delete all indices. In this respect McCawley's indices are remarkably akin to the "disappearing quantifiers" of Carden (1968) discussed in §5.2. Therefore it is hardly surprising that the use of indices is justified on similar grounds. For example, McCawley (1971:229) claims that (60) and (61) ought to have the semantic representations of (60') and (61') respectively:

(7.60) Everyone loves himself
(7.61) Everyone loves everyone
The problem (and McCawley's solution) is only a variant on the problem (and 'solution') of Equi-NP which was discussed in §5.2, and therefore our objections must be the same; the only distinction is that here we are discussing coreference within one underlying sentence, whereas in the case of Equi-NP the coreference is over two sentences. It is clear that the introduction of indices in (60') and (61') is intended to show that there is coreference which leads to reflexivisation in
(60) but not in (61). But this is done at some considerable cost, and not only in terms of the highly complex so-called semantic representations which have to be transformed into relatively simple surface structures. There is also the point that (61') does not clearly show that both instances of everyone refer to the same set of potential referents. But ought not this to be handled by a statement that $M = N$? Such a statement will have to be carefully phrased, in order to avoid false claims about a sentence such as:

(7.62) Some men hit some men

If we follow McCawley this will have the structure:

(7.62')

$$
\begin{align*}
S & \rightarrow \text{Proposition} \quad \text{NP:} \quad M \\
& \quad \quad \quad \text{some} \quad M \\
& \quad \quad \quad x \quad S \\
& \quad \quad \quad \text{Proposition} \quad \text{NP:} \quad N \\
& \quad \quad \quad \text{some} \quad N \\
& \quad \quad \quad y \quad S \\
& \quad \quad \quad \text{Proposition} \quad \text{hit} \quad x \quad y
\end{align*}
$$

3 It so happens that in the case of (61) it is also probably true that $x = y$. At least, this is my understanding of McCawley's highly inexplicit argument. See below for further discussion of this possible equivalence.
Furthermore, although $M = N$ in (62'), this would not be so for the underlying structure of:

(7.63) Some men hit some women

Yet, in both (61') and (62') the identity statement is necessary, for only from that can the equivalence or non-equivalence of the referents of the surface NP's be assessed. Thus in (61') $x$ and $y$, as mentioned in note 3, are equivalent. This is deducible as follows: $x$ indicates reference to $M$; $y$ indicates reference to $N$; every potential referent of $x$ is designated; every potential referent of $y$ is designated; $M$ and $N$ are identical. In other words $x$ and $y$ have equivalent reference due to the properties of universal quantifiers and the identity relation between $M$ and $N$. If $M$ and $N$ were not identical, as in (63), $x$ and $y$ would not be equivalent. Similarly, in (62') $x$ and $y$ are not necessarily equivalent due to the replacement of universal quantifiers by existential ones.

Now there are a great many difficulties entailed by the necessity for an identity statement of the order described above. Firstly there is the question of how it is to be handled in the grammar. However I shall assume that McCawley is able to overcome that point, since it appears to me that there is a much less trivial problem involved. Let us assume that in (61') $M$ and $N$ are identical and can be stated to be so. We have now to consider whether it is possible to substitute salva
veritate. The possibility of such substitution is clear from the remarks of Quine (1960:142):

"When a singular term is used in a sentence purely to specify its object, and the sentence is true of the object, then certainly the sentence will stay true when any other singular term is substituted that designates the same object. Here we may have a criterion for what may be called purely referential position: the position must be subject to the substitutivity of identity."

The positions of M and N are purely referential, in that they are not in opaque contexts (to follow Quine's terminology). But are they singular terms? The question is virtually impossible to answer, because McCawley does not explain what status he would wish to assign them, but if we accept Quine's view that 'mass terms', usually water, etc. but perhaps here M and N, are singular terms when before the 'is' of predication, cf. Quine (1960: 97), then it seems most probable that in (61') M and N can be substituted for one another salva veritate.

Whether or not McCawley is willing to accept such substitution I cannot tell, and I suspect that if substitution is not permitted there will be some mechanism available to block it. In other words, McCawley's proposals are too inexplicit to be decidable. In the context of the present discussion, especially, it is
worth observing that "M" and "N" are first introduced in
the trees (60') and (61') (McCawley, 1971:229) and that
there is absolutely no explanation of their status. And
so one simple objection to McCawley's proposals is that
the manner of their introduction is such that the implica-
tions of the analyses cannot be wholly foreseen.
Further, some implications which can be deduced, includ-
ing the example we have discussed above, do not appear
to be totally desirable. Yet another objection is that
McCawley's analyses are simply too complex. This, of
course, is not a decisive counter-argument, but it does
seem to be true that much of the obscurity about the
above proposals is due to their initial complexity.

Let us consider but one example of this. We have
already shown that it is necessary to state that $M = N$
in the underlying structure or semantic representation
of (62), but that in the equivalent structure for (63)
it has to be stated that $M \neq N$. How else would it be
possible for the semantic equivalences or distinctions
to be captured? The question, I fear, is not terribly
profound. The crucial distinction between (62) and (63)
is that in the former the nouns in the noun phrases are
identical: men and men, whereas in the latter they are
not identical: men and women. Now there appears to be a
significant generalisation, all the more significant
because it is so elementary, which can be made here: it
is that identical lexical items\(^4\) refer to the same potential set of referents, cf. §4.2. Because of the philosophical problems surrounding the notions of reference and referring, for which see, for example, the collections of articles in Olshewsky (1969:Ch. 4) and Steinberg and Jakobovits (1971:76-154), the linguist must tread very carefully when discussing the referential power of nouns. However, I shall assume, contra Lyons (1968:424-27), that all (common) nouns have potential referential power, given the proviso that "physical existence", which Lyons asserts is "fundamental for the definition of the semantic relationship of reference", has as fully an extended meaning as possible. Further, it ought to be noted that while it is claimed that potential referential power is a necessary property of (common) nouns, it is not claimed that it is a sufficient property; it is undeniable that other semantic elements are involved.

Although it may not be immediately apparent, we have moved some considerable way towards a solution of

\(^4\) Of course we must be on our guard against homonymy and similar phenomena, nor is it disputed that certain lexical items may have complex semantic structures, cf. the discussion of *mother* in Anderson (1968) and *parent* in Hogg (1973b). Reference does not appear to be affected by the latter phenomenon.
some of our difficulties, because of our emphasis on the potential referential properties of nouns. Consider firstly a description of the semantic properties of (64) which makes use of the claim that identical lexical items refer to the same set of potential referents:

(7.64) Bachelor are bachelors

Since the two nouns are identical we can claim that each refers to the same set of potential referents; therefore the sentence will be predicted to be tautologous, quite correctly. McCawley's proposals discussed above appear to require an intermediary statement of identity and is thus less simple. We ought now to observe that the referential property is not confined to nouns, but appears to be extendable to noun phrases containing identical items. If it were otherwise it would be impossible to explain the tautology of:

(7.65) Unmarried men are unmarried men

Yet the referential properties observed in (64) and (65) do not extend over the whole noun phrase as it appears in surface structure, as we have noted in discussing (62). More precisely, the presence of a quantifier destroys, or, rather, potentially destroys, the referential equivalence. This of course is not true in the case of universal quantifiers, but we shall examine the reasons for that at a later stage. It is sufficient to note at present that existential quantifiers do have such power. The obvious conclusion to draw from this is
that underlying structures must be so conceived as to account for this fact. And this, once more, suggests that some is outside its collocating noun phrase in underlying structure.

We now have a considerable amount of evidence about the kind of underlying structure which will prove adequate, and this can be formulated in terms of a number of requirements: (i) the structure for some ought not to be radically different from that for a number; (ii) some must be outside the noun phrase to which it belongs in surface structure; (iii) it is more economical to conceive of underlying structure containing lexical items rather than indices, although this last point has to be qualified, for it is no more than a claim that the use to which indices are put in representations such as that offered by McCawley (1971) is uneconomical. It is not a claim that all surface lexical items are derived from identical underlying items, for that can hardly be substantiated. Let us now examine the relative adequacy of some alternative proposals which have some claim to satisfying these requirements and the consequences of each proposal. In all cases we shall assume that some and a number have similar underlying analyses.

7.4 Some alternative structures

In the discussion below we shall present four alternative underlying structures for some, which in
turn make the following claims: (a) **some** is contained in a relative clause dependent on the collocating noun phrase; (b) **some** is a noun with a restrictive relative clause containing the collocating NP dependent upon it; (c) **some** is a noun directly dominating the collocating NP; (d) **some** is a noun in a higher existential sentence. In each case we shall base our discussion upon an analysis of a sentence containing two **some**'s, namely:

(7.66) Some boys kissed some girls

Although this example might be objected to upon the grounds that it is over-complex, it has the advantage of showing simultaneously the structure of S-dominated and VP-dominated NP's containing **some**; further, we have to be aware at all times of the problems raised by sentences containing two quantifiers, and thus it is best to keep these problems at the focus of our attention.

Alternative (a) is a slight and obvious modification of the Lakoff-Carden proposals; more precisely, it looks like the intermediate stage through which post-determiner quantifiers must be derived in that theory. As such it suffers from all the inadequacies of those proposals and because it no longer uses the notion of a higher predicate it has even more inadequacies. Therefore it cannot possibly be justified and must be immediately rejected. We can now, therefore, concentrate our attention on the three remaining choices. All of these, it will be observed, have in common the fact that **some**
will be higher in the underlying tree than the collocating NP - although not necessarily higher than the main or matrix verb of the sentence. Further, each will assign to some a structure not markedly different from that of a noun like a number. Both these points are desirable in the light of the discussion above.

If (b) is to be the preferred choice, then (66) ought to have the following underlying representation (which ignores non-essential or irrelevant points):

\[(7.67)\]

\[
S \\
NP \\
NP \\
 some \\
NP \\
 some \\
BE 
boys \\
VP \\
kissed \\
NP \\
NP \\
 some \\
BE 
girls
\]

Given the already existing transformational apparatus it should not prove difficult to derive the correct surface structure, provided that Adjective Shift is not spuriously applied to boys, girls, etc. to give:

\[(7.68) \] *Boys some kissed girls some

The above analysis has a considerable number of advantages. Firstly, it assigns a noun-like status to some, and that is desirable not only on account of that quantifier's close resemblance to a number, but for other
reasons which we shall discuss in Chapter 8. Secondly, it is probably correct that boys (etc.) is in the type of subordinate relation to some which a restrictive relative clause demands. One reason for claiming this is the status of of, which we discussed in Chapter 6. There it was claimed that an Adjacent NP Constraint blocked derivations such as:

(7.69) *A number men

This constraint was typically avoided by the introduction of either and or of, cf. too §7.3, above. The former of these is most probably the marker of a coordination relation whereas the latter is a marker of subordination. If (67) is correct, then we are now able to see exactly what that subordination relationship is.

Another interesting argument in favour of (67) is that it accounts for many of the points which Bach (1968) discussed. Indeed, there are only two differences between Bach’s position and the one outlined in (67). The first of these is that indices have been dropped, but we have already pointed out that the use of indices is not necessarily productive. The second difference is one that has been silently introduced, but which must now be stated explicitly. It will be recalled that both Bach (1968) and Bell (1972) allow either restrictive or nonrestrictive relative clauses to be associated with the; on the other hand, we have introduced only a restrictive variant to account for the grammar of some.
In fact this would seem to be consonant with Bach's remarks on the subject (1968:95), but it does mean that there will have to be an ad hoc restriction with existential quantifiers which will block associated nonrestrictive relative clauses. The restriction will be ad hoc because there will be no other distinction between the and some.

In spite of this latter difficulty, it is reasonable to reach the pro tempore conclusion that proposal (b) has considerable appeal and that it should not be dismissed out of hand. Before going further than that, however, we must look at the two remaining proposals and see what merit they have. Any discussion of (c) immediately runs into the problem that it is difficult to tell what the underlying structure should look like. Perhaps the most reasonable suggestion (once again using (66) as the base sentence) would be:

(7.70)

```
S
  NP
    some
  VP
    V
      kissed
    NP
      some
      girls
  NP
    boys
```
The alternative possibilities all appear to be similar to the analyses proposed in Jackendoff (1968) and are thus open to the same criticisms, criticisms which entail their rejection. The one advantage which (70) has over (67) is that there is no danger that the ungrammatical (68) will be derived. This is so because (70) dispenses with the need for the transformations associated with restrictive relatives. But in gaining this one very slight and possibly illusory advantage it is clear that at the same time the relatively useful generalisations which are made possible by the presence of a restrictive relative in (67) are lost. Furthermore, it is far from certain that it is permissible to generate an underlying structure for (70) in the first place, although perhaps this could be remedied in some type of dependency framework. The relative inadequacy of (70), however, is undeniable, and therefore there seems no reason why we should not reject it at once.

The final alternative which we have to examine raises a number of important issues, primarily revolving around the question of what an 'existential sentence' is. But the following quotation from Quirk et al (1972: 956) seems to me to provide a valuable working definition:

"Existential sentences are principally those beginning with the unstressed word there, and are so called because when unstressed
there is followed by a form of the verb BE, the clause expresses the notion of existence: There is nothing more healthy than a cold shower ('Nothing more healthy exists than a cold shower')

But whereas the meaning and the outline structure of existential sentences (there - be - NP, with certain permissible variations, especially connected with the verb) is relatively uncontroversial, there is much controversy over the exact status of the elements of structure. The correct analysis of each of the three principal elements is still a subject of debate and therefore we must examine the merits of competing hypotheses about them before we attempt to construct an underlying structure for (66) which involves an existential sentence. In order to do this as briefly as possible I shall ignore the status of be, not because it is easily resolvable, but because it does not seem crucial to the questions at hand.

Let us firstly consider what kind of noun phrase can occur after be. We are at once faced with the tricky question of whether sentences like:

(7.71) There's the oddest-looking man standing at the door

should be considered as straightforward existential sentences. But as Quirk et al (1972:957) reasonably
point out, this type of sentence does not completely parallel what might be judged, from their definition quoted above, to be a 'normal' existential sentence. There appear to be at least three differences. Firstly, sentences like (71) are often grammatical only by virtue of the context of discourse, i.e., as answers to questions; secondly, in other situations the intonation pattern of the putative existential sentence is considerably distinct from the pattern usually associated with undeniably existential sentences; thirdly, and perhaps most importantly, there are quite radical differences in meaning between pairs of sentences such as:

(7.72) a There's always the cars in the garage
    b There's always some cars in the garage

(7.73) a There's the snow on the hills
    b There's snow on the hills

As Allan (1971:16) says:

"The function of the existential operator [realised as there be:RMH] is to introduce the referent of the noun-phrase in which it is a constituent as a 'new' theme of discourse."

Only in the (b) sentences above is this possible. Further, we might observe that if we change always to never, only the (b) sentences are acceptable (although
in (72b) some changes to any):

(7.74) a *There's never the cars in the garage  
b There's never any cars in the garage

(7.75) a *There's never the snow on the hills  
b There's never snow on the hills

It therefore seems correct to exclude sentences of the type (71), (72a), (73a) from our future discussion. This, of course, is in accordance with current grammatical thinking, for most grammarians agree with Quirk et al (1972:956) and Roberts (1964), cf. the discussion in §6.3, that the NP following be must be 'indefinite'. Even if we accept the term 'indefinite' at face value, that claim is only misleadingly true, for although the following NP must indeed be 'indefinite', it is not the case that every 'indefinite' NP can follow an existential verb. Thus compare the following: 5

5 It will occasionally be the case that sentences asterisked below are acceptable in a non-existent interpretation, cf. the discussion above. To keep the argument to a reasonable length, I henceforth ignore such alternative interpretations, unless it is explicitly stated to the contrary.
(7.76) a  There's some prisoners on the roof
        b  There were many philosophers hoping
to find the meaning of 'truth'
c  *There were all prisoners on the roof
d  *There was every philosopher hoping
to find the meaning of 'truth'

From this we might conclude that the following NP must
contain, in surface structure, an existential quant-
ifier. This, however, appears to be over-rash, in view
of the acceptability of sentences such as:

(7.77)  There are cricketers who write poetry
But notice that (77) is rather different in meaning from
the sentence of which it might be supposed to be a
transform:

(7.78)  Cricketers write poetry
In (77) it is claimed only that some cricketers write
poetry, whereas in (78) the predication is claimed to be
ture of the class of cricketers as a whole. In other
words, in (77) the reference of cricketers is similar to
the reference of some cricketers, in (78) to the refer-
ence of all cricketers. Our intuitions in this respect
are reinforced by the different degrees of grammatical-
ity in the following group of sentences:

6  (79b) is only fully acceptable, for me, under
certain stylistic conditions, namely 'vivid' use of the
present continuous, especially as found in narration.
(7.79) a Some children are playing by the river bank
    b ??Children are playing by the river bank
    c *All children are playing by the river bank

(7.80) a There are some children playing by the river bank
    b There are children playing by the river bank
    c *There are all children playing by the river bank

The interesting point is that (79b) and (79c) fall together in (lack of) acceptability but that in (80) it is the (a) and (b) sentences which fall together in (presence of) acceptability. What conclusions can we draw from these facts? It would be premature just now to discuss at length the relation between quantifier-less NP's and NP's with a collocating universal quantifier, but we can observe that neither type of NP is fully acceptable as the subject of a sentence which is not capable, by virtue of tense and aspect, of a generic interpretation. This is why (79b) and (79c) are at best marginally acceptable. NP's with a collocating existential quantifier are not subject to this restriction, hence the acceptability of (79a). Now this shows that there are two reasons why (80c) is unacceptable: firstly,
the sentence of which it is a putative transform is unacceptable; secondly, as we have already observed with regard to the sentences of (76), there must be no universal quantifier in the complement NP of an existential sentence. Yet neither of these reasons are applicable in the case of (80b). Given the relationship between quantifier-less NP's and NP's with a universal quantifier, this can only be explained by the hypothesis that there is in fact an underlying quantifier associated with the NP of (80b). This quantifier must be deletable only under strict conditions, otherwise we fall into the trap of "disappearing quantifiers". The syntactic and semantic evidence suggests that this deletable quantifier, which is presumably realised in (80b) as part of the there be construction, must at the very least be relatable to some. In this way we would be able to account for the close meaning relation between (80a) and (80b).

The above argument is of interest not only because it shows that, since there is a distinct meaning difference between (79b) and (80b), those two sentences ought not to be transformationally related; there is also the more significant point that it looks as if (80b), an existential sentence, has some kind of underlying existential quantifier. From that it follows that we can make a much more precise statement about the kind of surface NP which can function as the complement of an existential sentence: that NP must include an underlying
existential quantifier. That there is such an intimate relationship between the acceptability of existential sentences and the presence of an underlying existential quantifier strongly implies that the case for our fourth alternative - that existential quantifiers are derived from an underlying existential sentence - is supported by more than purely nominalist considerations.

Now let us turn to the status of there. It is undeniable that in many contexts, for instance:

(7.81) There's the boy, swinging from a lamppost

it has a purely locative function. However, Allan (1971) has suggested that in existential sentences there should not be considered as a locative, for as he shows quite convincingly, pace Sampson (1972), cf. too Allan (1972), the two types of there have different distributions and can be distinguished in apparently identical sentences by contrasting stress and intonation patterns. We therefore accept here Allan's designation of there₁ - the existential there - and there₂ - the locative there. The question now resolves itself into what kind of status in underlying structure ought to be assigned to there₁. One possible solution is obviously out of the question: given the differences between there₁ and there₂ it is impossible to derive there₁ directly from an
ordinary locative source.\(^7\) Allan (1971:11) himself proposes that \texttt{there\textsubscript{1}} and \texttt{be} are together derived from a single source, and it would be plausible to set up as this source an abstract verb such as \texttt{EXIST}, cf. §5.2 and Carden (1968). Although in Chapter 5 we found that that abstract verb had little to recommend it, I shall adopt it here, and this is for two reasons. Firstly, Allan's arguments that \texttt{there\textsubscript{1} be} is derived from a unitary source and is only transformationally realised is appealing. Secondly, there is a reasonable case that the underlying subject of an existential sentence is not \texttt{there\textsubscript{1}}, but the surface NP complement. If this were not so, it would be difficult, as even Sampson (1972:116-17) admits, to account for the concord of:

(7.82) There are lions in Africa although we ought to remember that such concord is not obligatory, for compare:

(7.83) There's lions in Africa

Both the above points suggest that an underlying

\(^7\) Within the terms of a localist theory, as proposed in Anderson (1971b), it would, of course, be necessary to derive \texttt{there\textsubscript{1}} from a locational source. It is not entirely clear that such a theory would be able to distinguish consistently between the two types of \texttt{there}, which may thus constitute a rather minor objection to that theory.
predicaitor is the source of there, be and EXIST is the most likely candidate. Nor are all the arguments against the general use of an abstract verb such as EXIST valid here, for, as we shall see, it has specific realisations and is recoverable even if deleted by the time surface structure is reached.

In the preceding paragraphs we have examined a great deal of evidence all of which supports alternative (d), namely that quantifiers are derived from an underlying existential sentence. This mass of evidence, I believe, is quite sufficient to show that this fourth alternative is the only serious competitor to (b), and therefore it is only appropriate that we now attempt to show what the underlying structures corresponding to (d) ought to look like. The most plausible candidate for the underlying representation is one which is clearly a rather simple adaptation of the Lakoff-Carden theory, in which some is a noun, not a predicate, and the abstract verb EXIST is the higher predicate. Again using sentence (66) as the base sentence, the representation corresponding to alternative (d) must be on the lines of:
The close resemblance in basic structure between (84) and the representations proposed by Lakoff and Carden can easily be observed by comparing (84) with the phrase markers in Lakoff (1971c:239), where it is also the case that two quantifiers are involved. However, in those cases, we ought to note, the quantifiers involved are compound existentials; properly speaking the comparison between (84) and the Lakoff-Carden structures only applies to simple existentials.

As observant readers will have realised for themselves, (84) cannot be accepted just as it stands, for it presents a number of difficulties for the generation of correct surface structures. However I want to pass over these for the moment (as they rightly belong to §7.5) and merely note here that it is not easy to see in what other way Allan’s observations, discussed above,
can be captured. More precisely, Allan (1971:15-16) suggests that existential sentences are dominated by an NP node, and this runs into insuperable difficulties when the object NP is derived from such a sentence. Thus the following paradigms would not be explicable:

(7.85) a John saw there were girls in the park
   b John saw (some) girls in the park
(7.86) a John realised there were girls in the park
   b *John realised (some) girls in the park

Whatever the difficulties of (84), that is not one of them.

7.5 Conflation

It therefore appears to be fairly certain that the correct choice of underlying representation for (66) lies between (67) and (84) or whatever elaboration and modification of these two structures may be deemed necessary. This certainty stems from the already observed fact that both (67) and (84) are able to account for a number of syntactic and semantic phenomena which are inexplicable in terms of the other structures discussed in 87.4, and, furthermore, neither are they satisfactorily accounted for by a hypothesis, such as that of Lakoff and Carden, which claims that quantifiers are
underlying higher predicates, or by one, such as that of Jackendoff, which, although it claims that some quantifiers (but not some) are underlying nouns, does not derive quantifiers from a sentence higher than the sentence which contains the collocating NP.

But even though we can now show that the kind of decision which we now have to make can be very clearly defined, there are a number of caveats which must be made with respect to the discussion in the rest of this chapter. Most notably, neither (67) nor (84) purports to give an analysis of any quantifier other than some. At first sight this might appear to be unfortunate, and on deeper investigation such fears can be seen to be well-founded. To consider but one point, there is virtually no interaction between processes of element negation and simple existential quantifiers. Thus, whereas not many is an acceptable sequence, *not some is not. In Chapter 8 we shall see that structures such as (67) or (84) provide excellent explanations of this point, but the present disadvantage is that we cannot use evidence from quantifier negation to support either of the above structures. Of course, after we have agreed on an underlying structure for simple existentials on the basis of the present evidence and then moved on to quantifiers such as many, if we then find that the evidence from, say, negation supports the already agreed structures, such independent confirmation will lend
greater strength to our proposals. A second point, but
this is more general, is that there is no claim that
either of the above structures, or a future modification,
is correct on all details. Thus we shall observe in
Chapter 12 that the exact status of restrictive relative
clauses is uncertain and that this has an effect on our
suggestions here. Another instance is that even the
status of nodes such as S, NP or VP is open to dispute,
as is the even more fundamental question of whether or
not a constituency framework is preferable to a depen-
dency framework, cf. Anderson (1971a; 1971b:29-32) and
§6.6, above. It would be best to remember here that it
has been the notionalists, with their reluctance to
attach themselves too closely to one formalism, that
have contributed a great part of our knowledge of deter-
miners and quantifiers, and it seems preferable to
believe that the correct formal framework, while emin-
ently desirable, cannot ever be a prerequisite to accur-
ate linguistic explanation. Indeed, as we often noted
in Part I, formalism all too easily leads to a deadening
dogmatism. Bearing in mind these reservations, there-
fore, we can now move on to the discussion proper.

One definite advantage which is held by both (67)
and (84) over other proposals is that in both these
analyses some is assigned a noun-like status; therefore
it is fairly simple to account for the relation of some
to a number. We have already observed that these two
items have many similar syntactic and semantic properties, and we are now able to explain these similarities by claiming that a number is derived from the same source as some; this is perfectly consistent with both (67) and (84). In addition to the examples of similarity which we have already given, cf. §7.3, the discussion of Jackendoff's proposals in Chapter 6, and further examples in Anderson (1973c, forthcoming), we might mention such parallels as:

(7.87) a Many are the men who like oranges
   b *Some are the men who like oranges
   c *A number are the men who like oranges

(7.88) a The many men like oranges
   b *The some men like oranges
   c *The number of men like oranges

Furthermore, there are several environments which permit a number but not some, for example:

(7.89) a A large number of men like oranges
   b *Large some men like oranges

But these cases, I would claim, are only explicable in terms of an analysis which derives a number and some from virtually identical sources, paradoxical as this may appear. However, the explanation of (89) properly lies in Chapter 8, and we shall only claim here that the other distributions which we have observed are sufficient to show the near-equivalence of a number and some.
The above correspondences are, indeed, so strong that it is tempting to suggest that some is derived from exactly the same underlying structure as a number. This suggestion needs some modification, however, as can clearly be seen from the following:

(7.90) a Some snow fell yesterday
    b *A number of snow fell yesterday

Yet that is easily explicable: we could claim that some plus countable noun = a number and that some plus mass noun = a quantity:

(7.91) A quantity of snow fell yesterday

Although these proposals strike this writer as very near to the 'truth', I have some hesitation in putting them into practical effect. One reason for this hesitation is that the claim that two sentences, purely stylistic variants apart, can have identical underlying structures, although common, is hard to maintain, cf. the remarks on Neg Transportation in §5.4. In fact it does seem to be the case that a very slight meaning difference, perhaps of the order of that which crops up in Neg Transportation, does exist between some and a number. Another reason is that there are several candidates apart from a number and a quantity which might equally well be used, e.g., a set, an amount. As each of these is a discrete lexical item, each must have a slightly different semantic representation.
Nevertheless, it seems desirable that the correspondences which we have discussed should be reflected in some way in the underlying structures (and in Chapter 8 we shall see that there are several further reasons for doing so), and therefore the following ad hoc decisions will be taken, none of which, it must be stressed, make any implicit claim about some which is not already implicit in (67) or (84). Any resultant claims about some will be stated explicitly below. The most important of these decisions will be that in underlying structure some will be variously represented as A NUMBER or A QUANTITY, the upper case letters being used to distinguish between these abstract underlying strings and the surface lexical items. More specifically, A NUMBER will be used for some in some boys, etc., whereas A QUANTITY will be used for the some in (90a). This enables us to distinguish, although perhaps in an ad hoc manner, between collocations with count and with mass nouns, without having to use the at least equally ad hoc feature [\textit{\textipa{icount}}]. We might wish to distinguish between a number and some by that feature in any case, saying that a number (a quantity) is derived from \textit{[A NUMBER, +count]} (\textit{[A QUANTITY, +count]}), whereas some is derived from \textit{[A NUMBER/A QUANTITY, -count]}. Unfortunately, that is not a particularly appealing suggestion; our present state of knowledge is too inadequate to suggest that as a suitable way to distinguish a number and a quantity from some, and we may have to resort to ad hoc devices.
But as the previous paragraph pointed out, the distinctions may be much more purely semantic, in which respect see the further discussion in §8.1.

We have moved, it would appear, some way from the original objectives of this section, but this is not so, for the above considerations have clear implications for the respective adequacies of (67) and (84), implications which we ought now to discuss. In §6.3 we were able to show that the invariable presence of of between a number and its collocating NP was due to an Adjacent NP Constraint, cf. examples (6.32) and (6.41). Furthermore, we then stated that (p.255):

"It is not relevant at the present time to consider why particular items are inserted between adjacent NP's. It seems quite certain, however, that and and or are markers of coordination. This leaves the way open for of to be the marker of non-coordinating relationships, including, but not exclusively so, subordination."

If we now reconsider our earlier remarks in the context of (67) and (84), it is noticeable that (67) is not only compatible with but also strongly supports those previous statements, for (67) claims that a number (like some) is a noun controlling an underlying restrictive relative clause which contains its collocating NP in surface structure; in other words, (67) states that
there is a subordination relation between the two nouns in a number of boys. Of course, no of occurs after some, but this need not worry us for, as we were able to show in §6.3, the insertion of of is a surface phenomenon and, further, a phenomenon which is by no means universal in its application. We can therefore observe that an underlying analysis of the form of (67) is able to explain a surface feature for which we previously had no consistent explanation. On the other hand, it is not immediately obvious that (84) would predict of-insertion, for it does not appear to be necessarily the case that a number and boys would be in a subordination relation, despite the fact that a number would have a source in a sentence higher than that containing boys. Although the situation here can hardly be described as clear-cut, there does seem to be some evidence that (67) is preferable to (84).

Some further evidence which supports (67) over (84), which we have already mentioned but which nevertheless bears brief repetition, is that (67) is totally consistent with Bach's (1968) claim that nouns are derived from relative clauses which are based upon some predicate nominal structure. (84), as it stands, is not consistent with that claim. On the other hand, (84) is able to give some explanation of existential sentences (although admittedly we have not yet shown exactly how this is done), whereas (67) is unable to do so. In other
words, we are faced with a situation where two competing structures offer partially overlapping, partially complementary, explanations; luckily it does not appear to be the case that these explanations are contradictory. That this is so prompts the expectation that it might be possible to conflate the two structures and thus bring under one roof (or the shade of one tree) the full range of generalisations which each structure separately affords. The only question, of course, is how this is to be done.

Towards the end of §7.4 it was admitted that (84) had serious deficiencies, although at the time it was left to the reader to discover these for himself. It is now opportune to discuss these matters, and we may start by considering what the underlying structure of:

(7.92) Children like some sweets

might be in terms of (84)'s approach. Presumably we ought to find something like:

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8 I leave out of discussion the possibly dubious status of (92). Here it is only essential that there be some possible reading of (92); what that reading is precisely is rather less important.
But (93) is completely unjustifiable, for one very simple reason: it is not possible to ascertain whether some should be lowered onto children or onto sweets. This is a quite basic defect, which is equally observable in (84). The source of this defect is that in (84) there is no type of identity relation holding between the quantifier-noun and the NP into which it is lowered. This clearly causes trouble of the type described in (93), and the only reason why it might not be so obvious in (84) is that the global derivational constraints described by Lakoff (1971c:238-52) condition one into accepting that the higher of two quantifiers is, under normal conditions, the left-most in the surface sentence, cf. §8.4. But we ought not to ignore the simple fact that the lack of identity relations in (84) makes that structure untenable; it is not the global derivational constraints mechanism which attaches quantifiers to the correct NP, it is an identity relation which does that.
If (84) is correct in asserting that the quantifier must be the subject of a higher existential sentence, then there must be an occurrence of the identical quantifier in the matrix sentence; but (84) does not provide such an occurrence. On the other hand, if we look once more at (67) we can see immediately that exactly such an occurrence is provided by that structure. Now we already know that the basic claims of (67) and (84) are non-contradictory, yet each structure is insufficiently powerful. One way round this would be to build the higher existential sentences of (84) on top of (67), for then the totality of claims of (84) would be added to the claims of (67). What we have so far lacked is some independent motivation for such a strategy. But now the basic structural inadequacy of (84) provides us with such a motivation: what (84) lacks is the occurrence of the appropriate quantifiers in the matrix sentence (the sentence in (94), $S_0$, which contains the main verb); what (67) provides is exactly such occurrences. Thus if (84) is to work correctly it must be hooked up with (67) - any further generalisations are by way of a bonus.

The type of structure which we shall end up with (still using (66) as our starting point) is along the lines of:
Despite the fact that at first sight (94) looks rather complicated, this is not really so. Firstly, it can easily be divided into three blocks: (a) $S_{-2}$ and $S_{-1}$ are the higher existential sentences for the two quantifiers; (b) $S_0$ is the matrix sentence; (c) $S_1$ and $S_2$ are the restrictive relative clauses containing the predicate nominal underlying forms of the surface nouns. Secondly, the process of deriving the surface sentence (66) and various related forms is quite simple: let us examine it step by step. Commencing with the lowest sentences, according to the standard cyclical conventions, $S_1$ and $S_2$ are removed by the normal transformations associated with relative clauses. This gives us:
Then the existential sentences are lowered into the appropriate NP's of the matrix sentence (existential-lowering): this is optional in the case of the left-most quantifier in the matrix sentence. To show this we

---

9 Ambiguity about which existential sentence belongs to which matrix NP only arises because the two quantifiers are identical. To the present writer this seems, for the moment, to be no great objection. At a later stage we shall be able to see that the ambiguity is only apparent, but to show that we need, preferably, a sentence with two different quantifiers, and that, of course, is not possible at this stage of our argument.
shall consider a case where the passive transformation has not operated. It is also probably at this point that lexicalisation of *a number* takes place, although this problem will be more fully discussed in the following chapter. In the examples below we lexicalise *a number* to *some*. If no lowering of the appropriate (left-most) quantifier takes place, then we shall obtain:

\[
(7.96) \quad S \\
\quad NP \quad VP \\
\quad NP \quad S \quad EXIST \\
\quad \text{some} \quad NP \quad VP \\
\quad \text{some boys} \quad \text{kissed some girls}
\]

This gives us - with the correct realisation of *exist* - the structure:

\[
(7.97) \quad [S\text{there were some}[S\text{some boys kissed some girls}]_S]_S
\]

There then follows a rule which is the direct opposite of the existential-lowering rule, which raises the subject of the matrix sentence into the complement of the existential. We call this rule "subject existentialisation", and it transforms a string such as (97) into:

\[
(7.98) \quad [S\text{there were some boys}[S\text{some boys kissed some girls}]_S]_S
\]

Then one of two transformations takes place: either the second instance of *some boys* is identity-deleted, by
normal processes, to give:

(7.99) There were some boys kissed some girls

or wh-formation takes place:

(7.100) [s_\text{There were some boys} [s_\text{wh-boys kissed some girls}] s]

and the normal relativisation rules follow to generate:

(7.101) There were some boys who kissed some girls

That (101) is not derived from an underlying structure involving a restrictive relative clause explains why it is only an optional alternative to the wh-less form in (99). Identity-deletion is the optional rule in this context, but the other rules are later and must apply if the structural descriptions are met. Of course, if the derivation from (95) contains the double application of existential-lowering, as it may well do, then we immediately obtain the surface structure of (66).

Although the above certainly constitutes a prima facie case for adopting (94) as the underlying representation of (66), it would be foolish to assert that (94) has definitely been established. Two points need to be made clear. The first is that there are a number of wrinkles in the derivation which have not been ironed out and which must be if (94) is to be shown to be adequate. The second is that we have not yet considered how (94) can be modified to handle quantifiers such as
many. To some extent these questions are interdependent, and therefore we shall discuss both of them in Chapter 8. Only then shall we be able to make a careful evaluation of the hypothesis presented above.
Chapter Eight

Compound existential quantifiers

8.1 Some semantics

By the conclusion of the preceding chapter we had been able to establish a fairly plausible underlying source for the quantifier some, and this source had been justified by both semantic and syntactic arguments. However, there can be no doubt that apart from the initial semantic equation of some with a number, the weight of the semantic arguments was minimal. It is fitting, therefore, that we now have a closer look at the semantics of some, despite the fact that the primary object of study in this chapter is many and, more generally, the whole class of compound existentials, including few, a few, little, a little and much. There are at least two good reasons for this approach. The first of these is that the semantic status of some is interesting in itself; an adequate analysis of some cannot escape talking about the many semantic problems involved. The second is that it is easily predictable that if we get the semantics of some wrong then we are going to get the semantics of many, etc. wrong too. And so we must examine further the semantic credentials of the simple existential.
In the above paragraph and also in Chapter 7, especially §7.5, we have, sometimes hesitantly, talked about the equation of some and a number. Even if we restrict ourselves to collocations with countable NP's, which does not seriously distort the issue, it can quite easily be shown that this hesitancy is undoubtedly justified. We need only consider the following:

(8.1) a For a number of reasons this approach has to be rejected

b *For some reasons this approach has to be rejected

It is only under exceptional circumstances, and even then some would have to be heavily stressed, that (1b) would be taken as at all acceptable. Yet if a number and some are derived from the same underlying source, it ought to be the case that both the sentences of (1) are equally acceptable. Is there any way to account for this contradiction without radically altering our hypothesis? To find an answer to this question we shall have to look more closely at the reasons for accepting (1a) and rejecting (1b).

Unfortunately there seems to be absolutely no reason for supposing that there is any syntactic misbehaviour in (1b), as the following similar constructions are grammatical:
(8.2) a Because of a number of faults in the design, the supersonic plane cannot get off the ground

b Because of some faults in the design, the supersonic plane cannot get off the ground

c For a number of people Marxism signposts the road to Utopia

d For some people Marxism signposts the road to Utopia

This means that we must rely completely on our intuitions about the meaning of some, and our intuitions are notoriously hazy and imprecise. Nevertheless, some headway can be made. We can start by observing that (1b) is least unacceptable when some has heavy stress but that this heavy stress is not the result of a derivational constraint but of the fact that the some which is roughly equivalent to certain is being used, cf.:

(8.3) ?For certain reasons this approach has to be rejected

This suggests that one reason why (1b) is unacceptable normally is that it is too vague: to reject an approach one needs (at least morally) specific reasons, and some reasons is too unspecific; yet a number of reasons is not. One explanation for this offers itself immediately: it is that the latter phrase indicates that it is possible for the speaker/writer to enumerate the reasons; the former phrase, on the other hand, gives no such
indication. And if it is possible for the speaker to enumerate the reasons, then the reasons must be specific, although unspecified.

Therefore it appears to be quite plausible to suggest that the contrast between some and a number should not be formulated as it was in §7.5, but rather by a structure in which the former is derived from underlying [A NUMBER, -specific], the latter from [A NUMBER, +specific], with appropriate modifications for collocations with mass nouns. It would be nice if the [+specific] contrast could be connected with the [+count] contrast hypothesised in §7.5, but it is most probable that such a connection would be spurious and indeed it seems likely that the latter ought to be discarded. Furthermore, we have not been able to formalise an explanation of the unacceptability of (1b); but in the light of the other examples given it might be claimed that the steps we have taken are not in contradiction of any eventual analysis of that sentence and that that analysis might be based on a combination of what we have said together with a complex analysis of reasons, which noun might be said to be at the heart of the trouble.¹

¹ The answer may be that reasons is also too non-specific, and that the combination [-specific] + [-specific] is, as it were too much. In all the other cases either the quantifier or the head noun is [+specific].
The most relevant point as far as we are concerned, however, is that (1b), despite exemplifying crucial differences between a number and some, by no means shows that it is necessary to provide quite different underlying sources for the two items, and thus it is not a counter-example to the structures suggested in (7.94).

The reader may recall that in §4.1 it was stated that the prime function of some in a sentence such as:

(8.4) Some children like cream

is to indicate that the reference of the subject NP is to at least two but no more than \( n-2 \) members of the full set of potential referents of children, where that set has \( n \) members. This statement now needs refining in two directions, the first of which concerns the number of referents indicated. Although I believe the above claim is correct, and indeed necessary, as we shall see later, as a theoretical statement about competence, it is certainly incorrect as a claim about performance utterances of some. What is wrong is that the assertion is much too wide-ranging. Thus, if \( n \) is a sufficiently large number it would seem to be the case that if only two members of the set satisfied the predication then some would be being used inappropriately, although theoretically correctly. We can handle this and yet save the structure of the claim by introducing \( m \), where \( m \) is some small number greatly less than half of \( n \). If we replace all the instances of two with \( m \), then we
obtain a more accurate representation of the actual usage of some.

The substitution of \( m \) for two is both an advantage and a disadvantage. The advantage is that \( m \) is a rather amorphous concept but that, as we have seen, the performance meanings of some have precisely that amorphous characteristic. The disadvantage is that \( m \) is so amorphous that it is in danger of failing to explain anything. To solve this problem let us now return to the purely nominal quantifier a number. If we substitute a number of for some in (4) then, as we would expect, the range of size of the set of indicated referents is the same as that for some.² Now notice that there is a method by which we can alter that range, namely by adding either the adjective large or the adjective small:

(8.5) a A number of children like cream
    b A large number of children like cream
    c A small number of children like cream

In the former case the upper extreme of the range of sizes is appropriated, in the latter the lower extreme. We can even say that (5b) indicates a set whose size is

² There may be a tendency to use a number over a range of slightly smaller sets than some. If this is so, it can most probably be ascribed to the claims about enumerability which seem to be made by a number, cf. above.
between \( n-m \) and \( n-2 \); (5c) indicates a size of set between 2 and \( m \). This can be represented graphically:

\[
(8,6) \quad \begin{array}{cccc}
2 & m & n-m & n-2 \\
\hline
\end{array}
\]

\[
\begin{array}{c}
\text{a number} \\
\hline
\text{a small number} & \text{a large number}
\end{array}
\]

A solid line indicates that the relevant phrase appropriately indicates reference to the size of set to which it corresponds. Where there is no line no reference may be indicated: thus, a small number cannot refer at all to a set within the range of size \( n-m < n-2 \). But it is the dotted line which is most interesting. for this is intended to show that, for the given size of set, although the relevant phrase may be used, it is not the most appropriate. The phrase we are most concerned with at the moment, of course, is a number, and (6) shows, rightly I believe, that although that phrase can be used to indicate that reference is to any size of set between 2 and \( n-2 \), its appropriate range is between \( m \) and \( n-m \). Outside that range it is preferable to qualify number with an adjective.

The above remarks are, of course, hardly original; indeed they are quite commonplace. Nevertheless they are worth emphasising for the results which, if it is carried further, this line of reasoning can obtain. We have seen that the appropriate range of a number is
quite naturally limited by the fact that it can be modified by the adjectives \textit{large} and \textit{small}. Now we have already observed that the appropriate range of \textit{some} is the same as that of \textit{a number}. This could be accounted for simply by pointing out that since the two items have roughly the same underlying source this semantic fact is exactly what one might expect. But that scarcely explains anything. A much more adequate explanation would involve a hypothesis that just as unmodified \textit{a number} is, crudely speaking, the source of \textit{some}, so adjectivally-modified \textit{a number} is the source of some other quantifier(s) which restrict(s) the appropriateness of \textit{some} in exactly the same way as the appropriateness of \textit{a number} may be restricted. We shall see below that this hypothesis can be fully justified.

We have now dealt with our first refinement of the statement about \textit{some} which was made in Chapter 4 and so may proceed to the second. Unlike the first, this looks back to (7.94) rather than forward to the discussion of compound existentials. Consider an interesting distinction between (4) and:

(8.7) Children like cream
This latter sentence asserts that it is a property of each member of the potential set of referents of \textit{children}.
that he or she likes cream. As such it can be truly
generic and timeless and therefore it is meaningful even
if at the actual moment of utterance there is no object
which satisfies the reference of children; there need
only be some such objects at some time or another. This
is what is meant by the term "potential referent". In
contrast, (4) seems only to be meaningful if at the time
of the assertion being made there are actual objects
which satisfy the reference of children. This change in
meaningfulness conditions can only be due to some as
there is no other distinction between (4) and (7).
Therefore we shall have to modify our original statement
further so that it reads: appropriate usage of some
indicates that the reference of its collocating NP is to
at least \( m \) but no more than \( n-m \) actually existing mem-
bers of the full potential set of referents of that
collocating NP, where \( n \) is the number of members of the
full potential set of referents and \( m \) is some small
number greatly less than half of \( n \) but more than two.

To the reader of this study the above statement may
seem slightly reminiscent of one made much earlier, and

\[3 \text{ Some modification of this is necessary: perhaps it }
\text{would be better to say: "that there is a tendency for it }
\text{to be a property of ...". We shall return to a discus-
\text{sion of this point in Chapter 9, since it is not rele-
\text{vant to the present discussion.} }\]
it is indeed the case that such suspicions are justified. Let me repeat a quotation from Guillaume (1919: 305), first given in §2.2:

"On passe ... d'un plan où les noms existent virtuellement à un plan où ils se réalisent effectivement. Dénoter les cas généraux de cette transition constitue le rôle de l'article, simple signe de relation entre une idée et un fonds d'idées."

This statement is not very different from our own attempt above to suggest that some 'actualises' potential referents. One contradiction between Guillaume's remarks and my own can be quite easily resolved. Guillaume claims that 'actualisation' or "concrétisation", cf. Hjelmslev (1928) and §2.2, is a property of the 'articles' only, but we are claiming that it is also true of some, at least. But we have already shown quite conclusively that Guillaume was mistaken in believing there to be a separate category 'article' and therefore there is no a priori reason why the claim cannot be extended to some.

There is another point, however, which is perhaps more serious. When we first discussed Guillaume's theories we were forced to conclude that such statements as that quoted above were at best obscure, at worst meaningless. One fundamental reason for reaching this conclusion was that it was extremely difficult to see
how his claims could be placed within a formal and
testable hypothesis. Therefore if we wish to save any
part of the above statement, and it would seem prefer-
able that we do in fact do so, we shall have to overcome
that difficulty. In order to achieve this, let us now
return to (7.94) and consider part of the function of
the higher existential sentence. Apart from its role in
deriving structures like (7.99) and (7.101) where there
is a surface existential predicate, it is clear that it
makes a certain semantic assertion. Not only does
(7.94) state that a number of boys kissed a number of
girls, but, by virtue of the two top-most VP's, it
states that those boys and those girls actually existed.
Now this is precisely what we have claimed to be one of
the properties of some and it seems also to be what
Guillaume regards as the function of the 'articles'.
And because the EXIST predicates are present only be-
cause the quantifier some/a number is there, (7.94)
formalises the claim of Guillaume and our own intuitions
exactly.

We can therefore see that the hypothesis of a higher
underlying predicate containing the abstract verb EXIST
is not only justified by the syntactic evidence given in
§7.5, but also by the semantic intuitions which were
initially outlined, in an altogether too vague fashion,
by Guillaume (1919) and which we noted that it was
necessary to formalise in order to account adequately
for the semantics of *some*. In this section as a whole we have been able to observe that there is a substantial amount of quite varied evidence to support (7.94), and thus it is now possible to move on with confidence to a discussion of the status of *many* and the other compound existentials within such a hypothesis.

8.2 The adjectival status of *many*

Carden (1970c) lists fifteen constructions which, he claims, prove that postdeterminer quantifiers, in opposition to predeterminer quantifiers, behave syntactically and semantically like 'true' nonrestrictive adjectives. He states (1970c:423):

"Examples I through XII show that Post-Determiner Q act like true adjectives, suggesting that Post-Determiner Q and adjectives share a deep structure. In this section we consider whether the appropriate deep structure is that of restrictive or of nonrestrictive adjectives. Examples XIII and XIV show that Post-Determiner Q, like nonrestrictive adjectives, are derived from the predicates of deep-structure nonrestrictive relative clauses. Example XV confirms this analysis by showing that Overt-Predicate Q never appear in restrictive relative clauses, thus explaining why Post-Determiner Q are always
We can accept completely Carden's argument up to the point where he show that postdeterminer quantifiers are derived from a source which is at least similar to that of nonrestrictive adjectives, but no further than that point. Beyond there we encounter a number of objections to his thesis. Some of these were discussed in §5.3 and need not be repeated here, but there are others which we must now spell out in some detail. Basically our objections centre upon the fact that Carden does not even begin to attempt to explain why many and the other compound existentials can appear in postdeterminer position, whereas neither some nor all can. As we observed earlier, he does give a formal mechanism which will ensure that only the desired surface structures will be generated, but that mechanism should not be mistaken for an explanation. Given that postdeterminer quantifiers behave similarly to nonrestrictive adjectives, it would surely be most satisfactory if it could be shown that exactly those quantifiers which can appear in that context are always derived from a deep structure
structure involving a nonrestrictive relative clause.\textsuperscript{4}

It will be noticed that such a hypothesis would differ from Carden's in two essential points. The first is that since we have already been able to show that some, at least, is not derived from such an underlying structure, then, if we are successful in our attempt, quantifiers will be derived from at least two sources, whereas Carden derives all quantifiers from one predicate structure type. Carden might therefore object that we have lost a generalisation which his proposal is able to establish. But there is an adequate reply to this objection available. It is that Carden's generalisation forces quantifiers into a wholly inappropriate straight-jacket; it claims that all quantifiers have the same underlying structure (although in the case of postdeter-

\textsuperscript{4} It should be noted that a very similar conclusion to this is reached by Anderson (forthcoming), and his arguments for such a source for compound existentials are parallel to our own. Further, the semantic elements of which his proposed underlying structure is composed are partially identical to those suggested in the course of this chapter. However, his structures are quite different in that his work is based upon a theory of case grammar, as found in Anderson (1971b). A comparison of Anderson's proposals with those presented here would be of some theoretical interest.
miner quantifiers originating from a different point in the underlying phrase marker). Yet, as we have observed in §7.1, there are at least three different distribution patterns associated with quantifiers. It makes rather more sense to account for this in terms of different underlying structures rather than by means of dubious concepts such as obligatory versus optional quantifier-lowering, even if the purported generalisation is lost in the process. However this is not to deny that it would be most satisfactory if it were possible to make some generalisation; our point is merely that the one which Carden wishes to make is too sweeping and ignores quite clear distinctions between various quantifiers.

The second difference is that our hypothetical underlying structure only partially involves a non-restrictive relative clause in the derivation of the quantifier, whereas for Carden a quantifier in post-determiner position is wholly derived from the predicate of a nonrestrictive clause. In other words, we are suggesting that the underlying structure of such a quantifier is rather more complex than that which Carden proposes. It is worth repeating, in view of the complexity of many underlying structures which have been suggested in the literature, that this is not an advantage for our proposal. What we have to prove, therefore, is that such complexity is necessary. In this paragraph I only want to discuss one set of facts which helps to do
this, but we shall examine more below. In §7.5 we were able to conclude that *some* is derived from an underlying NP in a higher existential sentence, but if we now accept Garden's claims about postdeterminer *many* we shall have to conclude that it is derived from an underlying VP or predicate. The two positions are not a contradiction, but they get very near to being so, for if they are accepted the result will be that it will be impossible to make any generalisation of the kind hoped for in the previous paragraph. However, this will not necessarily be so if the underlying structure of *many* partially involves a nonrestrictive relative clause, for it is quite easy to see that such a clause could be associated with the kind of NP which underlies *some*, even if the precise structure is at present obscure. It may therefore be concluded that this second difference between Garden's hypothesis and our own putative hypothesis shows that it is only if we accept his proposals that the possibility of an interesting generalisation is lost.

Nevertheless, before we can state with confidence that *many*, and the other compound existentials, are always derived from an underlying structure which involves a nonrestrictive clause, it is necessary to show that in positions where *many* is not a postdeterminer it still has several of the properties which would be predicted by such a derivation, namely that it has
certain adjectival properties. Furthermore, these properties ought not to be shared with some. Before we move on to give such evidence it should be noted that we are not attempting to prove that Carden (1970c) is wrong in claiming that predeterminer many is not a 'true' adjective; we have already suggested that many is never a 'true' adjective, although, for reasons which we hope to clarify below, it does approach that status in post-determiner contexts. We shall consider four points which demonstrate that many always has adjectival properties, three of these being syntactic and the final one semantic.

Firstly, it is well-known (and, indeed, we have mentioned this point several times previously) that only the compound existentials can appear as 'overt predicates', albeit that even when they do they often have a dubious (what Lakoff and Carden call 'archaic') ring to them. Thus we obtain the following pattern:

(8.8) a The men are many
     b The problems are few
     c *The accidents are all
     d *The houses are some

In this respect the compound existentials follow a pattern which is undeniably to be associated with adjectives and only with adjectives. Compare with (8):

(8.9) a The men are brave
     b The problems are difficult
c The accidents are serious
d The houses are ugly
It is even the case that many and few (and, indeed, the other compound existentials) may be found coordinated with an adjective in predicate position:

(8.10) a The problems are few but difficult
b The accidents are many and serious
The above examples provide good evidence that many and few must be considered to be adjectival, but the rather awkward status of (8a) and (8b) suggests that these compound existentials are not 'true' adjectives as are the examples in (9). Of course that is exactly what we might hope for.

The second piece of evidence concerns a difference between many and some, but not all, cf. Chapter 9 for further discussion, which is that many but not some may be directly preceded by a negator:

(8.11) a Not many people came to the party
b *Not some people came to the party
This difference can be accounted for in two ways: either many, but not some, is a main verb, which is a position we have already rejected, or many involves a nonrestric-
tive relative clause which is not found with some.
Carden (1970c:418-19) also observes this phenomenon, and he concludes that the second option is impossible, because of the fact that an overt negative cannot modify a true prenominal adjective. Thus:
(8.12) *Not happy inmates escaped
However this position appears to be surmountable, especially because, as we have already pointed out, we are not trying to claim that many is a true prenominal adjective. If many is in fact a compound of an element rather like that from which some is derived together with a nonrestrictive relative, then it seems quite plausible that an overt negative such as in (11a) will be grammatical in contrast to that in (12). The factor which rules out (12) can be explained as a constraint against an overt negative appearing in the same NP as a noun at shallow structure. If we look at the derivational history of some and guess, for the moment, that many's derivational history is similar, then we can see that even in the case of not many this constraint would not be violated. But the constraint must be violated in the case of postdeterminer many, as Carden (1970c:419) exemplifies with:
(8.13) *The not many inmates escaped
It will be necessary to show how this is accounted for within the kind of hypothesis we have tentatively proposed.

It cannot be denied that the second argument is rather weak and hypothetical, but it can be fairly claimed that once an underlying structure and consequent derivation has been given for many then its strength will become more apparent. In the meantime we can console ourselves with the fact that the third point to
be discussed is a very strong one indeed. It is an elementary fact of English grammar that only two 'parts of speech' have comparative and superlative forms, namely adjectives and adverbs. Since no one would wish to deny that quantifiers modify nouns (or NP's) rather than verbs, it must be conceded that if such quantifiers were to have comparative and superlative forms, then they would have to be related to adjectives. And, of course, it is the case that they have such forms, cf.:

(8.14) a Many Scotsmen wore kilts
    b More Scotsmen wore kilts (than didn't)
    c Most Scotsmen wore kilts
(8.15) a Which team lost few games?
    b Which team lost fewer games (than Celtic)?
    c Which team lost fewest games?

Not only that, but no other quantifiers have such forms:

(8.16) a *Somest houses have central heating
    b *Aller cows remain outside during winter (than are brought indoors)

In the light of such examples it is quite clear that we shall have to postulate a source similar to that for adjectives as being involved in the derivation of compound existential, and only compound existential, quantifiers.
The final argument is rather different from the other three, but not only because, as has been previously stated, it is a semantic one; it is also the case that its purpose is more obviously to lead the way to an adequate underlying structure than to characterise in any way the surface features of many. In Chapter 7 we were able to observe that there was an extremely close relationship between some and a number, and this relationship was further defined and supported in §8.1. Even more interestingly, we were able to argue plausibly that given the semantics of some and a number, there ought to be a quantifier corresponding to adjectivally-modified a large number, in order to explain the restricted appropriateness of some. From what we have said in this section it is clear that many is partially derived from an underlying adjective. Therefore it is not too difficult to predict what is in fact the case, namely that many and a large number are in precisely the same kind of semantic relationship as are some and a number:

(8.17) a A large number of workers went on strike
   b Many workers went on strike

And even more predictably, given (17), we find:

(8.18) a A small number of presidential aides will have to be dismissed
   b A few presidential aides will have to be dismissed
Just as it was observed that a number and some were not synonymous, but perhaps differed by only one feature, so it is possible to see that the (a) and (b) sentences of (17) and (18) are not synonymous. Indeed I would wish to claim that the semantic difference between a large number and many or a small number and a few is exactly the same as that between a number and some. In support of that claim we might note that (18b) is perhaps a slightly more natural sentence than (18a), although the latter, of course, is perfectly grammatical. Slight as the difference between the two sentences is, it is explicable. It will be recalled that in the previous section it was discovered that a number indicates - that, perhaps, is to put the matter too strongly - that the set of actual referents is now enumerable, whereas some is much less specific about the size of the set. Moving to (18a) we can observe the implication that the set of to-be-dismissed aides is both small and enumerable, whereas in (18b) it is small but not (yet) enumerable. If the set is both small and enumerable, why not use a cardinal number or perhaps an approximative numeral such as a dozen in place of a small number? This objection cannot be made of (18b), and I would suggest that this is why we may find the latter sentence a 'better' one than the former. The above may be a very minor point, but it does help to support the case that given the derivation proposed for some in §7.5 there is every reason to suppose that many will be derivable from
an underlying structure similar to that for a large number. Furthermore, with the variations in surface structure which such an analysis ought to be able to explain, similar underlying structures should be discoverable for the other compound existential.

8.3 More underlying structures

With the above evidence in mind it is fairly simple to deduce what the underlying structure of many ought to look like. It is undeniable that many must have, in all its occurrences, a derivation involving a nonrestrictive relative clause, for otherwise we would not be able to explain its adjectival behaviour in every position. But, with the possible exception of postdeterminer contexts, many does not behave like a 'true' adjective. Therefore it cannot simply be a nonrestrictive adjective modifying the collocating NP in surface structure. If many is derived from a structure resembling a large number where large is nonrestrictive, not only does the consequent derivation satisfy all these demands but it has two additional advantages. Firstly, the underlying structure will be similar to some, which permits us to make the generalisation that all existential quantifiers are derived from a higher sentence of the form A NUMBER EXIST or some modification of that sentence. That is precisely the kind of generalisation we have to make in order to counter Carden's possible objection that we
have lost a generalisation. Secondly, by demonstrating that *many* is an adjectivally-modified form of *some* we have also explained why *some* has the restricted semantic appropriateness which was discussed in §8.1.

Therefore we can state with a fair amount of confidence that (20) is a plausible candidate for the underlying structure of (19), which, of course, is an obvious modification of (7.66):

(8.19) Many boys kissed many girls

(8.20)
The derivational process to reach (19) will be the same as that for (7.94) to (7.66) except that here, additionally, there will be conjunction reduction of the coordinated sentences to derive, in the normal fashion, the nonrestrictive adjectives. This has the desirable consequence that we shall be able to generate (21) and (22), parallel sentences to (7.99) and (7.101):

(8.21) There were many boys kissed many girls
(8.22) There were many boys who kissed many girls

There are, however, two distributional patterns of many which are not found with some and which we have to show are explicable in terms consistent with (20) before we can assert that that structure is indeed correct. These are that many is directly negatable and that many collocates in a variety of ways with 'definite' NP's. As the former is a rather complex issue we shall leave it aside for the moment and discuss only the second point. But even on this second point we have to make one reservation, namely that as we have not yet suggested what the underlying structure for 'definite' NP's might be, cf. Chapter 12, much of the argument below will have to be founded upon an unproven assumption concerning that structure. However the assumption seems plausible enough, I would maintain, to ensure that no great harm is done to the validity of the following argument.
The first type of collocation with a 'definite' NP which I wish to examine is exemplified by:

(8.23) The boys that kiss girls are many
       (in number)

A variation of this seems to be:

(8.24) Many are the boys that kiss girls

Although it may be objected that (23) is of dubious acceptability, it nevertheless must be discussed, especially as Lakoff (1971c:238) has claimed that (24) is synonymous with:

(8.25) Many boys kiss girls

While it may be correct to claim that (23) - (25) are always assigned the same truth values under the same conditions (at least, we shall make no attempt to prove otherwise), it seems unfortunate if we must then extend the claim to complete synonymity.\(^5\) One objection to the claim that (23) and (24) are synonymous with (25) is the presence of a 'definite' NP in the first two examples versus the absence of any such NP in the last example.

\(^5\) With this point we once more return to the old chestnut of whether synonymy ought to be defined in terms of truth values and the related tools of logic, cf. §5.5. That generative semanticists have often had too restricted a view of semantics is one of the arguments advanced in this thesis; it is also to be found in the works of many other linguists, see especially Bolinger (1971).
It is not at all clear that Lakoff's account is able to explain this. What is worse is that if in (24), for example, we make boys 'indefinite', then we obtain:

(8.26) ??Many are boys that kiss girls

It is doubtful that (26) is acceptable, but with marked intonation it may be made so. But the interpretation of (26) is then something like:

(8.27) Many of the people that kiss girls are boys

Again, it is difficult to see how Lakoff can account for this.

To view the question of alleged synonymity from another angle, consider what the information content of (23) or (24) is: both sentences give as their major point of information the size of the set of boys who kiss girls. But in (25) the major point of information is that a large set of boys kiss girls. It may be possible, as Lakoff (1971c:260-63) claims, to handle matters such as topic, focus and comment by means of a global constraint, but it is undeniable that if such a constraint is used to explain the above examples, then they are going to change meaning, albeit in a rather subtle way which is not always recognised or accepted by generative semanticists with a logical bias, cf. again note 5. It would be preferable if, instead, we could account for the differences between (23) and (24) on the one hand and (25) on the other by means of some
difference in underlying structure. A first attempt at this, making use only of the fact that many is derivable from a large number, gives us an underlying structure corresponding to:

$$(8.28) \quad [\underline{s} \text{The boys}[\underline{s} \text{boys kiss girls}] \text{are A NUMBER}] \text{and} \underline{s} \text{A NUMBER BE large}]$$

But this can be rejected immediately since by adjectivalisation of the nonrestrictive clause we shall obtain the ungrammatical:

$$(8.29) \quad * \text{The boys that kiss girls are a large number}$$

We might attempt to save (28) by suggesting that in such cases a large number is obligatorily lexicalised to many, but this is an ad hoc solution which omits to take account of the fact that such lexicalisation is not obligatory elsewhere.

Now let us recall the observation made in §7.3 that the number can occur only with quantity-referring predicates, cf. (7.44a). Parallel to such a sentence we also find:

$$(7.44a) \quad \text{The number of men who came to the party was five}$$

$$(8.30) \quad \text{The number of boys that kiss girls is large}$$

Bearing in mind the restrictions which we have already had cause to note, (30) can be considered as a reasonable paraphrase of (24). We may thus conclude that the
underlying structures for the two sentences are virtually identical, and continue from there to see whether or not it is possible to derive (24) from such a structure. If we ignore the restrictive relative clause for one moment, we can see that (20) is not a suitable underlying structure for the matrix (31), for two reasons:

(8.31) The number of boys is large

The first is that there is no related existential sentence such as:

(8.32) *There is the number of boys (is) large

The second is that the concord in (31) is between singular number and the verb, not plural boys and the verb. Both these facts suggest that there is no justification for postulating a higher existential sentence in the underlying structure of (8.30). We shall, nevertheless, want to retain the predicate nominal source of boys, for that hypothesis has already been seen to be useful. There will thus be some departure from the surface structure of (30). Ignoring the exact status of girls, which would only irreverently complicate the present issues, we can suggest the following underlying structure for (23), (24) and (30):
By the derivational processes which we have already observed to be necessary in connection with (7.94) and (20), but this time applied to THE NUMBER, we obtain (30). The stage immediately before that sentence, when lexicalisation has not taken place, will be:

(8.35)  THE NUMBER boys that kiss girls BE large

There must be provision at this stage for lexicalisation to *many*, and thus NUMBER and *large* must be brought together. Obviously there are two options. The first is to move *large*:

(8.36)  *The large NUMBER boys that kiss girls BE

That is ungrammatical even if *we* lexicalise to *many*, nor is it saved by deletion of BE:
(8.37) *The many boys that kiss girls

Let us therefore see what happens if we shift NUMBER, the second option open to us:

(8.38) The boys that kiss girls BE large NUMBER

Notice that two very strange things happen here. Firstly, it now appears as if the is attached to boys; secondly, boys becomes the subject NP of BE. The first can perhaps be justified on the grounds that the seems to be obligatory in constructions such as (23), see too (26) and (27). If it were not the case that the derivation was from THE NUMBER this could hardly be explained. There is also the fact that otherwise one the would have just disappeared and another one mysteriously taken its place. The second can only be justified on the evidence of subject - verb concord. It has to be admitted that we are on slippery ground here, and this is perhaps even truer if we do not lexicalise to many in (38), for then we obtain:

(8.39) The boys that kiss girls are large in number

That, of course, is an eminently desirable result, but I am at a loss as how to explain the appearance of the preposition. The situation is eased only if we do not lexicalise to many, for then we generate (23), but without the parenthesised addition. The latter could be permitted by optional retention of number, and this has one advantage. It is simple to see that in number is
is redundant in (23) and we are now able to explain that this is because NUMBER is already contained in many and that its retention is mere repetition. Further, (24) is derivable by a transformation which, unusually, permutes the subject and complement, but as Plötz (1972:148), among others, has shown, the rule is necessary even if it is of restricted applicability. In the present case it appears to be the case that lexicalisation to many is at least preferable, if not necessary.

In the preceding paragraphs we have been able to explain, if only partially, one type of collocation between many and 'definite' NP's, but we still have to provide an explanation of a second and more common type, that is the occurrence of many in postdeterminer position, as in:

(8.40) The many boys kiss girls

Resorting immediately to semantics, we find the expected near-paraphrase in:

(8.41) The large number of boys kiss girls

This sentence points out one major difference between postdeterminer many and the first type of collocation, for here kiss is the matrix verb and it cannot come from an embedded relative clause; if it did we would be able to derive (37) and that sentence would be synonymous with (40). The highest sentence, therefore, must contain kiss, and its subject must be NUMBER if we are to retain the generalisation that nouns are derived from
predicate nominals. These demands point to an underlying structure of the form:

\[(8.42)\]

Following the rules outlined in connection with previous derivations it is simple to derive (40) or (41). But one possible criticism of this proposal has to be refuted: it is that (42) violates the previously mentioned selectional restriction for the number that that NP must have a quantity-referring predicate, for although \(VP_2\) meets that restriction \(VP_1\) does not. It has to be admitted that no fully satisfactory reply can be given, but the following answer seems worthy of a little consideration. Let us suppose that the restriction is modified to permit the number to have a non-quantity-referring predicate only under the condition that there is a coordinating predicate which is quantity-referring, in other words, at least one predicate of the number must be quantity-referring. If this restriction is correct, not only will it permit (42), but it will also block:
(8.43) *The some boys kiss girls

as this would have the ungrammatical structure:

(8.43')

If the above account is correct, then we have been able to provide underlying structures for all occurrences of many except those where it is directly negated. Furthermore, we have shown not only how many is to be related to some, but also why some cannot occur in certain environments where many is grammatical. Basically these are two so far, which have been represented in underlying form by (33) and (42)/(43'). In the last paragraph we saw why some does not appear in postdeterminer contexts: the structure demands a quantity-referencing predicate which some does not have. Similarly, it is the lack of the predicate BE large which blocks some collocating with 'definite' NP's of the first type: since there is no such predicate the highest VP in (33) will be empty, and so the structure will be ungrammatical. And we have already noted that the predicate BE large could not be replaced by EXIST, because the subject NP is 'definite'. 
There seems good reason, therefore, to believe that the underlying structure for *many* is as has been presented. Before moving on to examine the interaction of negation with this compound existential—compound because two coordinate sentences form its basic underlying structure—it might be best to see whether or not the other compound existentials can be explained in terms consistent with this basic hypothesis. Let us firstly consider the cases of *more* and *most*, which ought to be regarded both synchronically and diachronically as the comparative and superlative forms respectively of *many*. Within the hypothesis we have been proposing *more* and *most* are easily explicable. For example, the difference between *many* and *more* in underlying structure will be that for the latter quantifier the predicate of the sentence coordinating with the existential sentence, i.e., $S_2$ in (20), will be BE larger. Similarly, *most* will be derived from a superlative form *largest*. Because (20) demonstrates that *many* is derived from a noun modified by a nonrestrictive adjective, it is then able to account for the relation between *many*, *more* and *most* and to state explicitly that the latter two are derived from comparative and superlative forms of the nonrestrictive adjective. These quite simple facts are inexplicable in a theory which treats *many* (and hence *more* and *most*) as an unanalysable predicate, such as proposed by Carden (1970c) even when *many* is a post-
determiner and therefore, in surface structure terms, most adjectival.

One objection to our analysis might stem from the fact that generally superlatives appear to be grammatical only if the NP is 'definite':

(8.44) a Jane is the prettiest girl  
   b *Jane is a prettiest girl

On the other hand, the quantifier most regularly appears without a 'definite article':

(8.45) Most girls passed the exam

But this ignores the interesting fact that if a superlative is formed by most, then the 'definite article' is not always obligatory:

(8.46) Jane is a most pretty girl

In such cases most seems to be functioning as an intensifier, cf. Quirk et al (1972:287), Bolinger (1972:22). It appears reasonable to claim that the quantifier most is functioning similarly: (45) can be better paraphrased by (47a) than by (47b):

(8.47) a A majority of girls passed the exam  
   b The largest number of girls passed the exam

Of course, when most appears in postdeterminer position then it does function as a 'true' superlative:

(8.48) Celtic won the most games that season

(48) is best paraphrased by (49b), not (49a):
(8.49) a Celtic won the majority of games that season

b Celtic won the largest number of games that season

The above objection, therefore, does not hold, for the grammaticality of most in contexts other than post-determiner can be related to a similar usage of the superlative. But what is perhaps more interesting is that there is some evidence to suggest that certain usages of the comparative and especially the superlative are to be explained in terms of the underlying structures of more and most. This is not simply a matter of the fact that these quantifiers are called in to play a part in comparison formation of adjectives, revealing as that is; what is especially fascinating is that, for example, most pretty is not, pace Quirk et al (1972: 286), a "periphrastic equivalent" of prettiest, as can be seen by comparing (44b) and (46). The grammaticality of the latter, which otherwise would be a mysterious deviation from the rules for superlatives, is explicable because of the fact that most is derivable from, crudely
speaking: 6

\[(8.50) \text{ A largest } N \text{ exists} \]

We have been able to demonstrate that the underlying structures hypothesised for many permit an interesting extension to more and most. Let us now consider the case of much, which is in a suppletive relation to many, as can be demonstrated by two facts. Firstly, many only occurs with countable nouns, much only with mass nouns; secondly, much has exactly the same comparative and superlative forms as does many. Therefore with a mass noun we find the following forms:

\[(8.51) \]

a. Much snow fell yesterday

b. More snow fell yesterday (than on Tuesday)

c. Most snow fell yesterday

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6 The use of N in (50) can be justified in spite of its vagueness. We have already noted in §7.5 that we need both A NUMBER and A QUANTITY, see too below. In the case of comparison perhaps something like DEGREE or EXTENT is needed. But the question of comparison is too complex to be discussed in any detail here; for references to recent work in that field see Hale (1970). Hale's own solution to the problems of comparison is consistent with the remarks made here, see especially his introduction of a "quantifier element" (Hale, 1970: 32).
We can explain this suppletion by postulating A QUANTITY as the underlying noun rather than A NUMBER, on the lines already justified in §7.5. However, much has gaps in its distribution which are not found with any of the other compound existentials and which are totally unaccounted for by our hypothesis so far. The first of these is that (51a), although grammatical, is rather unusual; the second is that much cannot normally appear in postdeterminer position, although that was apparently acceptable in the earlier history of the language, cf. the OED entry for much:

(8.52) *The much snow fell yesterday
And the issue is further confused by the acceptability of:

(8.53) The large quantity of snow fell yesterday

These facts suggest that it is impossible to account for the distribution of much in terms of the hypothesis which we have constructed above. But there are some slight semantic indications which point the way to an admittedly vague and not wholly justifiable explanation of what is going on. We have already noted, cf. §8.1, that the appropriateness of a number is sharply restricted by the adjectival modifications large and small. But with quantity this does not seem to be so clearly definable. As a result a quantity is often somewhat unacceptable as the subject of a declarative
(8.54) A quantity of beer was drunk by the soldiers

Even if (54) is not wholly unacceptable it is certainly less acceptable than:

(8.55) a A large quantity of beer was drunk by the soldiers
     b A small quantity of beer was drunk by the soldiers

And alongside (54) we find that substitution by some improves the acceptability:

(8.56) Some beer was drunk by the soldiers

However, it seems to me that the amount of beer referred to in (56) is slightly less than that referred to in (54), although larger than in (55b). This might be connected with the notion that a quantity is poorly defined; because of this it seems preferable to give a more clear-cut notion by deviating slightly from a theoretical norm. Because the deviation appears to be insufficient to justify the postulation of an adjective, some is an excellent candidate for handling the deviation, which it does in a downwards direction. But what about the possibility of a deviation upwards, towards a larger quantity? This, it appears, is the task of much. If this is so, then we can state that much is not always a suppletive form of many but is sometimes a necessary semantic deviation allied to a quantity and some.
Even if the above argument from intuition is accepted, there still remains the question of whether its conclusions are formalisable or not. But the following approach seems not without merit. Let us claim that there are two sources for much: (a) from A QUANTITY; (b) from A large QUANTITY. Further, the two sources are mutually exclusive: if one is permissible the other is not. Then we must state conditions on the acceptability of (b), which are that for (b) to be acceptable the underlying adjective must be modified in some way, for example by comparison (which gives more, most) or negation (not much). For some unexplained reason modification by very appears to be dubious. It also has to be stated that much from source (a) is the result of a choice between it and some, where much is the marked choice. From this the following conclusions can be drawn: (i) the unusual character of (51a) is due to the choice of marked much over unmarked some; (ii) the ungrammaticality of (52) is due to the fact that much is there derived from A QUANTITY, which is not adjectivally-modified, and thus cannot appear in postdeterminer position for reasons already given.

So far we have only discussed compound existentials which have as part of their underlying structure a predicate BE large; yet it would be unusual, indeed worrying, if there were not a parallel group with a predicate BE small. Fortunately there is such a group,
and the quantifier in this group which is analogous to many is a few. Since it has exactly those characteristics which would be predicted from the fact that the major distinction between it and many is the change of underlying adjective, it is unnecessary to prolong the discussion of a few, see, however, §§6.2 and 8.4. But we may note that a few, exactly like many, has comparative and superlative forms, namely fewer and fewest. And further there is a corresponding set for collocations with mass nouns: a little, less, least. This last set is rather different from much, more, most, however, and perhaps, therefore, it would be useful to discuss it briefly.

Firstly we should note that a little has a wider range of acceptability than much, as is exemplified by the complete grammaticality of the following:

(8.57) a A little snow fell yesterday
    b The little snow fell yesterday
But this can be explained in terms of the account of the relation between a quantity, some and much discussed above. Much has a restricted distribution because it can be used to handle necessary deviations from a norm; but a little is not so used, because downwards deviation is handled by the quantifier some. Therefore a little is always available for derivations from the source A small QUANTITY and these derivations are never blocked by competing derivations from A QUANTITY, which is the
cause of the ungrammaticality or rather dubious character of much in certain contexts. As for the second point of difference, there seems little option other than to note it, for there is no obvious, and even, it would appear, no obscure reason why it should occur. It is that although the comparison of a little is not formed with the same items as the comparison of a few, it is nevertheless the case that less, least can be used, apparently synonymously, instead of fewer, fewest:

(8.58) a Fewer students passed the exam than failed it
b Less students passed the exam than failed it

(8.59) a Celtic lost fewest games that season
b Celtic lost least games that season

But the interchange is not reflexive:

(8.60) a *Fewer snow fell yesterday
b *John ate fewest bread

8.4 Negative remarks

In the previous section we noted that it would be necessary to discuss the fact that many, and indeed, all the compound existentials discussed so far, may be negated. The interaction between negation and quantifiers is complex, but nevertheless we ought to observe that given underlying structures like (20) it is not a matter of surprise that such interaction occurs. Without
considering the possibility that the higher existential sentence might be negatable, see below, S10.2, we can still see quite indisputably that the other half of the source of many is negatable. Thus instead of (20) we might find (and this is a first approximation):

(8.61)

This will yield:

(8.62) Not many boys kissed not many girls

There is an interesting extension of this type of analysis available, for, as we have mentioned before,
Lakoff (1970d:395) has argued convincingly that few is to be derived from not many. We can now see that in detail this is not correct, although the principle of Lakoff's claim does appear to be correct. Instead of claiming that few is derived from not many, which is rather difficult to justify since, as we pointed out in Chapter 5, the Lakoff-Carden analysis gives no proper explanation of why many should differ from some in any way, we can claim that few is derived from the same source as not many, with the additional transformation of negative absorption to produce few, which is needed by Lakoff in any case. Thus (61) is also the underlying structure of:

(8.63) Few boys kissed few girls

Similarly, if we are dealing with the mass quantifier much, we shall be able to obtain both not much and little. Note that, as observed in §8.3, much is in this case derived from an adjectival source. In the cases of a few and a little there appears to be no absorbed negative quantifiers, but this is probably due to the fact that not a few and not a little are stylistically marked, being examples of litotes, cf. Bolinger (1972: 123) and below:

(8.64) a Not a few self-proclaimed socialists send their sons to public schools

b Not a little money has been wasted on Concorde
Before moving on to discuss some more complex problems, it is necessary to return at this point to a problem raised by Carden (1970c) and discussed in §3.2. It is that not many can appear in some contexts where not + adjective is ungrammatical. Thus we find the following examples, repeated here for convenience:

(8.11a) Not many people came to the party

(8.12) *Not happy inmates escaped

But we can now see, by referring to (61), that there is a crucial distinction between the two occurrences of not. In the first instance not is associated with an adjective and thence with a noun which together have been lexicalised into many; in the second instance not is associated with happy and thence with inmates, and neither of these has been absorbed. It seems quite clear, and consistent with Carden's own remarks (1970c: 418), that this absorption process, together with the fact that not is only in the same NP as people in (11a) at surface structure, accounts for the difference between the two sentences.

It is also possible to account for the ungrammaticality of Carden's postdeterminer example, again repeated here:

(8.13) *The not many inmates escaped

Although in this case large NUMBER is collapsed into many, the required modification of (42) shows quite undeniably that not is in the same NP all the way from
the adjectivalisation of the nonrestrictive clause right up to surface structure. If our earlier claim that the constraint blocking an overt negative from appearing inside an NP is a shallow structure constraint, then this will account for the ungrammaticality of (13). Carden further claims (1970c:419), however, that negative absorption is possible in (13), giving:

(8.65) The few inmates escaped

The acceptability of (65) may be parallel with the acceptability of:

(8.66) The unhappy inmates escaped

but it is not certain that the negative absorption process is identical in (65) and (66), which it clearly needs to be in order to uphold the parallelism. We return to this question below.

In an important paper Lakoff (1971c) claims to demonstrate that not only must an adequate grammar of a language contain transformational rules or "local derivational constraints", but that it must also contain "global derivational constraints". Just as transformations define possible derivations by constraining pairs of successive or adjacent phrase markers, so global derivational constraints define possible derivations by constraining pairs of non-successive or non-adjacent phrase markers, cf. Lakoff (1971c:233-34; 1970a). This perhaps would not be so relevant to our present concerns were it not for the fact that Lakoff attempts to show
that global constraints (or rules) are necessary in order to obtain correct and adequate derivations for sentences containing a negator and a quantifier. It therefore behoves us either to show that our proposed hypothesis can be accommodated within Lakoff's theory or to disprove that theory. The problem and solution which is suggested by Lakoff is so complex that we can only attempt to provide a partial resolution of the question and we shall only discuss one of the several problems analysed by Lakoff in the hope that our own answers might provide a useful programme for study.

Lakoff (1971c:244) discusses a dialect in which (69) is synonymous with (67) but not with (68):

(8.67) Not many arrows hit the target
(8.68) Many arrows didn't hit the target
(8.69) The target wasn't hit by many arrows

Following §5.4 we may say that in all dialects (67) has only a neg-Q reading and (68) only a neg-V reading, and that in the dialect with which we are concerned (69) has only a neg-Q reading (there are other dialects in which (69) may have either a neg-Q reading or a neg-V reading, see below). Lakoff suggests that (67) and (68) have the readings of (70) and (71) respectively:

(8.70) $[\text{not} [\text{sarrows}_1 [\text{sarrows}_1 \text{hit the target}]] \text{were many}]$

(8.71) $[\text{sarrows}_1 [\text{not} [\text{sarrows}_1 \text{hit the target}]] \text{were many}]$
The global constraint which handles the derivations from such structures is as follows (Lakoff, 1971c:244, 246):^7

(8.72) Let:  \( C_1 = L^1 \) commands \( L^2 \)
        \[ C_2 = L^2 \] commands \( L^1 \)
        \[ C_3 = L^1 \] commands \( L^2 \)

Constraint 1': \( P_1/C_1 \supset (P_a/C_2 \supset P_a/C_3) \)

Translated into ordinary language (72) states that if the first S-node higher than some negator or quantifier dominates some other negator or quantifier at underlying structure and the first S-node higher than that other negator or quantifier dominates the first negator or quantifier at shallow structure, then the first negator or quantifier precedes that other negator or quantifier at shallow structure.

Let us examine how this constraint works in relation to (67) - (69). Firstly, (67) ought to be derived from (70). In (70) not commands many; in (67) many commands not and not precedes many; therefore the derivation from (70) meets the constraint. Similarly, a derivation from (71) to (68) meets the constraint, for in (71) many commands not and in (68) not commands many.

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7 Abbreviations are as follows: \( L \) = quantifier or negator; \( C \) = tree condition; \( P_1 \) = underlying structure; \( P_a \) = shallow structure; \( P_1/C_1 \) = tree condition 1 is satisfied at underlying structure.
and many precedes not. In (69) not commands many and many commands not, also not precedes many. Therefore in the dialect where the constraint applies not must command many in underlying structure. That is true of (70) but not of (71), and therefore (69) is derivable from the former only. This explains precisely the questions at issue, and since it does so in a manner which is both revealing and capable of extension, cf. Lakoff (1971c), it seems desirable that our own hypothesis be consistent with it.

It is indisputable that (61) as it stands is not completely consistent with the constraint, for the underlying structure of (67) would then be, somewhat simplified:

$$ (8.73) \quad \text{[}_gA \text{ NUMBER EXIST[}_gA \text{ NUMBER hit the target[}_gA \text{ NUMBER BE arrows]}]}\text{and[}_gA \text{ NUMBER BE large]} $$

(73) does not meet tree condition 1 which states that not (or neg) commands many in underlying structure, as the first S-node higher than neg does not dominate many but only a part of it, namely the coordinate partner of the higher existential. Also, and more seriously, that part of many commands neg. Let us, however, take another look at (70), for then we can see that neg is to be taken as a higher predicate. Therefore (73) must be amended to:
This still doesn't help a great deal, it seems, for although neg now partially commands many in underlying structure and many does not at all command neg there, the command is partial, because of the compound structure of many. If we now examine the underlying structure entailed by our hypothesis for (68), we find that much the same problem exists there:

\[(8.75) \begin{align*}
\text{s} & : \text{a number exist}\left[ \text{a number hit the target [a number be arrows]} \right] \text{and} \\
\text{s} & : \text{neg [a number be large]} \\
\end{align*}\]

The only difference here is that many commands neg in underlying structure, but again the command relation is only partial. What is worse, it is the existential partner, not the quantity-referring partner, which does the commanding this time.

We are in all the more serious trouble for there does not appear to be any scope for modifying our hypothesis to make it fully consistent with the constraint and yet not at the same time change it beyond recognition. The only possibility would be to move neg into the same sentence as the conjunction marker in (74), but this is open to two objections. The first is that both Lakoff (1970c:150ff.) and R. Lakoff (1971:145) have shown that neg is dominated by the S-node which dominates
only the matrix sentence which is negated and sentences embedded in that lower S, i.e., that neg has precisely the position exemplified by (74). But even if we ignore that point then the second objection still holds, for it concerns the dubiety of making a command relation between the existential partner, rather than the quantity-referencing partner, and neg crucial. We could attempt to circumvent this in two ways: one is to say that the command relation need only hold between the existential sentence and neg regardless; the other is to permute the existential and quantity-referencing sentences. But the first way still remains suspect, especially because it is the relation between the neg and the quantity-referencing predicate that is important; it is only through such a predicate that neg can be introduced into the underlying structure of existential quantifiers. The second way out is suspect because if it is adopted there will be two mechanisms for introducing existential quantifiers into sentences: for some it will be from a higher existential; for many from a higher quantity-referencing sentence with an existential sentence attached. Not only is that uneconomical but the second structure is totally incomprehensible.

It might not be altogether immodest, however, to suggest that it is not our hypothesis which is incorrect but Lakoff's. And there is one very good reason for this, namely that Lakoff's hypothesis rests on one
assumption which we have observed to be fundamentally mistaken. This is that quantifiers form unanalysable (logical) predicates. It is this which is the major source of conflict for it has become clear that the difficulties which we are discussing stem from the fact that we have postulated two (coordinate) higher sentences for the source of many. The global constraint suggested by Lakoff only works if many is derived from a single higher sentence and thus it provides a potential counter-example to our hypothesis. But it is the only possibly valid counter-argument which we have encountered, and that makes it suspicious. Would we therefore be justified in modifying the constraint to accommodate a complex source for many and then seeing whether this modification was plausible or not. The modification which I would propose is that "L" is either a quantifier or a neg element or part of such an element, where "a part of" means one member of a coordinate-conjoined structure. This must be regarded, however, with considerable suspicion. What is really required is that the constraint applies not being underlying structure and shallow structure, but between the point at which coordinate conjunction of the higher sentences applies and shallow structure. But global rules require two well-defined levels of structure and that solution would clearly fail to provide these. Therefore the most probable outcome is that our solution is incompatible with Lakoff's proposal.
If Lakoff's constraint is correct then it is indeed the case that our own position is very weak, because although it is consistent with a modification of that constraint the modification is not very plausible and it makes the constraint very complex. But the correctness of the constraint is by no means certain, and not only for the reasons given in the previous paragraph. Consider firstly the three sentences below:

(8.76) Not a few arrows hit the target
(8.77) A few arrows didn't hit the target
(8.78) The target wasn't hit by a few arrows

According to the constraint (78) ought to have as its primary (or even only) reading one which is synonymous with (76), because in surface structure the negative element precedes the quantifier and each commands the other. But in fact the primary (and probably only) reading of (78) is equivalent to that of (77), as the absence of litotes in the former clearly indicates. Further evidence on this point is given by Bolinger (1972:123):

"The diminishers differ from the other intensifiers [e.g., a little as opposed to very: RMH] in that the negative tends more strongly to show itself as an immediate constituent of the intensification, and not be absorbed by the verb. This is to say that it adjoins the intensifier, with only the indefinite article potentially intervening."
Few and little show this particularly:

If it is worth not a few sacrifices, it is worth a great deal
If it isn't worth a few sacrifices, it isn't worth much
I have spent no little time in trying to convince them
*I haven't spent a little time in trying to convince them"

Whatever the reason, Lakoff's constraint gets exactly the wrong answer in the case of (78).

Another point which we might note is that since the global constraint is almost wholly concerned with discussing active - passive correspondences, the impression might arise that the constraint is designed to handle derivations where an intermediate transformation, such as the passive, reorders NP's. But this is not entirely so, for as can be seen it is (79a), not (79b) or (79c), which causes difficulty:

(8.79) a  John didn't buy many arrows
           b  Not many arrows were bought by John
           c  Many arrows were not bought by John

This prompts the feeling, reinforced by Bolinger's remarks above, that it is when the quantified phrase is a surface object that the possible ambiguity or failure of underlying scope relations arises. This is a point originally made by Jackendoff (1969:222-31) and repeated
in Chomsky (1971:103-6) and Jackendoff (1972b:325-36). Both authors argue that the scope of negation is determined at surface structure and that it ranges over the structure dominated by the node which is then immediately above neg. Thus in (79a) the scope of the negation is over the VP, including the quantifier, and in (79c) the scope is also over the VP, but naturally excluding the quantifier; in (79b), however, the scope is over the whole sentence, thus including the quantifier. The objection to such a solution, of course, is that the passive transformation will be meaning-changing, or, rather, it will relate (79a) and (79c) which are different in meaning, and it was this objection that Lakoff's postulation of a global constraint was designed to overcome. It should also be pointed out that Jackendoff's analysis fails to account for dialects, such as Lakoff's and my own, where sentences such as (69) and (79a) are ambiguous. And, of course, Jackendoff and Chomsky are committed to semantic rules which occur at other points than underlying structure, which is a basic complication of the grammar.

We now appear to have reached a dead end, for neither the hypothesis that scope is determined at underlying structure, the derivations from which are constrained globally, nor the hypothesis that scope is determined at the surface, is able to account for the variations we have observed. Unless we are able to
discover further evidence which supports one or other of these proposals or yet another hypothesis we shall be in an impossible situation. Therefore consider the following pair of sentences:

\[(8.80)\]

a  Not many stamps are not collected by John

b  *John doesn't collect not many stamps

Since the former is a passive transform of the latter both ought to be equally grammatical, but in fact the active partner is ungrammatical. At first sight this seems explicable in terms of the surface constraint suggested by McCawley (1969), cf. Langacker (1972:234). This constraint blocks the appearance of two negatives in one VP, thus accounting for the alleged ungrammaticality of:

\[(8.81)\]  Max doesn't not like music

But Carden (1972:39) has produced some data, for American English at least, which shows that (81) is marginally acceptable, and even if the degree of acceptability is low, it certainly seems to be much higher than for (80b), which is totally unacceptable. Thus although we might well agree that McCawley's constraint is reasonable, if not always totally fulfilled, it would seem incorrect to apply it equally to (80b) and (81), since the two sentences show perceptibly different degrees of acceptability.
Suppose, therefore, that we attempt to account for (80b) by a rather different constraint, which we shall state provisionally as:

(8.82) No negated quantifier may be lowered into a negated VP

Not only will this account for (80b), but it will also account for the relation between the following pair:

(8.83) a Not many arrows didn't hit the target

b *The target wasn't hit by not many arrows

It is not possible to account for (83b) by claiming that in this case the passive transformation must not apply, for if we compare (80) we find that it is the active partner which is ungrammatical. Therefore in one case the passive transformation must apply, in the other it must not, and this is determinable solely in terms of whether the negated quantifier ends up in the negated VP or not. To state this fact in terms of conditions on the passive transformation would be cumbersome, and also to hide the true nature of the syntactic processes at work with an ad hoc formulation. On the other hand, as long as existential-lowering applies after passivisation, and since the latter is a cyclical transformation this can be predicted, our putative constraint (82) is perfectly adequate.
But nevertheless (82) seems unsatisfactory, since although it purports to be a general constraint on all possible transformations it appears merely to operate with regard to existential-lowering. We shall see below that this statement has to be modified, but at present let us try to resolve this by considering a simplified structure of the underlying form of (80b) in which we accept that the neg on many originally dominates the S containing the quantity-referring predicate, and with the neg on the VP already lowered:

(8.84)

Let us now accept that the two sentences which constitute the underlying elements of the quantifier are conjoined; this process seems to be necessary if we wish to account for the grammaticality of sentences where existential-lowering does not take place, as in:

(8.85) There are not many stamps John doesn't collect
(85) also suggests that our supposition in §7.5 that lexicalisation to many takes place before existential-lowering is substantially correct. Therefore after both coordination conjunction and lexicalisation have taken place we shall find:

\[(8.86)\]

If we now suppose, but, as we shall see, not entirely correctly, that existential-lowering follows, the question is: what exactly happens to the highest neg? I would suggest that the lowering transformation operates to produce the following structure:

\[(8.87)\]
There are two justifications for claiming that the transformation has this result. Firstly, the transformation will then preserve the structural relations between the higher neg and many as closely as possible, crucially, command relations are not distorted and the same shape of tree relation is found both before and after the transformation. To some extent this echoes various remarks of Emonds (1970), although the parallel cannot be pursued too closely. Secondly, as can be seen from the above together with a brief demonstration below, no new transformations will be needed; this point is partially vitiated by a further point which we come to rather later in this discussion, but it will then be clear that it is not an absolute objection. No new transformations are needed because in the first place existential-lowering in the instance of (86) to (87) is no different from that in instances where there is no negative, and in the second place we can now lower the higher neg in accordance with normal rules. But these have the effect of (eventually) placing the neg exactly in the position already occupied by a neg. Therefore the structural description for neg-placement cannot be met and the derivation is blocked. It will never then be possible to apply a further rule which might move the appropriate neg over the verb and into the quantified NP, giving the surface structure of (80b).
Assuming that the above account is correct, how does it enable us to explain the facts of that dialect in which (69) has only the reading which is synonymous with (67)? This is especially important in the light of the evidence given by Johansson (1974:26) that this is the most common dialect. Now although we have explained the ungrammaticality of (80b) simply in terms of a transformational rule, this has the same effect (approximately) as constraint (82). Let us suppose, therefore, that in the dialect with which we are concerned there is a generalisation of (82) to:

(8.88) No quantifier may be lowered into a negated VP

Thus in the case of (69) it would have the structure immediately before existential-lowering of (89), if it had a neg-V reading equivalent to (68):

(8.89)

But existential-lowering fails because of (88). This
need not be stated as a constraint but could be given as part of the structural description if this were desirable. Of course, in that dialect in which (69) is ambiguous no such restriction is to be found. It is interesting to note that the constraint outlined in (88) would apply in a quite different case, so that in the dialect where (69) is synonymous only with (67), but in that dialect only, (90) will be ungrammatical: 8

(8.90) John didn’t buy some arrows
for the underlying negative cannot command a simple existential, as we observed previously. Unfortunately, probably because of the ease with which stress patterns can be changed to allow grammatical interpretations, as:

(8.91) John didn’t buy some arrows
it is difficult to estimate whether or not this prediction is correct.

The above argument is largely a modification of a proposal which I made in Hogg (1974) and which is criticised in Johansson (1974). But there are four objections by Johanssson which still need to be answered. Three of the objections concern the ordering of neg-lowering and neg-placement so that, for example:

(8.92) ??John bought not many arrows
would be derived from an earlier structure corresponding to:

8 That is, if normal stress patterns hold.
(8.93) John didn't buy many arrows
But of course in (93) the not may be, in some dialects, ambiguous between a neg-V reading and a neg-Q reading; in contrast, (92) unambiguously has a neg-Q reading. Therefore the **neg**-placement rule to generate (92) will have to have access to information about earlier structures, that is, it will have to be global. Naturally this is only an objection if we are trying to dispense with global rules, but since that is one of our objectives we must find some alternative solution. And we can indeed do so by proposing that in those dialects in which (92) is acceptable there is an optional **neg**-lowering transformation which may apply before existential-lowering, but after coordination conjunction. In such instances, therefore, the **neg** will be lowered onto **many** before **many** itself is lowered, and then the negative and quantifier will be moved together into the verb phrase of the matrix sentence with the deletion of EXIST. This has the effect that (82) and (88) will now have to be retained as constraints, and the justification for (87) will be primarily that of motivating the constraints in question, rather than in avoiding their necessity.

There are two strong arguments against Johansson’s counter-proposal that the reading of (93) equivalent to (92) should be derived from a structure corresponding to (92). The first of these is that (92) is only very weakly acceptable and therefore it is unfortunate that
the fully acceptable and, indeed, preferred reading of (93) should have to be thus derived. The second is that there does not seem to be any other transformation which moves a neg leftwards over a (surface) verb and preserves meaning. The only other rule which approximately corresponds to this is Neg Transportation which, as we have seen in §5.4, is meaning-changing. If we reject Johansson's suggestion we can postulate a useful constraint on neg-movement rules to this effect. Further, there is a good argument against the proposals of Hogg (1974) and in favour of the above, which is analogous to our second argument against Johansson. Our original proposal moved a neg rightwards over a verb, but there does not appear to be any other rule (in Modern English) which does so. Since this does not happen in the case of a derivation such as we have now suggested, this implies that we can also restrict neg-placement so that it never performs such a task either. All these arguments, with their interesting restrictions on movement transformations, cf. Emonds (1970), combine in favour of our new hypothesis.

The second objection given by Johansson (1974:25) is that my proposals would apparently relate such non-synonymous pairs as:

(8.94) a He left not many minutes later
   b He didn't leave many minutes later

This is very probably a valid criticism of the proposals
in Hogg (1974), but note that all of Johansson's examples involve a quantifier in an adverbial phrase, and so far we have been concerned with verb phrases. But if we accept, and this seems to be correct, Lakoff's (1970c: 157) conclusion that adverbials originate in a higher sentence, then (94a) will have at no point a structure which will permit the neg to find its way into the verb phrase, given the process of derivation for adverbials suggested by Lakoff. It is also useful to compare in this respect the grammaticality of (95) and (96):

(8.95) But not many years ago (for once) he did not visit the US

(8.96) *Not many people doesn't she take into her confidence

If (95) had the same underlying structure, approximately, as (96) we would expect it to be ungrammatical also, since it would at some stage contain a negated quantifier in a negated VP. There thus seems no reason for rejecting our present analysis on the basis of evidence from examples such as (94).

Example (96) above is involved in Johansson's third objection. If our own proposals are accepted then the ungrammaticality of that sentence can only be accounted for if we accept that existential-lowering takes place before the Y-movement transformation which preposes the object NP. Now this is in fact welcome, for Postal (1971:142-49) has shown that Y-movement is most probably
noncyclical and therefore occurs after a lowering transformation of the type we have discussed. On the other hand, Johansson (1974:25) claims that:

(8.97) Many people she doesn't take into her confidence is not ambiguous and certainly never has the neg-Q reading predicted as possible by ordering Y-movement after existential-lowering. If Johansson is correct then existential-lowering must both precede and follow Y-movement. But there is a conflict of opinion here, for although Johansson's claim is shared by Jackendoff (1972b:333), Lakoff (1971c:246) claims that (97) has exactly the same set of readings as:

(8.98) She doesn't take many people into her confidence

If Lakoff is correct, then no ordering conflict is found. Unfortunately there is no clear resolution of this contrast in opinion and therefore we cannot be certain that there is a valid objection on this point (nor, of course, can we be entirely happy about the adequacy of our own proposals). It is even more strongly the case that there is no definite reply to Johansson's fourth objection, which is that when the quantifier in the VP is in a partitive construction there is a stronger tendency to a neg-V reading, see Johansson (1974:26-27) and compare (99) with (69):

(8.99) The target wasn't hit by many of the arrows
It has to be admitted that we have provided no explanation of why this may be so.

Notwithstanding these last points, we may conclude that the constraints on existential-lowering into VP's suggested above provide a more adequate explanation of the sentence types illustrated by (67) - (69) and consequent examples than is provided either by Lakoff (1971c) or Jackendoff (1969, 1972b). Furthermore, these constraints are local constraints, in other words they are the product of or operate on normal transformational rules, and these rules do not change meaning. Therefore they do not provide counter-examples to the hypothesis that meaning is determined wholly at underlying structure and consequently they suggest that the introduction of global rules or rules of semantic interpretation into the theory of transformational grammar may be quite unnecessary. Finally, they are completely consistent with our proposed source for quantifiers, partly because conjunction reduction will have operated on the quantifier structures in question before the transformations and constraints apply. As far as quantifiers in subject position are concerned, there is absolutely no problem, since then existential-lowering is always followed by neg-lowering in such a way that the neg is always lowered into a surface position where it precedes the quantifier itself, and so no difficulties of scope assignment or 'interference' from a V node arise.
8.5 Conclusion

The major import of these two chapters is that it has been demonstrated that all existential quantifiers ought to be derived from a higher existential sentence where the quantifier is a noun; in the case of compound existentials this sentence has a coordinate partner which contains a quantity-referring predicate. With such a basic structure we are able to account for the discrepancies in distribution between simple and compound existentials, such as, for example, the ability of the latter to appear grammatically in postdeterminer and negative contexts, or the fact that the latter are subject to the adjectival process of comparison. Further, we have been able to account for a large range of sentences, notably surface existential sentences, which are inadequately explained by other hypotheses. We have also been able to observe that the interaction of negator and quantifier elements is only fully explicable in terms of a theory which is consistent with our proposed underlying structures, and that alternative suggestions which to a greater or lesser extent contradicted our theories about the underlying structure of quantifiers, especially compound existentials, did not explain the full range of the problem satisfactorily. One point which we have barely touched upon, but which lends further support to our proposals, is that whereas some is almost, but not quite, the only simple existential,
there is a fairly large group of compound existentials. This is easily explained, for it is undeniable that it is the quantity-referring sentence, with its scope for negation and the introduction of alternative predicative adjectives, that is the productive element in the structure. The existential sentence is scarcely capable of generating a whole range of quantifiers.\(^9\)

It would be foolish to claim that we have given an adequate explanation of the behaviour of all existential quantifiers. For example, we have not explained why the simple existential \textit{several} can appear in postdeterminer position, althought that is probably because it is then not the same lexical item as the quantifier, having, as it does, a rather different meaning in that context. Also, the distribution of \textit{enough} has not been accounted for, but we can only plead in mitigation that it is extremely difficult to determine what kind of quantifier it is. No doubt there are several other such 'problem cases'. Nevertheless, it does seem reasonable to claim

\(^9\) But we ought not to forget surface NP's such as a \textit{group}, which derive from a structure similar to that for \textit{some}. They do not appear, however, to be available for the lexicalisation process associated with \textit{NUMBER}. And as we have seen, there is some small scope for nouns other than \textit{NUMBER} to appear as the subject of the higher existential.
that we have established with some degree of certainty the basic underlying structures which must be assigned to existential quantifiers, and so we may now proceed to an analysis of universal quantifiers before returning in Chapter 10 to some residual problems. In Chapter 9 we shall attempt to prove that the underlying structure of universal quantifiers is rather different from that of the existentials with which we have so far been concerned. This may not be too difficult in view of the quite different surface behaviour of the universal quantifiers; but we must wait and see.
Chapter 9

Universal quantifiers

9.1 Are universal quantifiers quantifiers?

The heuristic procedures which were employed in §7.1 give the impression that all, which we shall take for the moment as the paradigmatic universal quantifier, occupies, as it were, a half-way house between the simple and compound existentials. Very simply, this is because, as we observed in examples (7.1) - (7.3), some can neither be negated nor occur in postdeterminer position, many can be negated and can occur in postdeterminer position, and all can be negated, following many, but cannot occur in postdeterminer position, following some. If there were no other evidence, then all that we would need to do would be to formulate a possibly rather simple rule which would block occurrences of all in postdeterminer contexts and this, one suspects, might be the only difference between the derivation of compound existentials and the universals. Of course the rule would appear to be ad hoc, but it would be extremely difficult to falsify.

But the universals display other surface characteristics which rule such a proposal out of court, and therefore we need not consider it seriously. Perhaps the most striking feature here is that all (but not
necessarily the other universals, see below, §9.5) can occur in positions other than those immediately preceding the NP with which it (putatively) collocates. This well-known fact has been commented upon extensively, cf. Carden (1968), Dougherty (1970:866-7; 876-78) and Anderson (1973c). The following examples are included in the data:

(9.1) a All cricketers write poetry
    b Cricketers all write poetry
For reasons which we shall shortly discuss, we can obtain a wider range of constructions by considering collocations with 'definite' NP's and therefore to (1) we may add:

(9.2) a The cricketers are all writing poetry
    b The cricketers have all written poetry
Such a distribution can obviously be compared with the distribution of adverbs, cf. Fiengo and Lasnik (1973: 465):

(9.3) a Cricketers rarely write poetry
    b Cricketers have rarely written poetry
However it would be foolish to jump too rapidly to the conclusion that the universal quantifiers are in fact adverbal in character. This is not because all etc. supposedly collocate with nouns, for it might be that some explanation of that could be found; nor is it because all is ungrammatical if moved to a post-object
NP position, compare:

(9.4) a  *Cricketers write poetry all
       b  Cricketers write poetry rarely

After all we might be able to explain this by forbidding a universal quantifier, unlike a 'true' adverb, to move across an NP boundary which is not a boundary of its collocating NP. A similar restriction holds between adverbs and VP's, for (5a) is only acceptable if loudly is construed with awoke, just as in (5b) loudly can only be construed with snored:

(9.5) a  John snored and awoke loudly
       b  John snored loudly and awoke

More telling than either of these points, which might permit of some ingenious explanation, is that those adverbs whose distribution in large measure parallels that of all are in fact exceptional. By far the largest class of adverbs have a distribution similar to that of, for example, quickly:

(9.6) a  *Cricketers quickly write poetry
       b  ??The cricketers are quickly writing poetry
       c  ??The cricketers have quickly written poetry
       d  The cricketers have written poetry quickly

With such adverbs the preferred position is clause-final, the other positions are to some degree or another unacceptable. This is in contrast to the evidence of rarely,
given above. Now it is extremely interesting to note that the adverbs most clearly resembling all can be analysed as containing an underlying quantifier: for example, rarely approximates to on few occasions; often approximates to on many occasions. This leads one to suspect that the distribution of rarely, etc. is to be partially explained by the properties of quantifiers, rather than that the distribution of all is to be explained by the properties of adverbs. Nevertheless we shall see below that this statement needs to be modified.

Yet it naturally follows that we must now return to the hypothesis that universal quantifiers are indeed quantifiers. But there are at least three facts which imply that they are not all to be derived from a source identical in basic structure to that for either simple or compound existential quantifiers. The first of these facts is that which we have already noted, namely that all (at least) can appear in surface positions which are closed to all of the existential quantifiers. This must be a product of a difference in underlying structure, unless we are to be hopelessly ad hoc. Merely accepting that point, since we have failed to find its immediate explanation, let us proceed to the second fact, which is that an NP containing a universal quantifier cannot function as the complement of a surface existential sentence, cf. §7.4. Therefore sentences such as those
in (7) are ungrammatical: ¹

(9.7) a  *There were all cricketers writing poetry
b  *There was each cricketer writing poetry

This suggests that it may be impossible to justify an underlying structure for all which contains as its primary element an existential sentence of the type which is the source of some, even if that sentence is modified by a nonrestrictive relative clause such as is necessary for the derivation of many. The third fact is rather less certain than the previous two, but nevertheless it seems worthy of attention. It is that although it is quite simple to paraphrase (at least in a crude fashion) some, many and the other existentials by substituting a number with appropriate adjectival modification, such a paraphrase of all is not to be found. The most obvious stratagem would be to modify a number by an adjective such as total or complete, since they have the necessary semantic implications, but the resultant 'paraphrases' are ungrammatical:

¹ For this writer there are two factors contributing to the ungrammaticality of (7). But the second factor, which is discussed in both §6.3 and §6.4, may be ignored for the present.
Since the reason for the ungrammaticality of (8) appears to be that a number, unless it has the meaning of "an integer", cannot be modified by an adjective of the same type as complete, it is reasonable to claim that any such source for a universal quantifier will be impossible.

Although we may conclude from the above argument that all is not to be derived from a structure only trivially different from that for, say, some, we are not therefore entitled to claim that all is not quantifier-like. We have already discussed one reason for this in connection with adverbs, and despite the fact that the other reasons are rather obvious it is useful to reiterate them. Firstly, all does occur regularly, indeed most commonly, before the NP with which it collocates. Secondly, the interaction of negation and all is in most, but not all, respects almost identical to that between negators and the compound existentials. Thirdly, all occurs in partitive constructions of the form Q of the N, although again we have to note that after all of may be omitted. Therefore if we conclude that the underlying structure of universal quantifiers is completely different from that of the existential quantifiers, we shall be able to be fairly certain that our conclusion is incorrect, for the common features which indisputably bind all quantifiers together will be seen
as purely haphazard, and their communality will be unexplained by any generalisation about their linguistic structure. On the other hand, we cannot merely claim that the underlying structure of, say, all is the same as that of, say, some, which is approximately the position held by Carden (1968) and Jackendoff (1968), for then the differences are only accounted for by ad hoc transformational rules, see below, especially §9.5.

Before accepting that this is the case, however, it is necessary to note that Dougherty (1970:864-71) has put forward an account which will, apparently, explain the differences between not only existential and universal quantifiers, but also the differences between the various universal quantifiers. Unfortunately for us, Dougherty does not discuss existential quantifiers explicitly, but it seems probable that he would introduce all quantifiers by a phrase structure rule of the form:

\[(9.9) \quad X \longrightarrow (Q) X^n (Adv)\]

where Q is a quantifier, X is a major category (S, NP or VP) and Adv is an adverb. There would then probably be a selectional restriction whereby existential quantifiers are constrained to collocations with some NP rather than S or VP. As can be observed, this will distinguish properly, but only partly, between existentials and universals as far as the ability of the latter to occur in contexts closed to the former is
concerned. We may legitimately question, however, whether it does more than this. Thus it does not give an explanation of why the different types of quantifier react differently to negation, nor why only existential quantifiers are associated with simple existential sentences, underlying or derived. Also we may note in general that Dougherty's suggestion is inconsistent with the type of underlying structure which we have claimed is necessary if we are to hope to explain the semantics and syntax of the existentials. Of course this does not per se deny the validity of Dougherty's analysis, but it does mean that if we accept his account of universal quantifiers (broadly but not exactly equivalent to his category of 'distributive' quantifiers), then we shall be unable to relate them to the existentials without dismissing the arguments which we have put forward in Chapters 7 and 8. Since that seems undesirable, we shall not follow Dougherty's account, but we must note that several of his observations are most interesting and to these we shall occasionally return below.

9.2 Do two negatives make an 'all'?

Anderson (1973c) observes that although the lack of an overt existential when all collocates with the complement NP, cf. (7) above, is a major obstacle in the way of generalising the existential structure to universal quantifiers, there is in fact an overt existential
paraphrase which meets the condition of at least near-synonymy which is necessary. Thus compare the following triple, where, following Anderson's discussion, we use the partitive structure with all in examples; we ignore the degree of acceptability, if any, of (10c):

(9.10) a All of the girls came
b None of the girls didn't come
c There were none of the girls who didn't come

As Anderson points out, this paraphrase relation opens the way to an account of the universal quantifiers in which they are derived from a structure identical to that for the derivation of some, but cf. §10.2, except that there are two negations, one on the higher existential sentence, one on the matrix sentence.

In discussing Anderson's work it will be necessary to make some adjustment to it, since he uses, as has been stated previously, a case grammar - more properly, 'localist' - framework, cf. Anderson (1971b), but this does not appear to lead to any serious misreading of his analysis. We shall also have to accept that the higher existential sentence may be negated and that this negation produces the surface quantifier no/note. Even if we may disagree in detail with Anderson's remarks on this question, cf. again §10.2 where the problem is discussed more extensively, the principle of the operation seems correct and we may thus accept that it is a justifiable
procedure. Finally, it seems useful to employ a simplification of the structures proposed in §7.5 as the underlying representation of some, for this will clarify the discussion without distorting the various analyses. From this it follows that we can propose (12) as the appropriate underlying structure of (11) as a fair compromise between Anderson's theories and our own:

\[(9.11) \text{ Some of the girls came}
\]
\[(9.12) \left[ \_{\text{some EXIST}}\_{\text{some of the girls came}} \right]\]
where we further ignore the problems of the partitive quantifier constructions, cf. §10.3.

It is relatively uncontroversial to suggest that either the higher or the matrix sentence may be negated, that is, that both (13) and (14) are possible underlying structures:

\[(9.13) \left[ \_{\text{neg}}\_{\text{some EXIST}}\_{\text{some of the girls came}} \right]\]
\[(9.14) \left[ \_{\text{some EXIST}}\_{\text{neg}}\_{\text{some of the girls came}} \right]\]

(13) will be the underlying structure for (15), (14) that for (16):

\[(9.15) \text{ None of the girls came}
\]
\[(9.16) \text{ Some of the girls didn't come}
\]

Anderson's basic hypothesis is that it is possible for both negations to occur simultaneously, as in:

\[(9.17) \left[ \_{\text{neg}}\_{\text{some EXIST}}\_{\text{neg}}\_{\text{some of the girls came}} \right]\]
It is clear that (10b) may be derived from (17), and so too may (10c), provided that it is possible to retain the underlying existential sentence at the surface. As it is indisputable that some underlying representation must be provided for (10b) — for similar sentences see Carden (1972) — and since (17) meets all the requirements which such a representation ought to meet, there can be no argument about the validity of the hypothesis so far. Two questions, of course, remain. The first of these is a semantic one: is the meaning relation between (10a) and (10b) sufficiently close to justify the postulation of a transformational relation between them? The answer to this, pace the apparently contrary argument of Jackendoff (1971b:295-96), seems to be fairly certainly that there is. It is worthy of note, however, that there are other types of sentence which have a similar reading, and it is unclear how they might be related. Thus compare (10a) with the following:

(9.18) Without exception the girls came

And we may also note that without exception has a freedom of movement similar to that for all, e.g.:

(9.19) The girls without exception came

In favour of Anderson's proposal we ought to observe that, given the nature of the lexical items involved, it is tempting to derive without exception from a double negative.
The second question is syntactic, or, and perhaps better, formal: is it possible to construct a derivational process which will generate the correct surface structures? In attempting to answer this question an important warning has to be uttered again, which is that since we have 'translated' Anderson's proposals from a 'case' framework into an 'NP VP' one, the remarks below are only valid with respect to the translated result. Thus they ought not to be seen as an immediate criticism of the original proposal, and, furthermore, they only have validity in so far as the translation is valid. But as long as we bear these points in mind the discussion below can be treated seriously on its own terms. Let us consider firstly the derivation from (14) to the surface structure of (16). When existential-lowering has taken place it appears that there will be two possible derived structures:

(9.20) a [S neg(S some of the girls came)]
b [S some of the girls[VP neg came]]

The first alternative would result if existential-lowering occurs after neg-placement, the second if the reverse ordering is correct. Similarly, application of existential-lowering to (13) could give either (20a) or:

(9.21) [S[NP neg some of the girls] came]

If we continue with such alternatives, then we can obtain either of the following from (17):
(9.22) a  \[ \text{s neg[ s neg[ s some of the girls came] ]} \]
        b  \[ \text{s[ np neg some of the girls][ vp neg came} ] ] \]

But it ought to be clear that the availability of alternatives is spurious, for there are at least three arguments against the ordering of existential-lowering before the placement of a lower neg. Firstly, the constraints on the occurrence of (negated) quantifiers in surface VP's which we pointed out in §8.4 are only fully explicable if, as was reasonably assumed, neg-placement is ordered before existential-lowering if, as is the case there, the neg is lower than the quantifier; otherwise global rules will be needed. Secondly, we should surely assume a normal cyclical patterning of rules, and thus if the quantifier is higher than the neg, the neg is lowered into the matrix sentence and then correctly placed in preverbal position before we move on to the next higher sentence, when existential-lowering takes place. The third argument is the most obvious: if existential-lowering is ordered before neg-placement in the derivation of (14), then the surface sentences (15) and (16) will have the same structure at the point immediately after existential-lowering, cf. above. As this would be intolerable, existential-lowering must be ordered after neg-placement in the derivation from (14). Of course, this does not apply in the case of (13),
which will pass through (20a) on the way to (21). The key point is that (20a) is not an intermediate stage for (14).

At first sight the fact that existential-lowering follows neg-placement in cases where the neg is lower than the quantifier appears to be detrimental to Anderson's argument, since he wishes to derive all from a double neg-incorporation into some, i.e., it appears as if he wishes to adopt the following sequence:

(9.23) neg neg some > neg none > all

In order to accomplish this it would appear that (22a) is preferable to (22b), but (22a) involves the ordering which derives (20a) from (14), and therefore it must be rejected. This is not at all the case however; indeed we shall see in a moment that it gains strength from the forced ordering. Following Klima (1964:280) we can claim that the quantifier in (22b) is 'indefinite' and will be realised as any, but cf. §10.2. Klima shows that there must be a neg-incorporation rule, for otherwise the following pair will remain unexplained:

(9.24) a *Any snow didn't fall
     b No snow fell

If we consider the stage immediately before (22b) we find:

(9.25) [\_neg[\_some of the girls neg came]]

This is exactly the environment in which Klima's 'indefinite' and neg-incorporation rules apply, and thus the
next step is not (22b) at all, but rather:

(9.26) $\neg$neg[\neg none of the girls came]

The neg is lowered into the matrix sentence:

(9.27) $\neg$neg none of the girls came

There seems no reason why we should not apply at this point the variation of Klima's incorporation rule which concerns neg + 'indefinite' quantifier sequences. Only two modifications are necessary: the first is that the rule must apply obligatorily in such cases; the second is that the rule will convert no/none to all, rather than any to no/none. We shall then have generated the desired surface structure for (10a). The non-occurrence of an overt existential sentence with all in the complement can be explained by the impossibility of Neg Transportation over two sentence boundaries, which is what would be necessary. The highest neg can only be lowered into the existential sentence if that remains, and thus cannot participate in the double incorporation which is necessary to generate all.

2 There is a good case for claiming that neg-incorporation applies only after both neg's have been lowered and that it then applies from left to right; this makes it easier to derive (10b), for example. However, I shall attempt to abide by what I take to be Anderson's position, and if we have to reject it in favour of the proposal noted here, this will not affect the argument seriously.
The above account explains several of the puzzling features of all as well as giving a clear semantic description of the quantifier, but if it is taken no further then we shall still be unable to account for the occurrences of all in postnominal position. This objection is observed by Anderson (1973b), where he shows that such distributional facts are compatible with his proposal in Anderson (1973c). To see how this is the case we need a slightly more detailed version of (25):

\[(9.28) \quad [s_{\neg}s_{\text{some EXIST}}[s_{\text{some of the girls neg came}}]]\]

Let us now suppose the direction of neg-incorporation is reversible; then we can generate:

\[(9.29) \quad [s_{\neg}s_{\text{some EXIST}}[s_{\text{the girls none came}}]]\]

The EXIST is deleted and neg and some lowered, but in this instance they must be lowered into postnominal position, and thus the surface form (30) is derived:

\[(9.30) \quad \text{The girls all came}\]

Such a hypothesis is in fact able to show that the distribution of all is determined by two factors. Anderson (1973c) explains why all can appear in prenominal position; Anderson (1973b) shows, although we have not gone into this in detail, that all may also appear in every position where a verbal negator is grammatical. This explanation is also able to account for the unacceptability of (31) as opposed to (30), for in (31) the
position of all is neither a product of the usual position for a quantifier nor of the usual position for a negator:

(9.31) *The men kissed the girls all

One point which we have not yet discussed is the ability of all to be directly preceded by an overt negative. Of course this only occurs in subject position, but that is in any case explicable in terms of an extension of the thesis presented in §8.4. Leaving that point aside, we find:

(9.32) Not all the girls came

It is rather difficult to express Anderson's hypothesis (1973c) concerning this phenomenon in an 'NP VP' grammar, but as far as I can tell it would involve a third negator which would not be restricted in scope either to the existential sentence or to the matrix sentence, but might best be associated with a higher performative verb, cf. Ross (1970). It seems fair to object to Anderson's account here in two respects. Firstly, it is not at all certain that his hypothesis can be adapted to give a plausible structure in 'NP VP' terms, for there seems to be just too many negatives present. In order

3 Thus:

(i) *John bought not all the arrows

is worse than (8.92):

??John bought not many arrows
to constrain incorrect hypotheses it may be necessary to adopt ad hoc procedures which assign special scope to, and prevent deletion or absorption of, the third neg element. Secondly, if Anderson's hypothesis is accepted then it will not be possible to generalise the negation process found with compound existentials to the universal quantifiers. This point may well be more important than the first, for that may only be a product of our own inadequacy or the inadequacy of the 'NP VP' theory. But taken together these two factors cast some doubt upon Anderson's proposals.

Another difficult point in regard to Anderson's thesis is the non-occurrence of sentences such as:

(9.33) *The men many kissed the girl

The ungrammaticality of (33) is in fact noted by Anderson (1973b:26), and his explanation is that it is due to the lack of a lower negation in such structures. But it is quite simple to construct a structure with such negation:

(9.34) Not many of the men didn't kiss the girl

Unless we place some ad hoc restriction on the convertibility of the underlying structure of (34) to a movable quantifier associated with many it is hardly possible to account for the ungrammaticality of (33). Note in particular that what we have to explain is the lack of a quantifier parallel to many in the same way as all is
parallel to some; an ad hoc restriction suggests that this lack is chance, whereas it is certainly (in as much as we can be certain of anything) syntactic. But our conclusion here may be too harsh, for as we were able to show in §§8.3 - 8.4, the negation on many is not associated with the higher existential sentence but rather with the quantity-referring coordinate partner. But how far this distinction can be exploited is open to reasonable doubt, see also our further remarks in §9.5.

Even in the face of these objections it is quite fair to state that Anderson's hypothesis has considerable attraction. There are two important justifications for this statement. First of all, his hypothesis enables us to relate the universal and existential quantifiers in a revealing manner, and the underlying structures for the two types of quantifier are by no means so distinct that they will have to be considered as belonging to two quite different grammatical categories. Secondly, if Anderson's claims are accepted then the fact that (some of) the universal quantifiers have a relatively free distribution (relative in comparison to that afforded to the existentials) will be explicable in terms of the dependence of the universals on underlying negatives and the distribution of negatives in surface structure. And that is obviously preferable to the type of solution offered by Garden (1968) or Dougherty (1970), where the mobility of the universal quantifiers is an unexplained
property of those quantifiers. Carden certainly offers no explanation; Dougherty's position is slightly preferable since his phrase structure rules, cf. §9.1, do assign different underlying properties to the universal quantifiers than are assigned to the existentials, but it is not so clear that the differences can be assigned on any principle other than that there are surface structure distribution differences, and therefore, of course, the argument tends to a vicious circle.

9.3 Generating generics

A curious omission in the discussion of all in Anderson (1973b, 1973c), which is shared by Carden (1968), is that almost no reference is made in any of these works to collocations of all with 'indefinite' NP's, i.e., constructions of the type exemplified by:

(9.35) All children like cream

One reason for this reluctance to discuss the behaviour of all in such contexts may well be that there is wide variation between speakers, but since that variation could give us some vital clues about the underlying structure of all, it is necessary to examine such collocations. In order to avoid confusion we shall chiefly be concerned with the type of English spoken by the present writer, in which all is ungrammatical in collocations with an 'indefinite' NP under certain circumstances which we shall specify later. Thus I find the
following sentence ungrammatical, or, at the very best, a stylistic variation approaching 'telegraphese' (in which, we should note, the is regularly dropped) which I would attempt to avoid:

(9.36) ?*All boys have kissed the girls

Even those speakers who have a greater degree of toleration for (36) will agree that (37) is much more acceptable:

(9.37) All the boys have kissed the girls

The difference in acceptability between the two sentences can only be accounted for in terms of absence versus presence of the.

The question we have to ask ourselves is why is it that collocations with all are affected, when this is not the case with other quantifiers such as some? Thus we find:

(9.38) Some boys have kissed the girls

What may be even more puzzling, but a point which we shall leave until §9.5 in the hope that it does not affect the validity of the immediate argument, is that substitution by every or each in (36) improves the acceptability:

(9.39) a Every boy has kissed the girls
    b Each boy has kissed the girls

We can thus observe that although the occurrence of unacceptable forms with all is only found in collocations with 'indefinite' as opposed to 'definite' NP's,
it must be the case that the unacceptability (such as it is) of examples such as (36) is due to the use of all in contrast to some other quantifier. But there is considerable evidence that this latter phrase is incorrectly stated. If we look at 'indefinite' (plural) NP's without any quantifier we find the following pattern:

(9.40) a Boys kiss the girls
b Boys kissed the girls
c Boys are kissing the girls
d Boys have kissed the girls
e Boys have been kissing the girls

Although all the sentences in (40) are grammatical, the normal\textsuperscript{4} interpretation of the latter four is rather different from that for the first in two significant respects. Firstly, only (40a) is truly generic in the sense discussed in §8.1, that is, the sentence is timeless and at the moment of utterance there need not be any objects existing which satisfy the reference of boys. In contrast, in (40c), for example, there must be such objects existing at the moment of utterance, and the same is true of the other sentences, with suitable modification of the time reference. Secondly, the

\textsuperscript{4} It is important to stress this, since it is possible to place reverse interpretations on (40a) and (40b), although probably not in the other cases. See the discussion below on this point.
potential reference of boys in (40a) is to the full potential set of referents (which, of course, may be restricted in size by discourse conventions or even overt grammatical markers); on the other hand, in (40b) - (40e) reference is usually only to a partial set.

There is a simple test for at least the first of these points, for as is pointed out by Anderson (1973a: 481), the presence of an overt existential precludes a generic interpretation; apart from that, there is no reason to suppose that an overt existential sentence should alter the acceptability or interpretation of the sentences in (40), but cf. §7.4. Let us therefore insert an overt existential sentence in each of the examples of (40) and observe the results:

(9.41) a There are boys (who) kiss the girls
    b There were boys (who) kissed the girls
    c There are boys (who are) kissing the girls
    d There are boys (who) have kissed the girls
    e There \{are\} boys \{who have been\} \{have been\} \{\emptyset\} kissing the girls

Examples (41b) - (41e) are clearly of the same status, and each can be related to its partner in (40) without any significant change in meaning. Thus we can indeed
assert that (40b) - (40e) do not have a generic interpretation, at least normally and in the sense of generic used above. Furthermore, the near-synonymy of, for example, (40d) and (41d), and their close semantic relation to a sentence such as:

(9.42) There are some boys have kissed the girls

suggests that (40b) - (40e) and (41b) - (41e) should be derived from underlying structures very similar to (7.94). This would give the most probable explanation of why in these sentences the reference of boys is normally taken to be only to a partial set.

But (41a) provides a contrast to the above, for it has a reading clearly different from the normal reading of (40a): whereas (40a) is, as we have said, truly generic and the reference of boys in that sentence is to a full potential set of referents, (41a) is much closer in meaning and status to the other sentences of (41).

To clarify this claim let us consider another pair of sentences analogous to (40a) and (41a):

(9.43) a Elephants live only in Africa

b There are elephants (which) live only in Africa

(43a) is true if and only if all elephants live in Africa and nowhere else; (43b) is true if there are some elephants which live in Africa and nowhere else. As the truth conditions for (43a) are different from those for
(43b), they undoubtedly have different meanings. Thus in the present time in the present world (43a) is false, (43b) is true. We may therefore conclude that (43a), and hence (40a), is not paraphrasable by an overt existential structure, and therefore it seems improbable that either (43a) or (40a) has an underlying existential source.

It is now possible to sketch out an explanation of the different interpretations of the sentences discussed above. An unquantified plural 'indefinite' NP must have two possible sources: the first source is one where there is an underlying higher existential sentence, the second is one where there is no such sentence; the first of these sources is connected to the normal interpretation of (40b) - (40e), (41) and (43b), the second to (40a) and (43a). These two sources are not equally available, rather they are restricted by the absence or presence of a tensed predicate. This is open to a quite natural explanation. If there is a higher existential sentence then the associated NP is specified, as can be verified by noting the possibility of immediately subsequent anaphoric reference, cf. Anderson (1973b:481), McIntosh (1968) and the discussion of 'individualising' and 'classifying' in §1.5 and 2.3. Now the function of a tense marker is to similarly specify the predicate, that is to say, a tense marker places the action denoted by the predicate at a specific point in time which is
(or was) existent. It is therefore to be expected that a combination of a specified subject with a specified predicate will be grammatical. But if the second source underlies the NP, there will be no specification of that NP and there will be a combination of an unspecified NP with a specified predicate, which, it seems plausible to argue, will be ungrammatical. On the other hand, if the predicate is not tensed then the action will be unspecified, and just as a specified predicate demands a specified subject, so an unspecified predicate will demand an unspecified subject.

As Anderson (1973a) points out, an untensed predicate has only two realisations in English, namely the 'simple' present and the 'simple' past; all predicates containing aspectual markers are tensed. From this it can be seen that boys in (40c) - (40e) can only be derived from an existential source. On the other hand, in (40a) and (40b) the verb may be either tensed or untensed, and therefore boys may be derived from either of the above sources and the sentences are properly ambiguous. In actual practice, however, cf. note 4, the present tense is normally taken to be untensed, the past to be tensed, but why this is so is not our present concern. The ambiguity of the two simple tenses explains why all the sentences of (41) are grammatical: if only an untensed source were available for them, then (41a) and (41b) would be ungrammatical.
The question which we must now consider is what kind of underlying structure is appropriate for a noun, such as *elephants* in (43a), which is unambiguously derived from a structure which does not contain a higher existential sentence. The first possibility is that the relevant part of the underlying structure contains only *elephants*:  

\[
\text{NP} \rightarrow \text{VP} \\
\text{elephants} \rightarrow \text{live in Africa}
\]

However if we accept that then we shall have lost the generalisation, already established, that NP's are derived from an underlying predicate nominal. Of course there is no a priori reason why the generalisation ought to be extended to what are undeniably exceptional NP's, and therefore this is not a crucial factor. But as Anderson (1973a:484) observes, the untensed occurrence of a past tense in a sentence such as:

\[
\text{(9.45) The dodo was a bird}
\]

must be explained in terms of a 'pastness' feature attached to *dodo*. The most obvious move in terms of the

---

5 We shall ignore here the status of *only*, despite the fact that it is crucial to the existence of only one reading for (43a). Its relevance to the present discussion is purely clarificatory.
type of grammar which we are using is to derive elephants (or the dodo) from a predicate nominal, which will allow a [+past] marker to be placed on the copula of the lower S. And so, following Bach's (1968) formulation, discussed in §7.2, the underlying structure of (43a) ought to resemble:

\[(9.46)\]

In the case of (45) apparently only a slight modification of this is necessary:

\[(9.47)\]

Although (46) and (47) provide what are probably the most simple solutions to the facts as we have described them, which implies that they must be considered as serious candidates, further investigation reveals certain inadequacies which entail that they will have to be rejected. Firstly, contrary to the remarks of §7.4, where it was claimed that the complement of an underlying existential predicate had to contain an existential
quantifier-noun, it now seems to be the case that certain quantifier-less 'indefinite' NP's can occur in such a position. Thus we are now able to see that those earlier claims were to some extent an over-reaction to the more traditional claim that any 'indefinite' NP can occur as the complement of an existential sentence. But the result of this modification of our position is that there is now apparently no reason to suppose that a higher existential sentence could not have as its complement the NP of (46) containing ones. Yet this is in contradiction of the facts, and therefore it looks as if there will have to be an ad hoc blocking of such a structure.

The same problem does not, of course, arise in (47), for the potential complement of an existential sentence is then a 'definite' NP, and there is clearly no need to modify our original position in that regard. But the 'definiteness' of the one in (47) spotlights the second inadequacy, for in what sense is it correct, even allowing for the vagueness of the terms, to say that elephants in (43a) is 'indefinite' and that the dodo in (45) is 'definite'? Surely that description is only correct in terms of the surface absence/presence of the? Even without going too deeply into the analysis of instances of generic the, as exemplified in (45), it does appear to be correct to state that its function is semantically distinct from that of nongeneric the, most
especially in that it does not indicate reference to some object known to the speaker and presumed by him to be known to the hearer. Yet this is exactly the implication of (47), as can be confirmed by comparing that structure with the underlying structure for nongeneric 'definite' NP's proposed by Bach (1968), see again §7.2. Furthermore, the radical distinction between (46) and (47) which we are now able to pinpoint can be seen as intending to account for a rather trivial surface difference, for compare with (45):

(9.48) A dodo was a bird
(9.49) Dodos were birds

Whatever the differences between the three sentences, and we might suggest tentatively that the choice of type of NP is a reflection of a particular emphasis or point of view, it is quite certain that (48) and (49) are not to be distinguished from (45) by the semantic features associated with nongeneric instances of the.

A more adequate structure than so far proposed must, therefore, explain in a non-ad hoc manner the ungrammaticality of an underlying existential in (43a) and also the presence in (45) of a the which does not indicate what we may telegraphically describe as 'given reference'. There is yet a third point which it must clarify and which we have not fully discussed so far: this is that in the examples under discussion reference is properly to a class (of elephants, dodos, etc.).
This of course is precisely what a grammarian such as Kruisinga (1932a:238, 315) implies when he refers to a 'classifying' use of a and the, see again §1.5. Obviously the structures proposed above give no hint that this is the type of reference present in the sentences they purport to analyse.

In attempting to construct an underlying representation which will fulfil these three conditions of adequacy and also retain the generalisation that nouns are derived from predicate nominals, we shall have to, for the sake of simplicity in argument, make certain assumptions, or at best ignore certain surface factors; this is because the necessary steps can only be justified after we have hypothesised a plausible structure and shown that this structure itself explains the factors that we have apparently ignored. The assumptions which we shall make are that (45) and (49), for example, are derived from virtually identical underlying structures and that (48) is derived from some rather different structure. The latter point especially will require some patience on the part of the reader, since we shall not discuss it further in this chapter; it is to be hoped that that patience will eventually be adequately rewarded in §11.4. One other point is also worth mentioning: in the discussion immediately below we shall suggest that there is an open choice between two transformations which are in any case optional. It is by no
means certain that the resultant nonequivalent surface structures (syntactically speaking) are semantically equivalent. This apparently implies that we accept the possibility that transformations change meaning and that underlying representations do not uniquely determine semantic relations, which is in contrast to the position held throughout the other parts of this work. But this is not necessarily so, for the suggestion of meaning-changing transformations is, at least here, better seen as the result of two inadequacies on the part of the author: (i) an inability to determine exactly the semantic relation between two surface structures; (ii) an inability to motivate slightly different underlying structures on the admittedly inadequately perceived semantic differences that do exist. If these two contingent – not necessary – facts were overcome, then no meaning-changing transformations would be necessary.

The simplest alternative to the type of structures exemplified by (46) and (47) will be one that replaces the rather suspicious occurrences of *ones* and *the one* by some explicit marker of the type of reference, i.e., class reference, with which we are concerned. The kind of structure for which we are searching for the class-referring quantified NP's is therefore likely to
approximate to one of the following two sketches:

(9.50) \[ \text{NP}\ A \text{SET}[\text{SA SET BE N}] \]

(9.51) \[ \text{NP}\ \text{THE SET}[\text{SA THE SET BE N}] \]

However even a very quick glance at the semantics of (50) will tell us that it is incorrect, for it would imply that the underlying structure of, say, (49) would be:

(9.52) \[ \text{S}[\text{NP A SET[SA SET WAS dodos]}][\text{VP BE birds}] \]

and (52) ought to generate at least the following sentence:

(9.53) A set of dodos were birds

Whatever the meaning of (53) may be, it is quite different from that of (49), and therefore it ought to be rejected. On the other hand, (51) seems a much more plausible candidate, as can be seen by comparing (54) with (49):

(9.54) The set of dodos were birds

---

6 There is no conscious significance in the choice of the word set rather than class. It is very doubtful that our knowledge of semantics is sufficient to permit us to make such a fine choice at this stage. The only conscious criterion is that set has a well-known mathematical usage to which it may be convenient to refer. However this does not imply that we are using set in its proper mathematical sense.
The two sentences are not grossly dissimilar in meaning, despite the presence of the in (54). But observe that this *the* has an interesting source: it is used because the set referred to is unique by definition, not because the reference is 'given'. Thus an apt paraphrase of (54) might be:

(9.55) The set which contained all dodos and only dodos had the property of 'bird-ness'.

It is indisputable that only one set can satisfy the description given in the relative clause. If we now compare (49) with (55) we can see that the latter is only making explicit a point which is implicitly contained in the former. How we ought to derive instances of this *the*-type is in detail mysterious, and all that can sensibly be said is that the *the* in (51), (54) and (55) is principally the marker of a uniquely defined set. If we may allow such a modest statement to suffice then it seems reasonable to continue with our argument, but see further, Chapter 12.

Since we have now, with certain reservations, been able to sketch out a possible candidate for the underlying structure of (45) and (49), we ought now to examine it in rather more detail in order to see if the correct surface structures can be derived from it. The underlying structure must be on the lines of (56) below, although certain features which are not wholly relevant,
such as tense marking, which occurs in the predicate nominal, cf. Anderson (1973a:485-88), are ignored:

\[(9.56)\]

\[
\begin{array}{c}
S \\
\ \ NP \ S \ VP \\
\ \ \ NP \ S \ BE \ birds \\
\ \ \ \ \ NP \ THE\ SET \\
\ \ \ \ \ \ \ VP \ THE\ SET \\
\ \ \ \ \ \ \ \ \ \ \ \ \ \ VP \ BE \ dodos
\end{array}
\]

Obviously it is possible to derive (54) from such a source, but the question is whether or not it is possible to derive (45) and (49) from the same structure. What we must really decide, in other words, is whether or not it is possible to justify a transformational process from (54) to either of the other sentences under discussion. To obtain (49) it appears that we would have to delete THE SET; such deletion is always feasible, but we have to bear in mind the severe warnings uttered by Fiengo and Lasnik (1972). Nevertheless, two points suggest that the deletion is plausible. Firstly, we have already noted that THE SET is redundant in that it only makes explicit an otherwise implicit fact. Secondly, the structure resulting from deletion is controlled by another factor, namely the absence of a tensed predicate in the matrix of the highest sentence. Admittedly, it is true that many sentences are ambiguous, having both a generic and a nongeneric interpreta-
tion, but it is precisely the kind of deletion under discussion which is likely to create the ambiguity. Let us therefore accept that deletion of THE SET in the structure immediately underlying (54) - and below the surface insertion of of - is the correct source of (49). That deletion is of course optional.

Although there are some further remarks to be made on the relation between (49) and (54), and so on the transformation used to relate them, let us first turn our attention to the attempt to find a derivation for (45), so that the triple may be considered as a group. One possibility here would be to delete set and singularise dodos, but the only motivation for this seems to be the desire to generate the right surface structure. We must therefore look elsewhere. If we consider (56) once more, we are reminded that it assigns to the subject NP a structure similar to that for an NP containing a restrictive adjective. Thus at some stage of derivation the structure of:

(9.57) The poor people are always with us

corresponds to:

(9.58)
We then find adjectivalisation of the restrictive clause and after that it is possible, under ill-understood conditions, to obtain:

\[(9.59)\quad \text{The poor are always with us}\]

Corresponding to this it seems possible that \((56)\) could give an intermediate structure corresponding to:

\[(9.60)\quad \text{The dodo set was a bird}\]

Then, as in \((59)\), \textit{set} is deleted, to give \((45)\). The major point which we have omitted in this argument is the question of number agreement, and this has two facets. Firstly, and more simply, the number of the VP is determined completely by the number of the subject NP; this is why we find the \textit{was a bird/were birds} variation. Secondly, why is it that \textit{dodo} in \((45)\) is singular? This is surely to be explained by its adjectival quality: the lower NP \textit{BE dodos is in fact an adjectival modifier of the singular noun \textit{set}, and it is that noun which controls the concord, for it is still represented at the surface by \textit{the}, cf. \((49)\), and in any case its deletion must be very late indeed. Nevertheless it has to be conceded that this triple of sentences displays characteristics of number concord which are only poorly understood, cf. Morgan (1972) for a discussion of further problems raised by concord rules.

It seems highly unlikely that anyone, and this is especially true of the present writer, would wish to claim that the above derivations are wholly adequate;
indeed I would not claim that they do anymore than take a couple of paces nearer the kind of solution which would be fully acceptable. But they do work after a fashion and they also reflect certain semantic intuitions respecting the triple of sentences under discussion. Thus, it is certainly the case that (54) is the most explicit of the sentences (some speakers may find it over-explicit and thus clumsy); this accords with the fact that it preserves the maximum of underlying structure, including, as was shown in §§7.4 - 7.5, a marker of underlying subordination. In (49) there is no explicit statement that reference is in terms of a uniquely defined set, and because of this sentences like it are often interpreted as statements about a tendency, although naturally this does not happen in all-or-nothing cases like (49). The interpretation that the sentence is a remark about a set having a tendency to have a property is in accord with the deletion mechanism which we have proposed. Turning now to (45), it is more like (54) than (49), for it clearly is a statement about a certain set having a certain property - there is no question of it being a tendency which is being described. This too is explained by the derivation we have suggested, for that makes it clear that the focus of attention is kept on set, even although that noun is itself deleted. Furthermore, we can explain why sentences with a 'definite' plural NP, such as (61), are not generic, but
rather descriptive: 7

(9.61) The dodos were birds
The reason is that if such a sentence were derived from
the generic structure (56), then the highest NP would be
the sets. But that NP is uniquely defined if it is
generic, and therefore it cannot be other than singular,
just as proper nouns cannot be other than singular.
Thus, if our hypothesis is accepted, a truly generic
interpretation of (61) is impossible, because of the
contradictory demands on the underlying subject NP.

9.4 The emphasis on 'all'

However adequate the above discussion has been, it
is only natural that we should now ask what relevance it
has for the analysis of all. The answer to this can be
found by comparing the sentences in (40) with those
below:

(9.62) a All boys kiss the girls
    b ??All boys kissed the girls
    c ?*All boys are kissing the girls
    d ?*All boys have kissed the girls
    e ?*All boys have been kissing the girls
Leaving aside for the moment the dialect variation which
we mentioned briefly at the beginning of the previous
section, we may observe that at least in some dialects

7 But see here §4.1.
the insertion of all is fully grammatical only when the normal interpretation of the sentence in question is generic; conversely, when a generic interpretation is impossible insertion of all is either very bad or impossible. The most obvious interpretation of these facts is that all may only collocate with an 'indefinite' NP if that NP is generic and that all has no influence on the grammaticality of a sentence other than as predicted by that condition.

Before we attempt to discover whether there is a possible analysis of all which might account for that condition, let us first examine an alternative hypothesis which appears to explain the facts exemplified by (62). Anderson (1973a:481) observes that an overt existential sentence precludes the possibility of a generic interpretation, and we saw in §9.3 that this is true even if the existential sentence is transformationally deleted. Anderson then extends this argument by suggesting that the generic interpretation of a sentence such as:

(9.63) All rhinoceroses eat small snakes

is possible just because the existence of a set (of rhinoceroses) which does not eat small snakes is denied. This analysis of (63) follows from the arguments presented in Anderson (1973c) which were discussed in §9.2, and the position is compatible with our own claim that generic interpretation is only possible if no specific
existence is predicated. Anderson (1973a) does not state whether his hypothesis will account for the badness of, for example, (62c), but clearly it is desirable that it should. Yet the explanation of the generic interpretation of (63) as due to the presence of a double negative appears to break down in such cases. Thus, although:

(9.64) No rhinoceros doesn't eat small snakes has at least a pseudo-generic interpretation, similar sequences where a generic interpretation is not possible are as grammatical as could be expected granted the presence of an overt double negative, which usually requires special intonation:

(9.65) a No rhinoceros is not eating small snakes
b No rhinoceros has not eaten small snakes
c No rhinoceros has not been eating small snakes

Notice that the possibility of adding words or phrases such as yet and so far confirms the lack of a true generic interpretation. In the light of such examples it is difficult to see how Anderson's hypothesis can be accepted.

Let us therefore return to the first interpretation of the distribution exemplified in (62). If we ask ourselves what kind of item could be in specific structures
without altering the grammatical status of those structures, for in effect this is what happens in the case of all, the most likely answer is that such an item will be the product of emphasis. We have already had cause to remark, in §§3.4 and 4.4, that all is in some respects a marker of emphasis which is added to a generic plural NP, and therefore this answer fits in with the semantic facts that we have already discovered. It is probably the case, however, that the difference between a sentence with all and one without all, as, for example, between (63) and:

(9.66) Rhinoceroses eat small snakes

is slightly greater than would be predicted by mere emphasis, and therefore the structure we eventually propose must be able to explain this. And this is only one point where we shall have to tread carefully; there are many others. Perhaps the simplest, and yet the most important, is the fact that in both (63) and (66) emphatic stress can be placed on any item in the relevant surface NP: thus consider the following examples:

(9.67) a Rhinoceroses eat small snakes
      b All rhinoceroses eat small snakes
      c All rhinoceroses eat small snakes

Then there are also other ways in which emphasis is marked, as for example by Clefting, and it seems probable that Pseudo-cleft and overt existential sentences mark emphasis by retaining a nearer-to-base form at the surface, cf. respectively Akmajian (1970) and §§7.4 -
7.5, above. In this context consider a pseudo-cleft sentence such as:

(9.68) What I spotted in the cellar was a rat

Despite the fact that there is a nonemphatic version:

(9.69) I spotted a rat in the cellar

there are emphatic variants of both the pseudo-cleft sentence and the derived form (69):

(9.70) a What I spotted in the cellar was

a rát

b I spotted a rát in the cellar

The four variations in (68) - (70) can only be accounted for if we assume that emphasis is introduced into English in at least two ways:8 (i) by heavily stressing the item on which emphasis is to be focussed; (ii) by preserving some deeper structure which is normally subject to transformational change but which if it remains will highlight the item on which emphasis is to be focussed.

This being the case, there can be no objection in

8 Two further examples of marking emphasis are seen in clefted sentences, where a transformation induces a structure which highlights the item in question, and after which heavy stress can still be placed on that item. The fullest discussion of emphatic constructions such as these is in Jackendoff (1972b:229-78), but for another approach and further references see Lakoff (1971c:260-63).
principle to claiming that all is in one sense a marker of emphasis, despite the fact that in (67) all itself is subject to emphatic stress.

We demonstrated in the previous section that sentences like (66) are normally interpreted as describing a tendency on the part of the referents of the subject NP to display a given behaviour pattern, i.e., not all rhinoceroses need eat small snakes for (66) to be generally considered as valid. We have so far observed only two ways in which the speaker may commit himself to the assertion that every potential member of the set of referents has the property stated in the predicate: these are the constructions the + singular noun and the set of + plural noun. But the latter usage is commonly regarded as clumsy and the former has two disadvantages, for it is ambiguous - we might, for example, be talking of a specific rhinoceros - and it is often regarded as stylistically arch. We should now note that the emphatic stress variant (67) does not perform this task, for it only highlights the fact that it is rhinoceroses which are being talked about rather than some other group of carnivores. In this situation it is perhaps not unexpected that all should be called in to provide the necessary commitment. Further support for such a suggestion is found in the fact that all is ungrammatical in collocations with the emphatic variants so far discussed:
It is insufficient to explain the ungrammaticality of these sentences in terms of an unacceptable collocation with a singular noun, both in view of the derivations which we have proposed for the equivalent sentences without all and of examples such as:

(9.72) All the cat family has/have claws

Although we have very little guidance about how all might satisfactorily be introduced into underlying structure, it does appear that a good way of doing so would be to introduce it as some adjectival modifier of set. One initial justification for this is the close relationship between, for example, all the world and the whole world. It seems probable that the modifier is to be considered as an addition, and thus perhaps as a non-restrictive clause. We may therefore propose the following tentative underlying structure for (63), in which the adjective is taken to be total (although there seem to be other equally good candidates, for instance complete):
That structure has one obvious advantage, for it will be possible to negate the coordinate partner and thus derive a negated form of all:

(9.74) Not all rhinoceroses eat small snakes

The possibility of negation is confirmed by the fact that the structure of (73) is, except in one respect, identical to that proposed for compound existentials occurring in postdeterminer position, cf. (8.42) in §8.3, the important distinction being that the lexical items NUMBER and large (for many) are replaced by SET and total. There is one good consequence from this replacement, for total, unlike large, is not subject to comparison, because it is a maximiser, cf. Quirk et al (1972:446-48). This will explain why there are no comparative and superlative forms of all, in contrast to the compound existentials.

Despite these two advantages belonging to (73), we run into a rather serious problem in proposing that it
exemplifies the underlying structure of all. This is that if (73) is identical in node relationships to (8.42), as it is, why then does all not appear in post-determiner position? To make this clearer we need only consider the surface structures which result if lexicalisation to a surface quantifier does not take place. We shall find the parallel structures (8.41) - repeated here for convenience - from (8.42) and (75) from (73):

(8.41) The large number of boys kiss girls
(9.75) The total set of rhinoceroses eat small snakes

Now the lexicalisation process for many in §8.3 related (8.41) to:

(8.40) The many boys kiss girls

Therefore should it not be the case that (75) is similarly related to:

(9.76) *The all rhinoceroses eat small snakes

One possible explanation for the ungrammaticality of (76) concerns the fact that the two transformations which have already been shown to raise rhinoceroses into a position analogous to that which it holds in (76) either delete the (along with set) or singularise rhinoceroses. If either one or other of these transformations is compulsory when raising takes place, then (76) will be ungrammatical because neither occurs there. We have already pointed out that a plural NP with the is not truly generic, cf. (59), and that would explain the compulsion. In (76) we would have a contradiction:
since \textit{all} appears the sentence ought to be generic; since the \ldots\textit{rhinoceroses} is a surface NP the sentence ought to be nongeneric. Thus the sentence is ungrammatical.

Then the generation of (63) might be achieved by deletion of the, but although that is just possible, it has very little appeal, since it has an \textit{ad hoc} appearance. If this is the only way in which (63) and (75) can be related, ought we not to avoid relating them? That position may yet have to be adopted, but given the semantic relation which holds between the two sentences we must be reluctant to take that step. Since there is an alternative solution available let us consider it. It is to claim that the lexicalisation transformation to generate \textit{all} involves a collapsing of the \textit{total set} rather than \textit{total set without the}. Indisputably the correct surface structures will be generated, but is there any justification for such a rule, which will otherwise be \textit{ad hoc}, for the lexicalisation rules for the existential quantifiers never involve the? A first point is that it is essential to capture the fact that \textit{all} is normally generic when in collocation with a plural NP without 'definite article'. So far we have not been able to do this, but if the is part of the underlying representation of \textit{all} then we shall be able to do so. The reasoning behind this statement is that it is the sequence \textit{the set} which marks out the generic
nature of the structures concerned. But in a sentence such as (63) the only sign of genericness is *all*, which is in contrast to, for example, (45). This would be explained if *all* has transformationally incorporated the set.

Secondly, it is clear that the *the* in generic contexts is unusual, even if the precise reason for this is uncertain. We have already noted some semantic reasons for this assertion, but there are also other facts which support it. Nongeneric *the* can be heavily stressed for emphasis, as in:

(9.77) The politician you can trust is Gerald Ford

This is not the case with generic *the*:

(9.78) *The elephant which lives in Africa has long ears*

We have already observed, in §4.4, that it is quite possible that *the* ought to be derived from more than one source, and here we may have further evidence for this; whatever the precise solution may be, cf. Chapter 12, it does seem to be true that generic *the* is distinct from nongeneric *the*, although the degree of distinction may be in dispute. Thus the fact that nongeneric *the* does not form part of the source of existential quantifiers can hardly be claimed to be crucial evidence about the role of generic *the* in the derivation of *all*. The final point is very weak and therefore we can pass over it very
quickly. It is that we have noted that in some dialects and styles sentences such as (62d), which are nongeneric, are acceptable despite the presence of all. This may be accounted for by a partial falling together of all + N and all + the + N, but that suggestion, which is consistent with the facts of, for example, Dutch and German, is surely only reasonable if surface all + N is itself derived from a lexicalisation of a structure involving the. We might then be able to account for the introduction of such a phenomenon by means of analogical extension, but admittedly that is highly speculative.

It is therefore reasonable to conclude that there is some justification for supposing that all is the result of lexicalisation of the total set, and indeed we shall henceforth presume that this is the case; nevertheless two problems remain. One is that the above hypothesis is unable to explain the variability of position found with all; the other is that, although it permits negation of all, certain facts about that negation are unaccounted for. We shall examine the latter of these problems first, since it may provide a solution to the former. The interaction of negative elements with all is similar to the interaction between those elements and the existential quantifiers, cf. Carden (1968, 1970b, 1970c). The two cases are not identical, as was pointed out in §5.4, but they do resemble one another sufficiently for it to be desirable that our
hypothesis show that this is a consequence of similarity of underlying structure. This suggests that all ought to be derived from some kind of higher sentence. Another argument in favour of that suggestion is that it is without doubt that all displays most of the characteristics of a quantifier, cf. §9.1, and since all the other quantifiers we have discussed so far are derived from higher sentences, this is probably also the case with all. Even many is in all cases except where it is in postdeterminer position derived from a higher sentence.

If a higher sentence for all is the correct answer, then our arguments suggest that the most probable form of that sentence will be:

(9.79) The set BE total

But what kind of evidence is there that emphasis should ever be represented by a higher sentence? We can give indirect evidence at least, by means of the following argument. If Neg Transportation is agreed to be a (minor) rule of English grammar - which must be doubtful, cf. §5.4, then it will relate the pair of sentences below:

(9.80) a Bill expects that not all the boys will win a prize
b Bill doesn't expect that all the boys will win a prize

The explanation of this which is given by Carden (1968:
8-9) is very dubious, as we have commented previously, see too Jackendoff (1971b:287-96), but let us accept for the moment that Neg Transportation docs apply here; if that is true all must be derived from a higher sentence. Now consider the following pairs:

(9.81) a Bill expects that John won't win a prize
       b Bill doesn't expect that John will win a prize

(9.82) a Bill expects that John won't win a prize
       b Bill doesn't expect that John will win a prize

If the sentences in (80) are related by Neg Transporta-
tion, then the pairs immediately above can also be related by that same transformation, since they show the same semantic relation (which is not synonymy). But neither of the sentences in (81) has any reading identical to a reading of either of the sentences in (82), for in the former Bill does expect that someone will win a prize, in the latter he has no such expectation. This can be seen to be true by adding a further clause to, say, (82b):

(9.83) Bill doesn't expect that John will win a prize after all, because a self-appointed committe has decided, in the interests of democracy, that all prizes will be abolished at once
Such an explanatory clause cannot be added to (81b). Now the possibility of Neg Transportation together with the meaning difference between (81) and (82) can both be explained by a theory that emphasis on John is a trace of an underlying higher sentence. Without worrying about the details of the structure, we can relate the pair in (81) to (84) and the pair in (82) to (85):

(9.84) Bill expects neg be John who will
       win a prize

(9.85) Bill expects John neg win a prize

Even though there is absolutely no necessity to conclude from the above that Neg Transportation is a valid rule, we may yet permit ourselves to be convinced that surface emphasis is often the trace of an underlying higher sentence. Now it is interesting to note that the type of conclusion which we have reached concerning emphatic stress applies equally to all. Therefore it seems probable that all could profitably be derived from a higher sentence, given the consistency of the evidence we have already examined. Indeed, we shall see below that (81) provides even stronger support for this hypothesis, which in any case is previously supported by the parallels that do exist between all and the existential quantifiers. An alternative explanation of the contrast between (81) and (82) would rely on the theory of presuppositions. Thus Jackendoff (1972b) would explain the stress on John in (81) as due to the existence of a variable in the same position in the presupposition of,
say, (81a) as in the example itself. But since that analysis cannot be extended to the clearly similar case of all, it does not seem as useful as the suggestion above.

Since there is no reason why we should not accept (79) as the higher sentence source for all, the most likely underlying structure of (63) now appears to be:

\[(9.86)\]

Before quantifier-lowering (not existential-lowering since there is no EXIST in the higher sentence, and we may therefore accept different conditions on the lowering, as we shall see) and lexicalisation take place, but after all other relevant transformations, we shall find:
If there is no lexicalisation then (75) will be generated. Lexicalisation, however, converts the higher sentence into *all* and the lower occurrence of THE SET converts to *all* to permit quantifier-lowering, but see below, thus generating (63). We can thus claim to have provided a plausible underlying structure, in the shape of (86), for (63) and any other instance of *all* preceding an 'indefinite' NP. Furthermore, we have already noted that the higher sentence can be negated, and such will be the case in the underlying structure of, say, (74).

However it is not possible to claim that (86) is the correct underlying structure, for we still cannot explain why *all* has variable position; it is not sufficiently distinct from the underlying structure of, say, *many*, to do that. Let us therefore attempt a solution which will combine in some way the insights which (73) and (86) have attempted separately to explain, but unsuccessfully. We shall need to derive *all* from a higher sentence, as in the latter structure, but the NP
with which it collocates ought not to be embedded in all, following to some extent the former structure. To satisfy these requirements we need something like:

(9.88)

Let us now suppose that the relevant transformational rules are as follows and apply in this order: (i) raising of the predicate nominal; (ii) deletion of THE SET as described in §9.3 for the generation of (49); (iii) quantifier lexicalisation. In fact (ii) probably needs modified so that a quantifier node remains. This is to ensure that all is lowered into the correct position and it avoids problems of irrecoverability, briefly mentioned above. Thus immediately before lowering we find:

(9.89)
The interesting feature about (89) is that it clearly resembles the structure for (90) at the same stage:

(9.90) Rhinoceroses don't eat small snakes

(9.91)

The similarity of structure between all and neg which is thus hypothesised at this point suggests that it is far from unreasonable to presume that all might be lowered in two distinct ways. Firstly it might be lowered into prenominal position, thus onto the quantifier node created by the deletion of THE SET; secondly it might be lowered into the positions into which its structural twin neg may be lowered. If we distinguish between this transformation and neg-placement only by stating that the former does not require do-support, cf. Klima (1964: 256-57), whilst the latter does, we are then able to account for the variability of all-placement.

To justify the above claim we may note that in the pairs below all and not occur in exactly the same positions except if do-support has taken place; in those cases all occupies the position in which, it could be claimed, not would occur if there were no rule of do-support. In some of the pairs below all collocates with
a 'definite' NP; this is in order to give examples with aspectual markers present and it does not invalidate our claim:

(9.92) a Boys all kiss girls
    b Boys do not kiss girls

(9.93) a The boys were all kissing the girls
    b The boys were not kissing the girls

(9.94) a The boys have all kissed the girls
    b The boys have not kissed the girls

(9.95) a The boys have all been kissing the girls
    b The boys have not been kissing the girls

If all appears in a position other than one predicted above, then it is at best only marginally acceptable:

(9.96) a ??The boys all were kissing the girls
    b ??The boys all have kissed the girls
    c *The boys have been all kissing the girls

The fact that (96c) is by far the worst of the above triple is explicable in the following way: in (96a) and (96b) all occupies the position held by not before it is correctly ordered in the VP, and therefore they are simply cases where all does not follow the tense-bearer, compare (92a); but in (96c) the position of all, were it grammatical, would have to be the result of a placement rule applicable only to it, and this is rather worse
than its failure to follow a rule only fully applicable to not.

The above proposal is also able to account for an apparent asymmetry in the distribution of all, namely that it does not appear postnominally when collocating with a surface NP which is not a subject; thus, assuming that all collocates with small snakes, (97) is ungrammatical:

(9.97) *Rhinoceroses eat small snakes all.

In grammars where the position of all is handled by some independent quantifier-movement transformation, the ungrammaticality of (97) must be handled in an ad hoc fashion, cf. Carden (1968:21), Dougherty (1970:877-79), so that it does not apply to surface structure objects. But we are claiming that the surface position of all is in part a function of neg-placement rules. Now in §8.4 we were able to establish that neg-placement rules were subject to at least two constraints: firstly, that neg might not be moved leftwards over a verb; secondly, that neg might not be moved rightwards over a verb. Obviously these can be combined into a single constraint:

(9.98) Neg-placement rules may not move a neg over a main verb node.

Furthermore, there appears to be a generalisation from the distribution of not that neg-placement rules, i.e., movement rules other than lowering rules, may only move a neg into a VP. Given these restrictions on neg-
placement rules and our theory that all, after lowering, is moved by the same mechanisms as move neg, then it is quite simple to explain the ungrammaticality of (97). After all is lowered into the quantifier node we shall find a structure which is equivalent to the structure of:

(9.99) Rhinoceroses eat all small snakes

All cannot then be moved to the left since that would involve crossing a main verb node, nor can it be moved to the right since there is no VP to the right (and in the same sentence) into which it might be moved. Further, (99) cannot be synonymous with (63) since an all originally modifying rhinoceroses could not be moved into the position occupied in (99) because of the extension of constraint (98). The same fact excludes a derivation of (97) from (63). We can therefore explain the grammatical positions of all basically in terms of the neg-placement rules and the constraints upon such rules. The relation between all and its collocating NP in (92a) is not the same as the relation between all and its collocating NP in (97), despite the same surface relation of order which appears, and therefore it is not remarkable that the latter is ungrammatical while the former is grammatical. And of course we may finally add that we have been able to give an explanation here which is fully compatible with the hypothesis concerning the lowering of negated quantifiers into a VP and the lowering of non-negated quantifiers into a negated VP, as proposed in §8.4.
Although it would be possible to discuss the distribution of all more fully, and consequently refine the transformational process outlined above, our discussion of this quantifier has continued for some considerable time, and therefore it might be best if we were to look at only one more aspect of all before moving on to discuss the other universal quantifiers. This aspect is the interaction between all and negators. In fact the underlying structure proposed for all, namely that exemplified in (88), is sufficiently similar to that proposed for many to enable us to handle most interactions between all and a negator in the same way as we have handled the interactions between negators and compound existentials. The only cases we need discuss are those where the interaction between all and a negator proves to be different. Preeminent amongst these is the fact that for many speakers, cf. Carden (1970c), (100) has a reading - and it may be the only reading - where the neg must originally be higher than all:

(9.100) All rhinoceroses don't eat small snakes

In other words, (100) has a reading identical to the only reading of either (74) or (101), which are the predicted derivations from the underlying structures which we have sketched out, (74) being repeated here for convenience:

(9.74) Not all rhinoceroses eat small snakes
(9.101) Rhinoceroses don't all eat small snakes
As we were able to observe in §8.4, similar ambiguity does not arise if we replace *all* by a compound existential. In Carden's (1970c) terms, (102) has only a neg-V reading:

(9.102) Many rhinoceroses don't eat small snakes

The neg-Q reading of (100) is inexplicable in terms of quantifier-lowering alone, for we would expect the *neg* and *all* elements to reflect in their surface structure ordering the underlying command relation; this is achieved in both (74) and (101). (100) is surprising for two reasons: firstly, it splits up *not* and *all*, which might reasonably be expected to stay together; secondly, if surface precedence does not reflect underlying command relations then we might expect that another part of Lakoff's global constraint (1971c:244-46) could be used to predict that for the neg-Q reading to be obtained heavy stress ought to fall on *not*. But as was pointed out in §5.4, if *all* has heavy stress then only a neg-Q reading is possible for (100). Further, for some speakers this may be the only way to obtain such a reading; certainly it is the case that if *not* is heavily stressed a neg-V reading is obtained. But this is a reversal of Lakoff's constraint.

Luckily there is some rather good evidence to show that the puzzling characteristics of (100) only remain puzzling if we insist on regarding *all* as simply another
quantifier. If we approach the problem from another
direction we shall encounter sentences such as (103),
compare here the sentences in (81):

\[(9.103) \text{ John didn't buy the new book on Faroese phonology}\]

This has exactly the same type of interpretation as does
(100) when in that sentence there is heavy stress on
all; the interpretation is that the neg was originally
on the stressed item. This becomes quite clear if we
apply Clefting to (103):

\[(9.104) \text{ It wasn't John that bought the new}\]
\[\text{book on Faroese phonology}\]

If (88) provides the basic underlying representation for
(100), with the addition of a higher neg, then (105)
ought to be generable too:

\[(9.105) \text{ The set of rhinoceroses which eat}\]
\[\text{small snakes is not total}\]

This is presumably related by Clefting to:

\[(9.106) \text{ It is not the total set of rhino-}\]
\[\text{ceroses which eat small snakes}\]

If quantifier lexicalisation has taken place, then (107)
will be generated:

\[(9.107) \text{ It is not all rhinoceroses which}\]
\[\text{eat small snakes}\]

As far as our argument is concerned it matters very
little whether or not (104) and (107) are any 'deeper'
than (100) and (103); rather, their main interest is in
showing that the latter pair of structures can plausibly be expected to be derived from similar types of structure. This, of course, is not surprising, since we have claimed that each in its own way is the result of emphasis. Now, as the evidence of (81) showed, there is good reason to believe that in the underlying structure of (103) neg is in a higher sentence commanding John. But when lowering of neg takes place it has to be moved into the VP, since neg cannot occur within an NP. The surface position of not could now be the result of a wide choice of underlying structures, i.e., it could originally have negated, for example, John, buy, new or phonology; therefore heavily stressing not would do nothing to resolve this multiple ambiguity, unless it were constrained in some manner. In fact it does seem to be constrained in the most natural manner, namely not can only be heavily stressed if the negation was originally on the verb; in all other cases it is the item which was originally negated which is stressed. The only difference between instances involving items like John and those involving all is that in the latter case neg need not be moved into the VP; it can, as in (74), remain immediately before all. But if not is moved into the VP, the heavy stressing rule works exactly as if all were a marker of emphasis:

(9.108) a All dogs don't chase cats
b Dogs don't chase all cats
c Dogs don't chase cats
In every case the interpretation is that the neg was originally on the stressed element. This explanation, if it is correct, can best be stated in terms of a global rule, cf. Lakoff (1970a), but for a competing solution see Jackendoff (1972b:352ff.). In view of the general tenor of our argument this is unfortunate, but it may be that global rules can be restricted to influence on stress patterns; thus consider the similar situation with regard to 'echo questions', cf. Katz and Postal (1964:111-12). Global rules would thus be more strictly constrained and so better defined than as in Lakoff (1970a).

We may conclude, however, that all ... not sequences can have for many speakers a neg-Q reading and that the likelihood of such a reading is increased when there is heavy stress on all is not to be explained, as both Garden (1970c) and Anderson (1973c:Appendix I) appear to believe, solely in terms of a higher quantifier analysis. The behaviour of all is, as we have seen, quite similar not only to that of neg but also to that of emphatic segments, and in those cases where all diverges from the 'normal' quantifier pattern, we can claim that this is because a pattern associated with either neg or emphasis is taking over from that associated with quantifiers. But of course this could only happen if the underlying structure of all were similar to that found for those
other items. Therefore the apparently idiosyncratic characteristics of all can be regarded as in fact the mingling of three very general patterns (of quantifiers, of negators and of emphasis), and this inexorably leads to an acceptance of a structure such as (88), which enables the mixture to be predicted, as (approximately) the correct underlying structure for all.

Since our hypothesis makes several claims about all which are perhaps rather novel, it is worth repeating them explicitly before we move away from all and towards the other universal quantifiers. Firstly, like the existential quantifiers, all is derived from a higher sentence. This permits us to account for the many points of grammar which the two types of quantifier have in common. Secondly, however, this sentence is more like an additional statement of emphasis 'on top of' a normal declarative. This explains why all does not greatly affect the acceptability of a sentence, as we discussed in §9.3. Thirdly, all, like many, includes an adjectival modifier of a quantifier-noun, and thus may be negated. But the fact that all is emphatic and thus must always come from a sentence higher than the matrix explains why all, in contrast to many, does not appear in postdeterminer position. Fourthly, the claim that the basic quantifier-noun underlying all is THE SET, rather than A NUMBER as with existential quantifiers, explains both the lack of existential sentence with all
and the strong (in some dialects, absolute) tendency for *all* to have a generic interpretation when collocating with 'indefinite' plural NP's. Fifthly, quantifier lexicalisation, a process common to all quantifiers, in this case produces a structure for *all* very similar to that for negatives, and this explains why *all* has variable position. Finally, although we have not discussed this point, it is clear that collocations of *all* with mass nouns, which are completely acceptable, present no special difficulty given the kind of derivation which we have suggested.

9.5 'Every' and 'each'

Without wishing to appear dogmatic, there does seem to be some grounds for claiming that our hypothesis about the underlying structure for *all* ought to be considered seriously. Therefore we may now permit ourselves to move on and examine the two other universal quantifiers which we must consider in this chapter: they are *every* and *each*. Of course there is a third quantifier which is indisputably a universal, and that is *both*, but it ought to be clear from the discussion in Chapter 4 that *both* should only be reconsidered once we have proposed a structure for partitive constructions, which will be one of the tasks of Chapter 10. Also in that same chapter we shall attempt to ascertain the status of quantifiers such as *any*, which has some claim
to be considered among the universals, but whose claim is far from indisputable. Thus every and each are the only remaining universals which are proper objects of enquiry in this chapter. There is no particular reason for looking at one before the other, so the decision to look first at every is quite arbitrary.

There appear to be three important differences between all and every for which we shall have to attempt to find an explanation and then relate that explanation to differences in the grammar. Perhaps the most obvious difference is that every collocates with singular nouns only. This is generally regarded as a purely surface fact which reflects the underlying distributive meaning of every, see, for example, our remarks in §3.4. The claim is that a semantic feature of distributivity is realised by a late transformation which changes the collocating noun from [+plural] to [-plural]. Although this is a simple, and thus intuitively appealing, explanation it is not clear that it can be used to explain the ungrammaticality of sentences such as those in (109) below, cf. Vendler (1967:72-76), from whom the first example is taken, and also Dougherty (1970:866-71), who, although he does not discuss every, leads the way to a number of interesting examples. We may also note that Carden (1968:13-14) argues for a number-changing rule:

\[(9.109) \text{a *Every one of the blocks is similar}\]
b *Every one of the girls left the party together

c *Every girl left the party simultaneously

The problem is that if the collocating NP is an underlying plural, then the ungrammaticality of (109) is only to be explained in one of two ways: either the requirement of be similar, together, etc. that the subject NP be plural is a surface requirement or some such feature as [+distributive] is attached to every and we suppose that the NP in question be required to be [-distributive]. However there is undeniable evidence that the first of these alternatives must be wrong, for compare with (109):

\[(9.110) \text{ *The scissors are similar}\]

and the second alternative is clearly ad hoc. Thus the simple explanation may have to be rejected.

The second point of difference between every and all is that the former does not have the same freedom of movement as the latter; thus both the following sentences are ungrammatical, regardless of whether the collocating NP and subject - verb concord is singular or plural:

\[(9.111) a \text{ *Boy(s) every run(s) quickly}\]

\[b \text{ *The boys have every won a prize}\]

Since the sentences remain ungrammatical if one is inserted after every, which would parallel partitive
constructions with every, it has to be accepted that every only appears before the NP with which it collocates. We might note here that Carden (1968:18-19) claims that this is not true, for he suggests paradigms which give, for example:

(9.112) a The boys every one of them run
   b The boys hit the balls every one of the balls

But these paradigms, which give a spurious air of generality to Carden's quantifier-movement rules, rely, it seems to me, on a quite invalid discounting of intonation pauses which show that in (112) we have examples of repetition, not quantifier-movement. Further, Carden's (1968:23-25) actual discussion of the importance of intonation pauses is totally inconclusive. The only possible type of counter-example is:

(9.113) The soldiers every one advance

But here Carden (1968:16) does not make it clear whether or not there are pauses before and after every one. If there are, it is not a counter-example, and in any event it appears to be the case that most speakers reject (113) if there are no such pauses. Assuming that Carden's examples prove nothing, we can now observe that, since it also does not appear in postdeterminer position, every has the same distribution as some as far as surface ordering is concerned and leaving aside the question of negation. The restrictions on the distribution of every could, of course, be for two reasons: it might
be because of number disagreement, which, as can be seen from the bracketing in (112a), is difficult to resolve. However, whatever the validity of (113) it does suggest that the problem is not impossible. More likely, therefore, is the hypothesis that every's distribution is more like that of some than that of all because its underlying structure resembles the underlying structure of the former more than it does that of the latter.

In contrast to the second point, that in one aspect every has a more restricted distribution than all, our third point is that in another aspect every has a much less restricted distribution than all. More specifically, whereas all can usually only collocate with the subject NP of a generic sentence, if that subject is 'indefinite', every is fully grammatical in nongeneric sentences; thus compare the sentences below with those in (62):

(9.114) a ?Every boy kisses the girls
    b Every boy kissed the girls
    c Every boy is kissing the girls
    d Every boy has kissed the girls
    e Every boy has been kissing the girls

Whereas all was most likely to be unacceptable in sentences where no generic interpretation was possible, the only instance where every is at all dubious is (114a), where a generic interpretation is most probable. In
§3.4 we suggested that in the light of such complementary distribution it would be possible to regard every as a suppletive form of all, but tempting though that proposal may be it will have to be discarded in the light of the evidence obtained from examples such as those in (109). The semantic difference between the two quantifiers is such that it must be the product of more than a suppletion process. The answer appears to be that every behaves as if it were an existential quantifier rather than a universal quantifier like all. Thus, like the existential quantifiers, cf. §9.3 and Anderson (1973a), every demands a nongeneric interpretation. The appearance of suppletion is due to the complementary semantic characteristics of the two types of quantifier. Given the evidence of the second and third points it seems reasonable to adopt the following position: all is a 'true' universal quantifier, having the underlying structure approximately outlined in (88), and it therefore has variable surface structure position, etc.; every, on the other hand, is the result of some modification of the structure underlying existential quantifiers.

The phrase "some modification" is, of course, very vague, and therefore it may appear as if there were a great deal of work to be done before we can reach the correct hypothesis. But that is not so, for we have already discussed a proposal, which, at least in outline,
is consistent with the demands which the semantic and syntactic facts entail. This is the proposal made by Anderson (1973c), discussed in §9.2, that all is derived from a construction including the negation of a higher existential sentence and a lower negation of the matrix sentence. Without, at least for the moment, repeating either the arguments of that section or the transformational processes involved in the generation of the correct surface structures, it should be clear that if we claim that the surface quantifier which is generated is not all but every, then the principal objections made against Anderson's proposal will be met. One modification of his work is, however, necessary: as we observed, Anderson (1973b) suggested that a reversal of neg-incorporation, followed by a lowering of the higher quantifier onto the none which then appears in the VP, would account for the postnominal position of all. But every does not occur postnominally. To account for this we need only claim that this procedure does not in fact take place. This claim is intuitively satisfying since it dispenses with the only transformation in Anderson's hypothesis which is not clearly independently motivated and which thus may be suspected of being ad hoc. But as Anderson (1973c) has been able to show, the remainder of the transformational process is natural and justifiable. We may therefore claim that in modifying his hypothesis to generate every rather than all, we have both simplified and strengthened it.
But we still have to explain the first point discussed above, which, we were able to observe, was inadequately explained by the postulation of a late number-changing rule. Here again a modification of a proposal made by Anderson seems to give the correct results. In Anderson (1973b:28-29) it is proposed that a sentence such as:

(9.115) Each of the men has kissed the girl
has an underlying structure which we may abbreviate as:

(9.116) [neg one of the men[one of the men
has kissed the girl]]

Let us claim that that kind of structure is inappropriate for each; the reason for this is the same as that which makes analogous structures inappropriate for all, see below for some justification of our claim. On the other hand, it is much more appropriate for every. If we assume that one, like many, is a compound existential and its acceptability in postdeterminer position together with the possibility that it may be negated suggests that this is so, then only one problem remains: is the highest neg associated with the quantifier on the existential sentence or on the quantity-referring partner? But since a structure of the form:

(9.117) A number\_i does not exist and

a number\_i is one

is quite meaningless we can presume that the negation must be on the quantity-referring sentence. We may admit that if every had variable position then we would
now be unable to explain the lack of variable position for many in the manner suggested towards the end of §9.3, for the negation is at the same point for every as it is for many. But since every does not have variable position the problem does not arise.

We can now claim that the underlying structure of, for example, (114b) will be:

(9.118) $[s^A \text{NUMBER EXIST} [s^A \text{NUMBER kissed the girls} [s^A \text{NUMBER BE boys}]]]$

and $[s^neg [s^A \text{NUMBER BE one}]]$

Following the proposal in note 3, all lowering rules apply before $n$eg-incorporation, and we then obtain:

(9.119) neg one boy neg kissed the girls

Then $n$eg-incorporation applies twice to generate the quantifier every and we have thus generated (114b). We can see that the sequence not one is preferable to not any, because in the latter case we could generate a plural NP; furthermore we saw in §3.2 that not one is always interpreted as less than one, i.e., zero, cf. Smith (1972). The above solution accounts for the semantic and syntactic characteristics of every in an adequate manner. The semantic point that the reference of every is the same as that of all, except for the generic/nongeneric contrast, is explained by the sequence not one ... not; the syntactic point that every behaves like an existential quantifier except that it cannot
appear as the complement of an overt existential sentence is explained by the constraints on the derivation from (118) to (114b) which Anderson (1973c) has demonstrated to be correct; and the further syntactic point that every always collocates with a singular countable noun is explained by deriving every from a structure including one, for one has that precise restriction. Thus the unacceptability of the sentences in (109) is paralleled by the unacceptability of those in (120), and it is to be explained in exactly the same manner:

(9.120) a **One of the blocks is similar
b *One of the girls left the party together
c *One girl left the party simultaneously

Let us now move on to a consideration of each, which can be distinguished from all in four important respects. Firstly, and most strikingly, each cannot be negated and it does not even seem to be very acceptable in a negated declarative sentence, although in interrogative sentences it is more acceptable:

(9.121) a *Not each boy won a prize
b ??Each boy didn't win a prize
c ?Didn't each boy win a prize?

The gradience of acceptability here can be correlated to the availability of a neg-V reading: the more usual the neg-V reading the more acceptable the sentence. This
suggests that the only constraint is on direct negation of each. The second distinction is that each, like every, demands a singular NP:

(9.122) a Each boy won a prize
   b *Each boys won a prize
But in postnominal position the reverse is true, for the collocating NP is then plural:

(9.123) a *The boy each won a prize
   b The boys each won a prize
The third distinction is that each, although apparently associated with the subject NP, can appear after the object NP:

(9.124) a The boys won a prize each
   b *The boys won a prize all
It is relevant to note, however, that there seems to be a restriction on the object NP in this case, to the effect that it include an existential quantifier:

(9.125) *The tasters sampled the wines each
Compare with (125):

(9.126) a Each of the tasters sampled the wines
   b Each taster sampled the wines
We appear to have stumbled upon another problem here, for compare with (126):

(9.127) *Each boy ate up the apples
It seems to be the case that if the object NP does not include an existential quantifier then there are two restrictions on each: (i) it cannot appear in sentence-
final position; (ii) it can only appear elsewhere if the verb does not denote an exhaustive action - thus sampled against *ate up. How such facts can be captured within the grammar is quite mysterious to the present writer. 9

The fourth point of difference between each and all is that each regularly has a nongeneric interpretation. One example will suffice to demonstrate this:

(9.128) Each boy has won a prize
Since there is perfective aspect the sentence must be nongeneric, yet each here is acceptable, unlike all, compare:

(9.129) *All boys have won a prize
Strangely, however, the equivalent sentence with each in postnominal position is ungrammatical:

(9.130) *Boys have each won a prize
The contrast between (128) and (130) explains why we have silently introduced the in several of the examples above. Remarkable as the contrast may be, it is reminiscent of a contrast found with another quantifier. Thus we find the following parallel pair:

9 And we still have to explain:

(i) Each boy has eaten up his lunch
Note that here also each does not occur sentence-finally:

(ii) *The boys have eaten up their lunches each
The presence of anaphoric pronouns clearly complicates matters.
(9.131) a  Both boys have won a prize
b  *Boys have both won a prize

Similar examples were discussed in Chapter 4, where the following explanation was given: the surface quantifier both is derived by a lexicalisation rule (called Dual Copy) from a structure including a the originally dependent upon the collocating NP; but if the quantifier was moved into postnominal position, then the was left behind, there being a constraint that it could not cross its own NP. Obviously the same explanation potentially accounts for the ungrammaticality of (130). Therefore, just as both is derived from all the two, so must each be derived from all the, with some additional factor we have not yet discovered. However each differs from both in one very important respect: whereas both (in pre-nominal position) obligatorily has the-incorporation, each need not have incorporated a the. If it does, then it will be nongeneric, if it does not and yet there is no the present, it will be generic. Thus (132) is ambiguous because it may or may not be the result of the-incorporation:

(9.132) Each worm has five legs

But exactly as with both, if each is postnominal any incorporated the must remain behind in postnominal position, and this has the effect of resolving the
ambiguity.\textsuperscript{10} Therefore the (a) sentences below are
generic, the (b) sentences are nongeneric:

(9.133) a Worms each have five legs
   \hspace{1cm} b The worms each have five legs

(9.134) a Worms have five legs each
   \hspace{1cm} b The worms have five legs each

In this respect Carden's claim (1968:15) that each is
'definite' except in sentence-final position is seen to
be quite incorrect. The great advantage of our explana-
tion is that it enables us to account for the common
nongeneric interpretation of sentences containing each
without having to posit an underlying structure for each
which is quite different from that for all, as the lack
of genericness in (128) is explained by its collocation
with a plural 'definite' NP, even though there is no
surface the.

But even if we can now explain the fourth differ-
ence between each and all, the first three still remain
unresolved. In this respect the observation made by
Vendler (1967:78) that each "directs one's attention to
the individuals as they appear" is extremely helpful.
The neatest way to express this syntactically is to
introduce an adverb like individually (singly seems

\textsuperscript{10} It is very probable that in those dialects where
all may incorporate the, cf. \S9.4, exactly the same rule
will apply.
equally adequate for our purposes). Thus the generic interpretation of (132) may provisionally be considered as a variation of:

(9.135) Individually all worms have five legs

The nongeneric interpretation, of course, would be provided for by the insertion of the after all. Since the adverb in (135) includes the quantifier within its scope we may now go on to propose that the underlying structure of each is exactly that of all, except that there is a yet higher sentence containing the adverb represented by individually. Each will be the product of the inclusion of the adverb into the incorporation process which we have described in the previous section for the generation of all. The above claim is bare and unjustified as it stands, but there are a number of facts which show that it has considerable plausibility.

Firstly we may note that most adverbs appear in the surface structure positions where each may occur, including, crucially, sentence-final position. If each is derived by incorporation of an adverb, then we can explain its grammaticality in that position, which otherwise would be an idiosyncratic characteristic of that quantifier. The parallelism with neg which is found with all, and which thus may be deduced to occur with each also, is insufficient as an explanation of this fact. Secondly we can now explain the impossibility
of negating each. If (315) is intelligible and represents in some fashion an intermediate stage in the derivation of each, then there are two possibilities for the underlying negation of each: the negation may either be upon all or be upon individually:

(9.136) a Individually not all worms have five legs

b *Not individually all worms have five legs

The interesting fact is that (136b) is unacceptable, although it is not completely certain how such structures are to be blocked. Whatever the exact explanation is, we can see that only (136a) will provide a potential source for the negation of each. Now there is in fact a realisation of (136a) involving each, namely:

(9.137) Not all worms have five legs each

Such a sentence, we may observe, can only be generated if we have assigned a partly adverbial status to each, since two quantifiers cannot cooccur (modify the same noun) unless they are of different types. Our proposal will hypothesise only one underlying quantifier-noun for (137), since each will be an optional lexicalisation of individually. However, the ungrammaticality of (138) - and thus (121a) - is still to be explained:

(9.138) *Not each worm has five legs

It seems most probable that such sentences are ungrammatical because lexicalisation of individually all only occurs if there is no intervening item, which is not the
case in (136a). In such cases the adverb is, as we have said, optionally converted to *each*. These instances of *each* must be regarded as pseudo-quantifier, for their adverbial status is clear and undeniable. It can be observed that (138) would also result from (136b) if that sentence were grammatical and it may be that, to avoid confusion between the two types of structure, one grammatical, the other not, the fact that in underlying structure the negation is grammatically possible only on the quantifier and never on the adverb must be overtly reflected at the surface. We now only have one distinction between *all* and *each* to explain, namely the number-changing rule which *each* induces in prenominal position. It looks as if this ought to be related to individually, but unfortunately no formalisation of the rule is obvious.

If our suggestions concerning the underlying structure of *each* afford at least a temporary solution to the problems surrounding that quantifier, and we can certainly claim that we have been able to account for a wide range of facts without having to introduce ad hoc or item-individual transformations such as the quantifier-movement rules of Carden (1968) and Dougherty (1970), then we have returned to the theme presented at the beginning of this chapter, namely that universal quantifiers are related to adverbs. But we are now looking at that theme in a new and more satisfactory
way, at least in terms of descriptive power, for we have been able to observe that universal quantifiers must be related to several other grammatical categories. The difficulties facing the grammarian when he attempts to analyse universal quantifiers are primarily the result of a quite understandable desire to view them as a unitary whole. Yet the relevant syntactic and semantic facts deny the possibility of the kind of unitary description which we were able to propose for existential quantifiers. This scarcely seems an inviting conclusion when we consider that existing hypotheses have claimed a common underlying structure for all (or most) quantifiers. But if we reexamine, for example, Carden (1968: 15-36), it is indisputable that all his movement transformations, which, unlike our transformations performing the same task, are quantifier-specific (that is, affect no other category) and furthermore they have to be restricted in application to various arbitrary subsets of quantifiers. Thus, although Carden's hypothesis looks homogeneous when we consider only the underlying structures, the derivational processes are quite different for each quantifier and so the hypothesis is in fact heterogeneous.

Were it not for one factor our proposals would be no better, for they too apparently display a heterogeneous character. This factor is that all our proposals are variations upon independently-justified
structures and transformations. Thus, in the case of all the underlying structure is related to two other structures: (i) the structure for existential quantifiers, in that a higher sentence containing a quantifier-noun is still necessary; (ii) the structure for emphatic sentences. The transformational process has similar relations to other parts of the grammar of English: (i) a quantifier-lowering transformation is necessary, which is similar to existential-lowering; (ii) this transformation induces a structural confusion with neg and thus all has features in common with not. Parallel facts hold for each, and the relation of every to the existential quantifiers is even clearer. Since both the idiosyncratic syntax of the universal quantifiers and their semantic roles support such proposals, there can be little doubt that we have at least pointed the way to an adequate hypothesis. The complexity of the grammar of the universal quantifiers is such, however, that considerably more work will have to be done before we can even start to hope that we might be approaching a definitive solution.
Chapter 10

Beyond the paradigm

10.1 The lumber room

In the first three chapters of Part III we have concentrated our attention upon those quantifiers and those quantifier constructions which follow the patterns suggested by the first heuristic procedure of §7.1. As we observed at the time, however, not every quantifier shows a friendly attitude towards that device, and there is at least one quantifier construction, namely the partitive construction which has a quantifier as its head followed by a 'definite' NP, which appears to be quite separate in its grammar from any of the other relevant constructions. Therefore before we leave the field of undisputed quantifiers in order to examine, in Part IV, the 'articles', we must first discover whether these as yet unanalysed items and constructions are consistent with our general hypothesis or if they demand that some modification of our hypothesis, or perhaps even a quite different hypothesis, must be adopted.

Inevitably we are faced in this chapter with rather a rag-bag of items - this is the lumber room of the grammar to which Kruisinga refers - for the objects of study are precisely those which do not obviously fit into the established paradigms. Nevertheless, efforts
to impose some sort of order can be established in two directions: we can limit the number of items and constructions to be discussed and we can impose some sort of sequence upon our discussion. Despite the fact that the former of these is a blatant encouragement to avoid difficult problems and that the latter is not totally possible, we shall attempt to follow both courses; but the former especially requires some justification. If we continue to ignore, as we have done so far, potential candidates for discussion such as stressed some, a certain, several and enough, then we can hardly make a claim of comprehensiveness for our survey. But although comprehensiveness is a desirable aim there is no reason to suppose that it is a viable one. Although quantifiers form a 'closed-class' category, the range of behaviour within that category is extremely wide and as such it is not wholly amenable to grammatical analysis given both the present level of adequacy of grammatical theory and this writer's capabilities. We can use a metaphor from phonology here. At present the most we can hope to ascertain are the phonemes of quantifiers, and the allophones of those phonemes are as yet not fully determinable. Although the value of taxonomic phonemics is to be disputed in a sophisticated phonological theory, its usefulness at a more primitive level is certain. And we should not delude ourselves into believing that the study of syntax and semantics is beyond that more primitive level.
The equivalents of phonemes in this present study are the paradigmatic quantifiers and our concern must be, as it has been, to relate other quantifiers (allophones) to the paradigmatic models. Knowing so little about the paradigms it would be a luxury to examine quantifiers which, although interesting in themselves, have no obvious relation, even of a negative character, to the putative paradigms. Therefore we must rely on the certain grammatical facts and our less certain intuitions to tell us which quantifiers are not to be related directly to the paradigms which we have constructed, yet are most likely to show productive results if investigated in detail. The most probable are the pair any and no, but in restricting our further analysis to these two quantifiers we do not deny the necessity of investigating the other quantifiers mentioned above. After we have considered any and no we shall move on to examine the structure of quantifier partitive constructions, since all quantifiers (some with slight morphological changes) appear in such contexts as well as in the prenominal position upon which we have concentrated our attention. Finally we shall discuss a quantifier which, although it does not depart from the paradigms in a very radical manner, cannot be discussed properly without the evidence from partitive constructions being at hand.
10.2 Some reasons why there must be some 'some-any' rule

The many-splendoured nature of the meaning of any is captured most concisely by Jespersen (1933:181) when he says that "Any indicates one or more, no matter which". This indeterminateness, so precisely expressed, suggests that it would be foolish to hope that the basic underlying structure of any might be determined on semantic grounds; rather, it would be most profitable to consider its syntactic characteristics firstly and so attempt to determine a plausible underlying structure. Fortunately, the syntactic behaviour of any has been quite extensively studied and indeed we have been able to make a few relevant observations at earlier points in this work, see especially §§2.3, 3.3 and 3.4. Therefore many of our remarks below need only be very brief.

It is well-known that any has only a restricted range of grammaticality, for it is unable to occur in a simple declarative sentence:

(10.1) a  *Any boy is sitting on his desk
    b  *At the party I saw any boy

Although the above statement needs a certain amount of elaboration, the only point which we have to note immediately is that collocations with a plural or mass NP are equally ungrammatical. Whenever the sentence is not declarative, however, any is usually grammatical. The best-known examples involve negation:
(10.2) At the party I didn't see any boy
But in this case we may note that the status of the
collocating NP has a marginal effect, in that (3a) and
(3b) are both more acceptable than (2). The effect is
definitely marginal, however, and (2) is grammatical:

(10.3) a At the party I didn't see any boys
       b At the party I didn't drink any milk
An element of confusion with regard to the status of any
in negative contexts is introduced by the ungrammatical-
ity of:

(10.4) *Any boy isn't sitting on his desk
However, this is explained by Klima (1964:280) as due to
the failure of an obligatory rule of neg-incorporation
into the preceding 'indefinite' quantifier. The opera-
tion of Klima's rule gives:

(10.5) No boy is sitting on his desk
We shall return to the problems posed by (4) below, but
for the moment we need only note that the distinction
between the types of sentence exemplified by (1) on the
one hand and (2), (3) and (5) on the other is that in
the former the existence of boys is asserted, in the
latter such existence is not asserted. We might, of
course, state that in the latter cases the existence is
denied, but we shall see that this would be to miss an
important generalisation, and, more crucially, such
denial is not logically equivalent to an assertion not
being made.
A second type of sentence in which any is grammatical is one where there is a certain type of modal, most usually a modal expressing possibility:

(10.6) a  He can read any book
            b  Any boys can come to the party

Once again we may note that the existence of referents for the collocating noun is not asserted; it is not stated as a fact that, in the limited world to which the discourse is referring, there are books or boys. This must be associated with possibility in some way, but it is not simply a matter of possibility, for compare with (6):

(10.7) a  He can read some books
            b  Some boys can come to the party

We shall see eventually that there is a relatively simple explanation of this, even if we ignore the possibility that the instances of can in (7) are not identical semantically with those in (6), but let us firstly consider other examples of grammatical occurrences of any. To some extent generic sentences are similar to 'possibility' modals, in that a generic sentence, cf. §9.3, is a statement about the potential value of some events

1 For an illuminating discussion of modal verbs see Anderson (1971c), and for a further extension of the contexts in which any is grammatical see the remarks on modal operators in Jackendoff (1972b:279-300).
being performed by some potential object. Therefore it can hardly surprise us that any occurs in generic contexts, for there too no assertion of existence is made:

(10.8) Any acid will dissolve that rust

Now in §3.3 we noted with reference to remarks made by Bolinger (1960) that sentences of that type are at least closely related to conditionals:

(10.9) If something is an acid it will dissolve that rust

In both generics and conditionals there seems to be a preference for singular over plural count nouns; thus both (10a) and (10b) are less acceptable than either (8) or (9):

(10.10) a ??Any cars pollute the atmosphere
    b ??If some objects are cars they pollute the atmosphere

The explanation of this is obscure to this writer, but at least they serve to underline the relatedness of generic and conditional sentences.

The existence of conditional sentences containing if enables us to explain an otherwise puzzling instance of any. We observed above that any cannot occur in a simple declarative sentence, but this is not so if there is dependent upon the collocating NP a restrictive clause or adjective, or even, apparently, if there is an 'understood' relative clause, i.e., there is no relative clause present but the stress pattern suggests that the
speaker has some such adjunct in mind. In all three cases any is grammatical:

(10.11) a The headmaster thrashed any boy who had teased the French mistress
b Any lázy student failed the exams
c The police booked ány motorist

(11a) can be paraphrased by:

(10.12) If any boy had teased the French mistress the headmaster thrashed him and similar paraphrases are available for (11b) and (11c), although in the latter case the 'understood' clause has to be made explicit. That may provide counter-evidence to any hypothesis wherein (11a) would be derived from an underlying structure more closely resembling (12) than itself, and also such a hypothesis would apparently pose severe problems with regard to pronominalisation. This is unfortunate, for it is a most appropriate hypothesis, and therefore we shall make some attempt to ameliorate the situation below. In any event, with regard to (11c) we ought to remember the case of stressed all which we discussed in §9.4; it may be that here too some rather different explanation will be needed for stressed as opposed to unstressed any. But at present we can only claim that the grammaticality of any in (11a) is related in some unknown way to conditional structures.
Finally there are two other contexts in which any is grammatical, two contexts which are often considered together by historical accident, both having been discussed extensively in Katz and Postal (1964). The first of these is the imperative:

(10.13) Answer any question (!)

Strangely enough, however, this seems to be related to the type exemplified by (11c), for any may receive heavy stress; but the relation is unstable. It is most probable that (13) is ambiguous, having both a true imperative reading: "Answer any question that may be put to you!", and a pseudo-imperative reading: "Answer any question that you like". The second reading is of the type discussed by Vendler (1967:79-82) but the first reading is a counter-example to Vendler's position (and hence that of Jackendoff, 1972b:339), since there is no choice available to the addressee. Intuitively both readings are related to the examples in (11), but it is not certain how the relation is to be formalised. The other context to be noted is, of course, the interrogative:

(10.14) Did you sell any bananas?

Given the fact that all the other instances of grammatical any which we have mentioned are in contexts where the existence of the referent(s) of the collocating NP is not asserted, it is fully predictable that (14) would be acceptable, for in such a sentence it is the existence of bananas (such that they have been sold) which is
being questioned. All the above examples taken together
point the way, therefore, to the tentative position that
every instance of any is in one and the same context:
the context where there is no assertion (but not neces-
arily any denial) that referents of the collocating NP
exist in the world referred to and limited by the dis-
course.

Within the theory of transformational grammar there
have been two principal paths along which the grammarian
has trod in search of an answer to the problems posed by
the facts above. The first leads to a 'some–any' rule,
that is, a rule which converts some to any in certain
contexts. This rule was first proposed in Klima (1964),
and Klima suggests that the rule operates when a quant-
ifier is within the scope of an 'affective', e.g., a
negative, a question morpheme or a conditional, in other
words basically the environments discussed above. The
second path leads to the postulation of a group of
operators, e.g., Hypothetical or Unrealised, together
with a statement that quantifiers such as any are gram-
matical only when within the scope of such an operator.
The most important proposals to this effect are to be
found in Seuren (1969:104–63) and Jackendoff (1972b:279–
320), although otherwise these two works adopt very
different theoretical positions. To a greater or lesser
extent the positions adopted in all three works are
incompatible with the basic tenets of this study. This
is clearest in the case of Klima, for his 'some-any' rule is meaning-changing under certain conditions, and we have held that there should be no meaning-changing rules. Since we shall wish to discuss the relation between some and any below, and since the meaning-changing status of Klima's rule (but not of every possible 'some-any' rule) is not disputed, we shall leave that point for the moment. However the incompatibility between the introduction of operators and our own theory will probably be much less clear, and so it may be useful to discuss it more extensively now.

When we first discussed both, in Chapter 4, we toyed for a little while with the addition of features to a quantifier, i.e., the creation of a complex symbol, cf. Chomsky (1965), in order to distinguish between both and all. However we were able to show that such features were undesirable and that a more adequate solution did not need to use them. Later, in §§7.2 - 7.3 we discussed various proposals to introduce operators to account for the grammar of some (and the other quantifiers), in particular those by McCawley (1971) and Bach (1968). We were able to conclude that those proposals introduced an unnecessary complexity into the grammar and thus a more adequate grammar would not use such concepts either. Thus we can observe that the use of either features or operators leads, at least in some cases, to an inadequate grammar. This empirical conclusion is reinforced
by a theoretical point. Both features and operators have in common the fact that their existence is limited to underlying structures, that is, they must be modified into some other form before the surface structure is reached. On the other hand, the alternative structures which we have proposed contain only items which may appear in surface structure. In other words, apart from category symbols, the repertoire of our analysis of English contains only members of English. This is obviously a stronger hypothesis that one which permits arbitrary features or operators, and therefore it is theoretically preferable. Although the operators introduced by Seuren and Jackendoff are different from those introduced by, say, McCawley, they are in principle the same and are thus incompatible with the 'best grammar'.

As we have ruled out the possibility of using either of the more common methods of accounting for the grammar of any, we shall have to search for an alternative method of our own. In order to do this with some hope of success we shall claim that there are three

2 Some features are still necessary, however, for example [Isingular]. It is difficult to see how their use can be avoided, but at least they have the merit that they are uniquely related to given linguistic events, see further Chapter 11.
subgroups of contexts which permit any, namely negatives, questions and conditionals. The first two categories speak for themselves; the third category covers all other cases of any which we have discussed, that is, modal-governed any, generic any, imperative any, and restrictive relative any. It will be recalled, however, that this latter type, exemplified by (11), is at first sight rather different from the other three (with perhaps some doubt about the imperative). Obviously the three groups mentioned here are not necessarily justifiable, but it is to be hoped that they will be justifiable by the kinds of analysis of any which we shall attempt to demonstrate are valid and necessary. A further assumption which we shall make is that some and any are synonymous, although this is perhaps incorrect; nevertheless it has an element of truth about it since it seems improbable that the underlying structures for the two quantifiers will be radically different from one another. We shall return to any putative meaning differences between some and any below.

Let us consider firstly the structures which we have called conditionals, as exemplified by (6), (8) and (13). The most obvious point is that none of them can be paraphrased by an existential structure but that all of them can be at least approximately paraphrased by a conditional. Thus compare the following existential paraphrases of (6a) and (7a) respectively:
(10.15) a *There is any book he can read
   b There are some books he can read

Now compare the attempted conditional paraphrases of the same sentences:

(10.16) a If there is a book he can read it
   b If there are some books he can read them

Although (16b) is grammatical, it is not a paraphrase of (7a). The evidence of such attempted paraphrases together with our semantic intuition that with any there is no assertion of existence - which, clearly, can be the only explanation of the generic status of (8) - strongly supports our claim that there is an underlying conditional in some sentences containing any. However there is one problem which must be resolved before we postulate an underlying structure and discuss consequent derivational histories. The problem is that there appears to be two possible positions in structure for the conditional: again taking (6a) as our example, we could propose a structure corresponding to either (17a) or (17b):

(10.17) a If there is an object which is a book he can read it
   b There is an object which, if it is a book, he can read

In the (a) case the conditional is on the existential sentence and in the (b) case it is on the predicate nominal. Some evidence that both might be possible but
that the (b) case is marked comes from the fact that the 
(b) interpretation of (6a) is preferred only if book is 
heavily stressed. With such stress the interpretation 
is that there is a given set of objects but it is only 
if one of these objects is a book that he can read it. 
Without the heavy stress there is no assertion that 
there are any objects at all (for the purposes of the 
discourse). However the following sentence shows that 
the problem is not easily resolved:³

(10.18) You can visit any ship

(18) is ambiguous: the invitation may be to visit only 
one ship, no matter which, or it may be to visit as many 
ships as is desired. The first interpretation is para-
phrasable as (19a), the second as (19b):

(10.19) a If there are objects and one of 
them is a ship you can visit it 
b If there is an object which is a 
ship you can visit it

Therefore it appears as if conditional structures for 
both must be generated.

One general objection to the approach taken here 
concerns our claim that in a sentence such as (6a) there 
is no assertion of the existence of books. Taken

³ Notice that (18) is very similar in meaning to: 
"Visit any ship". This helps to support the claim that 
imperatives containing any are basically conditionals.
together with this there may be some objection to our use of the term 'conditional'. Thus it may be objected that (6a) would be nonsense if it were not presupposed that there were some books. Even if this objection is correct it is not wholly so, for it misses the point that the statement of possibility is not restricted by the presuppositions of the speaker: it is not only the books whose existence is presupposed that may be read, all other 'book-events' may be read too. This is what Vendler (1967:80) means when he writes that with any "I grant you the unrestricted liberty of individual choice". The choice cannot be restricted in any way, not even by the presuppositions of the speaker. And it is this implication which is intended by the use of the term 'conditional'. A sentence under the scope of a conditional is simply one where the speaker does not vouch for its truth or falsity. If any is used the speaker does not determine the referents of the collocating NP and therefore he cannot vouch for the truth or falsity of the sentence. Even in cases such as (11a) where it may be assumed that the speaker is willing to claim that at least some boys were thrashed by the headmaster, he is not making a claim as to how many there were, rather he is stating the conditions under which they were thrashed.

Therefore there seems good reason to suppose that the structure of any in the sentences which we have been
discussing is intimately bound up with conditionals. The main problem so far is whether (17a) or (17b) is the better surface approximation to the correct underlying form. As we have seen, there is little evidence upon which to make a decision, but that little does suggest that the former is to be preferred. So we can postulate the following underlying structure for (6a), in which we ignore the structure of modals and assume that some and any are synonymous:

(10, 20)

```
( S
  / \   /
 /   \  /
/     \ /
S     S
if    then

( S
  /\  /
 /  \/
/    /
NP   NP

( NP
   /\  /
  /  \/
 /    /
A NUMBER NP

( S
   /\  /
  /  \/
/    /
EXIST

he

( VP
  /\  /
 /  \/
/    /
V NP

can read

( NP
   /\  /
  /  \/
/    /
A NUMBER BE books
```

Obviously there must be some dispute about the underlying structure of conditional sentences; however, (20) seems to be the most plausible type of structure and so it has been adopted without further argument. A further point ignored here is the singular/plural distinction, whose import is insufficiently clear to this writer to make its discussion here fruitful.
Assuming that the development of *any* is identical to that of *some*, lexicalisation will give the following structure:

(10.21)

Notice now, however, that existential-lowering cannot apply, since there is no lower S into which *any books* could be lowered as EXIST is deleted. A possible solution to this would be to assign a lower-S status to the then-clause; but there seems to be no non-ad hoc motivation for that, and therefore we shall have to see what can be done with (21) as it stands. The only move available appears to be an *any*-placement transformation, which will shift *any books* into the coreferential NP in the then-clause. This can be formulated as:

(10.22) \[ \text{If} [\text{any} \ N_1 \ \text{EXIST}] \text{then} [\text{any} \ N_1 \ Y] \]

We still have to account for the deletion of *if* and
then, but this is to be explained as due to the lack of a dependent clause for if following (22) and the correlative nature of conditional constructions: we must delete if because there is no dependent S and then is deleted because there is no if remaining. Thus (22) would give an intermediate structure of:

(10.23) *If then he can read any books

and we delete if and then by a rule of the form:

(10.24) If then S ---> S

We shall see below, however, that the postulation of this any-placement rule to generate, say, (6a) is incorrect. And that is desirable because the rules are complex and otherwise unmotivated; however the evidence of (6a) does not in itself support immediately any other hypothesis.

As we have already stated, although (11a), etc. can also be considered as underlying conditionals, their structure will prove to be rather different from (20), which we may take (for the present) as representative of the other types in this subgroup. This can be deduced from the fact that (12) is a paraphrase of (11a), and it is reflected at the surface by an overt conditional in (12). If we assume that (12) most closely reflects the underlying structure of (11a), as seems probable, then we may propose (25) as that structure:
Perhaps the most interesting feature of (25) is that the S within the scope of if is identical to that underlying a sentence of the form:

(10.26) Some children had teased the French mistress

From this it follows that applying exactly the same processes as are applied in the derivation of some, we can generate (12) through the intermediate structure of:
It now looks as if our earlier any-placement rule is indeed wrong, for the preferred transformation to reach (11a) will be one which moves the S dominated by if to below the NP dominating child in the then-clause. If-then deletion will still take place, however, and the result will be:

(10.28)

Then relative formation will change the lower any child to who and the surface structure of (11a) results.
The derivation from (25) through (27) to (28) and thence to the surface structure representation of (11a) has two distinct advantages. Firstly, the attachment of the if-clause to the coreferential NP in the then-clause bears at least a family resemblance to existential-lowering, since it creates a new highest S which is the matrix sentence and the quantifier is moved to a relatively lower position in the tree. Secondly, instead of having to derive (11a) in one way and (6a) in another, as it was originally thought we would have to do, it now becomes clear that the latter sentence can also be derived by the same transformational process as immediately above. Thus from (21) we would derive:

\begin{equation}
(10.29)
\end{equation}

\begin{diagram}
S \\
NP \quad VP \\
he \quad can \ read \\
\triangle \quad NP \quad N \ P \\
any \ books \quad any \ books
\end{diagram}

The higher verb EXIST would be deleted since this is a function of all lowering transformations on an existential and it is now possible to identity-delete the second occurrence of any books, resulting in (6a).

There therefore appears to be some probability that our proposed hypothesis has some value; and from this hypothesis there follows another which may help to solve
some of the mysteries surrounding any. We have claimed that there are three contextual subgroups in which any occurs: negatives, questions and conditionals. The first two of these presumably involve higher neg and qu elements. We have now suggested that in the third case there is an if node above the existential sentence which is the basic source of any. From this we may conclude, at least tentatively, that one of these three elements, which correspond to Klima's (1964) category of affectives, must always command any in underlying structure. The interesting corollary to this hypothesis, for which we have not yet encountered any counter-evidence, is that some must not be commanded by an affective in underlying structure. Whether or not this is true we shall see below.

In order to test the validity of this proposed constraint we ought to consider the status of (7a), since apparently the only difference between it and (6a) is the some - any contrast. But we have already observed, cf. examples (15) and (16), that there is evidence that there is no conditional in the underlying structure of (7a), and therefore our predictions regarding the distributions of some and any still hold. More difficult, however, is the pair of sentences suggested by the discussion on some and any in a paper by Robin Lakoff (1969a:609-10):
If you eat some candy, I'll give you ten dollars

If you eat any candy, I'll whip you

As R. Lakoff says, the *if ... some* combination is usually taken as a promise, whereas the *if ... any* combination is taken as a threat. Thus the above sentences are often more appropriate than the pair of sentences in which the above *then*-clauses have been transposed.

R. Lakoff continues by saying (1969a:612):

"It is difficult to see how ... both the meaning and the syntactic properties could be accounted for together, and the generalisations achieved without performative abstract verbs."

So far in this study we have attempted to eschew the use of performative verbs, and so it would clearly be preferable if we could do so here, but the problem, of course, is that there is no obvious difference in structure between the two sentences above which might be related to the differences in meaning whose only product seems to be the *some - any* contrast. However, not only is there an *a priori* objection to R. Lakoff's suggestion that *some* be linked to a 'positive' performative verb of the promise-type and *any* to a 'negative' or 'neutral' performative verb of the warn-type, there is also an empirical objection. Consider the sentence:

If you eat any candy, I'll give you ten dollars
Such a sentence need not have a negative or neutral implication in order to be fully acceptable, although if R. Lakoff is right then that is most probable; it may also be construed as a plea, in which case the performative, if it exists, must be of the promise-type. The plea situation is most likely when the action described in the if-clause is thought to be unpalatable to the addressee, and if we hold to Lakoff's approach, then it would seem that the abstract performative will be dependent upon presuppositions, which hardly seems to be an economical or even fully comprehensible situation.

Given that the consequences of the performative analysis are unappealing, it seems desirable that we consider whether or not our putative constraint will do the job; otherwise we are going to be faced with the system in which there is an optional and meaning-changing 'some-any' rule. From our discussion above it follows that the underlying structure of (31) must be similar to that given in (25). There will, of course, be no intermediate structure parallel to (28), for the transformation which generates that structure, which we may call Conditional Relative Formation, crucially depends upon the presence of an identical NP in the then-clause. Since any will be commanded by if in underlying structure, the surface (31) is grammatical. But in the underlying structure of (30) if must not command some if our constraint is correct. The only
structure for (30) which is at all similar to (25) and
which will satisfy such a condition is:

(10.33)

As discussed above, especially with reference to (19),
there is some ambiguity about the relation of the pred-
icate nominal to the conditional. (33) simply repre-
sents an attempt to be consistent, even if one is being
consistently wrong.

The only plausible interpretation of (33) is along
the following lines:

(10.34) There is a quantity of candy and if
you eat that quantity of candy I'll
give you ten dollars

If we consider the remarks of Jackendoff (1972b:340) in
this context then we can see that that is exactly the interpretation of (30): 

"Some ... implies that there is a minimum expected amount below which the speaker will not accept some \( X \) as appropriate. For example look again at (30) - (31) ... In (30), you will probably get 10 dollars only if you eat at least a piece or two of candy, but not if you just nibble the corner of one piece. In (31), however, you are liable to be whipped even if you take the merest nibble."

Our analysis is simpler than R. Lakoff's performative analysis since it introduces no elements which are not otherwise needed, and, in any case, we have seen that the performative analysis breaks down in certain contexts. Jackendoff (1972b:341) also relies on semantic conditions (for this is what I take performatives to be) and is thus also more complex. On the other hand, our hypothesis only relies on the command relation between if and the quantifier. Further we have seen that everything which is within the scope of if is not asserted as true by the speaker, and this precisely and obviously relates to the remarks quoted from Jackendoff above.

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5 The numbering in the quotation below is due to the present study and not to Jackendoff (1972b).
When *some* is used the speaker asserts the existence of a certain quantity (of candy); when *any* is used no commitment to any discrete quantity is made.

Therefore there does seem to be some justification for claiming that our proposed structure for conditional sentences is adequate and is able to explain a wider range of constructions than other hypotheses. But when we come to consider questions with *any* we run into the same problem as do earlier studies. Using the structure of conditionals as our guide, we may suppose that the underlying structure of (14) – repeated here for convenience – will be of the approximate form of (35):

(10.14) Did you sell any bananas?

(10.35)
The problem does not lie in the derivation from (35) to (14), which clearly is perfectly standard; rather it is that it appears as if (35) must also be the underlying structure of:

(10.36) Did you sell some bananas?

Any structure in which the qu morpheme is commanded by the underlying quantifier-noun is strikingly implausible as a source for (36). Given that, it looks as if we shall have to modify our position in two ways: firstly we shall have to permit some to occur within the scope of an affective if that affective is qu; secondly we shall have to drop the assumption that there is a 'some-any' rule which operates obligatorily in certain contexts. This second point obviously follows from the first.

But surely this first modification is highly implausible: the condition on some is suspect because it applies to one item only; in such cases it seems more probable that it is our analysis of the item which is incorrect. Now if we recall languages such as Latin and Gothic it will be remembered that apart from a 'neutral' method of questioning, questions may be introduced by the forms nonne and num in Latin and niu and ibai in Gothic. These alternative forms suggest that it may

6 For Latin see any elementary grammar; for Gothic see Wright (1954:168, 329, 338).
indeed be the qu morpheme which is ambiguous, not the some.any quantifier. Now a very plausible method of describing the ambiguity is by using the feature [affective]. This corresponds approximately to the English sequences surely and surely... not. It may well be that the use of the feature [affective] is ad hoc, but at least it affords a temporary solution to the problem in Latin and Gothic. Now given the situation in those languages there is reason to suppose that something similar happens in English. Indeed, there is every reason to believe that this is the case, not only from an a priori desire to find universals, but also because it permits the most simple explanation of the ambiguity of (35). Instead of having to modify a constraint and reject a suppletion rule both of which have been observed to have some descriptive adequacy elsewhere in the grammar in an unmodified form, we can now explain the ambiguity of (35) as due to the ambiguity of the qu morpheme. If that morpheme is [+affective] then (14) will be generated, if it is [-affective] (35) will underlie (36). Furthermore we ought to observe the contrast in grammaticality between the (a) and (b) sentences below:

(10.37) a *Surely you sold any bananas?  
 b Surely you didn't sell any bananas?

Clearly this is to be explained in terms of the presence of a negative in (37b), but nevertheless there must be some hope that a parallel with the simpler interrogative
forms can be found. Even if there must be some considerable hesitation it seems fair to say that we can now claim that the structure underlying any in conditional contexts and that underlying any in interrogative contexts are basically similar and that the transformations and constraints which generate the correct surface structures are the same for both types. Let us now, therefore, move on to a consideration of any in negative contexts in order to see whether our hypothesis holds true for the third subgroup.

The retention of the theory that for any to be grammatical it must be commanded by an affective element in underlying structure poses no problems for the derivation of any in negative sentences. Thus, allowing for number variation, (39) is probably the underlying structure of (38):

(10.38)  I didn't see any boy(s)
If a negated quantifier lowers as described in §8.4, then (38) will be generated, unless the higher neg is lowered into the existential sentence before existential-lowering takes place, which is optionally possible. In that case we shall obtain, after lowering:

(10.40) I saw not any boy(s)

Then Klima's (1964:280) neg-incorporation rule transforms not + any into no:

(10.41) I saw no boy(s)

Notice that if the neg-incorporation rule is obligatory, and negated quantifiers are lowered as has been described, then the ungrammaticality of a sentence such as (4) - repeated here:

(10.4) *Any boy isn't sitting on his desk
is easily explained. After existential-lowering a structure corresponding to (42) will result:

(10.42) \[ \text{s}_\text{neg} \left[ \text{s} \text{any boy is sitting on his desk} \right] \]

Neg is then lowered to give:

(10.43) Not any boy is sitting on his desk

Then on that structure neg-incorporation will obligatorily operate and the grammatical sequence no boy will result, cf. (5). If any is grammatical only when commanded by an underlying affective there can be no other source for the surface negative.

We can see, therefore, that the analysis of any in negative sentences is not only compatible with, but also supports, our hypothesis about occurrences of any. But since some can also occur in negative sentences we shall have to examine those instances before making any serious claims. We need only examine two typical cases, one with some in subject position, the other with some in object position, since any other examples will fall into one or other of these patterns:

(10.44) Some boys didn't come to the party
(10.45) I didn't see some boys

The first example does not in fact present any difficulties, since it is indisputable that the quantifier will be higher than the negative in underlying structure, i.e., there is only a neg-V reading, and therefore it cannot ever be a counter-example to our theory. The
real question concerns the relative heights of the quantifier and the negative in the second sentence. If Lakoff's (1971c:244-46) claims about surface structure precedence were correct, then it would appear that in some dialects the quantifier would have to be lower than the negative in (45). But there do appear to be other dialects in which there is no reason to suppose that the quantifier could not have been higher than the negative in underlying structure. Further, it certainly seems to be the case that for some speakers (45) is at best dubiously grammatical, and these speakers seem to be those who would prefer a neg-Q reading for (45). This is exactly predicted by the constraint which we formulated in §8.4, (8.88), by which it is not permitted to lower a quantifier into a negated VP. But some cannot originate from a position lower than a neg. Thus for speakers who obey constraint (8.88) our example (45) ought to be ungrammatical. The present writer has some doubts about whether such a constraint exists in an absolute form for any speaker, but that is not crucial since it undoubtedly does exist in a milder variant which could easily introduce at least the degree of unacceptability which is regularly found with (45), see further our remarks on (8.90) in §8.4.

Since the relation of negative elements to some and any completely supports our hypothesis we may now reasonably claim that that hypothesis is correct. Thus the
position we hold is composed of the following elements. Firstly, there are three items which, if they command a simple existential quantifier-noun in underlying structure, permit grammatical occurrences of any. These three elements are if, qu and neg. Of these three only the second has an air of dubiety about it, and it must be conceded that our use of the feature [affective] to distinguish between instances of qu permitting any and those not permitting any is ad hoc. But this only implies that a better analysis of the morpheme concerned is necessary. Secondly, any does not occur grammatically if it is not so commanded. Thirdly, some is grammatical only if it is not so commanded in underlying structure. Taken together these three points lead to the fourth, which is that some and any have identical underlying structures and there is an obligatory 'some-any' rule which converts some to any in the presence of an affective. Since the rule is obligatory it cannot change meaning. Finally, the rule postulated by Klima to convert not + any sequences to no is obligatory and operates whenever such a sequence is found. The economy of this position does not stem only from the fact that some and any are given an identical underlying structure; there is also the theoretical point that we need only use meaning-preserving rules and there is no need for the additional apparatus inherent in global rules or semantic interpretation rules being introduced. This
not only permits us to constrain the formal powers of
the grammar, but it also serves to underline the auto-
omy of underlying semantic representations.

10.3 Partitive constructions

Despite the wealth of literature, if that is the
correct phrase, written on the topic of quantifiers,
remarkably little attention has been paid to the status
of partitive constructions involving quantifiers, that
is, constructions of the form:

(10.46) Some of the boys

Thus in Carden (1968) – and in his later papers – there
is absolutely no explicit discussion of differences
between partitive and nonpartitive constructions.
Jackendoff (1968) is little better in that all that he
proposes is that if is obligatorily retained if the
following NP is [+definite], unless the quantifier is
all, both or half (if the latter is indeed a quantifier),
in which case of-dropping is optional. The reason for
this lack of attention is probably that the major prob-
lems concerning quantifiers, which we have discussed in
the earlier parts of Part III, are found in the same
form in partitive and nonpartitive constructions, but
cf. Johansson (1974:26-27) and our own unsatisfactory
remarks on his argument in §8.4. Therefore the distinc-
tion between the two types is not crucial for most
purposes. Nevertheless the partitive constructions
raise a sufficient number of problems in themselves for a discussion of them to be worth-while.

The most extensive study of quantifier partitive constructions is that by Lee (1971). He proposes that a sentence such as:

(10.47) Many of the boys who live in Essex are sick

has an underlying structure of the form:

(10.48)

Lee claims that there are two general factors which support his analysis: one is that his analysis enables partitive constructions to be related to possessive constructions; the other is that it enables us to abide by the theory that conditions of entailment - "or at least compatibility", cf. Lee (1971:5) - hold between the surface structure and the constituent sentences of the underlying structure. However Hogg (1972) shows
that the first of these points is misleading in that the
relation between possessives and partitives is not as
simple as Lee assumes, and as would be necessary for his
analysis to be consequently inviting, and it is also
shown that Lee's analysis does not in fact meet the
conditions of entailment he sets down. Since Lee's
reply to this paper concedes the principle of both these
points we need not discuss them further, rather the
reader is referred to Lee (1971, 1972) and Hogg (1972)
themselves. There are also a number of other points on
which Lee's analysis could be criticised, especially in
the light of the preceding discussion of quantifiers in
nonpartitive constructions, but many of these ought to
become apparent in the discussion below. In any case
Lee (1972) is such a revision of his earlier paper, for
example he adopts to some extent the Lakoff-Carden
theory, that further remarks on Lee (1971) might be
superfluous.

Anderson (forthcoming), and, in a similar fashion
for Russian where the facts are unfortunately more
complex, Miller (1972), propose that the partitive con-
struction is the surface realisation of an underlying
'ablative' relation between the quantifier and the
'definite' NP. Regrettably, the 'translation' from a
localist framework into the one used here presents more
complex problems than were raised in our earlier dis-
cussion of universal quantifiers, and indeed I cannot
clearly see how such a 'translation' is to be effected. Rather than examine Anderson's proposals at considerable length, therefore, I wish to consider one point only. The structures given in Anderson (forthcoming) permit a quantifier partitive construction to be the complement of an existential sentence (the same seems to be true of Lee (1971), but there is no discussion of the point). Therefore they predict that (49) is grammatical:

(10.49) There were some of the boys came to the party

But most native speakers whom I have consulted find, at least, that the grammaticality of (49) is not fully apparent, and it is certainly the case that (50) is rejected:

(10.50) *There were some of the boys who came to the party

It would be extremely difficult to explain why (49) was grammatical in contrast to (50) and so we shall take the position that the former is a substandard form which we should not attempt to generate. This position is justified by the majority opinion of the grammaticality of (49), but it has to be recognised that it may be a defect of the analysis we present below that it cannot
account for (49).\footnote{Our position is supported in a negative way by the absence of the type of existential structure exemplified in (49) and (50) in the discussion of existential sentences in Quirk \textit{et al} (1972:956-62).}

In one sense, however, this stance does not appear to improve the chances of reaching a satisfactory analysis, since it presents us with a paradox. We have been able to show that the presence of an existential quantifier and the possibility of an existential sentence are mutually dependent, yet we now see that a partitive construction with an existential quantifier as its surface structure head cannot be the complement of an existential sentence. One way round this paradox would be to claim that the existential sentence is blocked by the presence of a 'definite' NP in the partitive structure. But this is unsatisfactory for two reasons. Firstly, the 'definite' NP is not the surface head of the phrase and a selectional restriction which makes no mention of a phrasal head but only of a subordinate constituent of the phrase is extremely improbable. Secondly, up to this point we have analysed the grammaticality of an existential sentence as a matter for the base; either an existential sentence is generated by the base rules or it is not, and that is the only factor at issue. Here we seem to be wanting to introduce another
factor which will determine the grammaticality of an existential sentence. This is obviously a complication of the grammar which ought to be avoided if possible.

Clearly our aim must be to justify an underlying structure in which there is no existential sentence. But the only type of underlying structure containing an existential quantifier yet not containing an existential sentence which we have so far suggested as plausible is that underlying phrases with postdeterminer quantifiers, cf. §8.3. In such cases, however, there can be no some, since the structure relies crucially on an adjectival modifier to fill the postdeterminer position. But some appears freely in partitive constructions. Also, in postdeterminer constructions the quantifier does not originate from a higher sentence, which is not the case with the present type of quantifier which displays exactly the same characteristics as does a quantifier in a nonpartitive construction. Thus we are apparently faced with two conflicting demands, that the highest sentence must contain both an existential quantifier-noun and an NP - presumably 'definite' - which would account for the lack of existential sentence.

If the existential quantifier is in the highest sentence and yet is not the complement of an existential sentence it is no more than a truism to say that it must have some other function. And if a 'definite' NP is in the highest sentence, it must be related to the
quantifier-noun in some way since the two NP's are by definition non-identical. There is absolutely no evidence that any other NP is involved, and therefore the two NP's in question must be related by some verb. At this point we may take up once more Lee's (1971) suggestion, suitably modified for our theory, that the quantifier-noun is the object of the verb HAVE which has as its subject a 'definite' NP. We need not accept Lee's use of HAVE and his remarks about possessives to agree that he is correct in his viewpoint that the quantifier partitive construction reflects a relation of set inclusion, cf. Lee (1971:9-11). This being so, it seems most probable that the highest sentence in the structure underlying a quantifier partitive construction will be one that expresses the fact that the set indicated by the quantifier-noun is included in a given set. To express this notion we shall state that the given set contains another set; this will be the highest sentence and the matrix and predicate nominal sentences should follow naturally. Thus a first approximation of the structure underlying (51) will be (52):

(10.51) Some of the boys came
However (52), which follows the same construction principles as does the structure for postdeterminer quantifiers in §8.3, example (8.42), must be wrong, for the very simple fact that it gets the semantic facts absurdly wrong. The only possible reading of (52) seems to be:

(10.53) The boys who came contain some boys

In other words, the subject of came is analysed as the 'definite' NP and not the quantified NP, whereas the reverse is the situation, as can be seen from an example like:

(10.54) One of the boys likes cheese

where the verb displays singular concord. (52) would predict plural concord. Precisely linked to this semantic error is the inaccessibility of (52) to quantifier-lowering, which must play a role in (51) equal to that played by existential-lowering in the parallel nonpartitive construction.
Instead of (52), therefore, we must have a structure in which the matrix sentence is below the quantifier-noun rather than below the 'definite' noun. That structure will look like:

(10.55)

The most interesting feature of (55) is that the structure below NP₂ is identical to the structure dominated by the equivalent NP in a nonpartitive construction. The only difference between the two NP's is that the latter is the underlying subject of EXIST whereas NP₃ is the underlying object of contains. This has the important consequence that the development of the two types of quantifier construction will be identical except in one respect: the partitive quantifier will never become the complement of an existential sentence at the surface, instead its surface realisation will reflect its underlying object position in relation to contains. In every
other respect the partitive quantifier will behave exactly as does a nonpartitive quantifier. Thus compound existentials will be possible; the relation of negatives and, indeed, other affective elements, will be exactly the same towards a partitive quantifier as towards a nonpartitive quantifier; the universal quantifiers all and each will also be generated, since it is only the structure below NP^3 which determines their grammaticality. In connection with this last point we should note that the possibility of a generic interpretation for all in a partitive construction will be excluded by the presence of the 'definite' referring NP. This will explain why in all dialects partitive all is grammatical in sentences where no generic interpretation is possible.

The principal objection to (55) must be the mechanism of quantifier-lowering. Before this transformation takes place we shall find, schematically:

(10.56)
We cannot simply lower *some* for then we would obtain:

(10.57)

\[
S \\
NP \quad VP \\
\text{THE boys} \quad V \\
\text{contain} \\
S \\
NP \quad VP \\
\text{some boys} \quad \text{came}
\]

Rather, it seems desirable that quantifier-lowering affect every node above the matrix sentence simultaneously, which means that partitive formation will occur at the same time. This makes the transformation unfortunately complex but there seems to be no alternative. And there is some justification for claiming that (56) is the structure immediately before quantifier-lowering in that we saw in §7.5 that the structure immediately preceding existential-lowering of nonpartitive *some* permitted generation of:

(10.58) There were some boys who came

The same moves in connection with (56) will give:

(10.59) The boys contained some (boys) who came

This is desirable since although (59) is scarcely acceptable there are cases involving collectives which do have that structure:
The group contained some boys who came. Presumably (60) is derived by deletion from:

(10.61) The group of boys contained some boys who came.

We have already observed in §7.3 the great similarity between such nouns and quantifiers and thus this gives substantial support to our theory and the above objection cannot be considered of sufficient weight to reject a solution which in every other respect is compatible with our previously justified theories. Most importantly, this solution explains the syntax and semantics of partitive quantifiers in a more revealing manner than has been possible with earlier proposals.

10.4 Another look at 'both'

In Chapter 4 we examined the structure of both in terms of the Lakoff-Carden theory that quantifiers are in underlying structure higher verbs. We came to the conclusion, which we shall not re-justify here, that both was a highly complex quantifier containing a universal quantifier (all), a compound existential quantifier (two) and a deictic element (the). Not surprisingly, there were a number of points on which the Lakoff-Carden theory was found to be not wholly adequate and it was impossible in that theory's terms to provide full analyses for every occurrence of both. It is
therefore desirable to attempt at this stage to see if the hypothesis which has been offered in the preceding pages is able to overcome the defects of the Lakoff-Garden theory. In a very real sense this is a crucial test, for both is clearly one of the most complex quantifiers in English, and therefore if we are successful in the attempt we shall have some justification for claiming that our hypothesis is a useful one.

It will be recalled that there are two basic structures for both, one a surface nonpartitive construction, the other a surface partitive:

(10.62) Both boys came
(10.63) Both (of) the boys came

These two sentences, it was claimed, were related by the Dual Copy transformation to (64) and (65) respectively:

(10.64) *All of the two boys came
(10.65) *All two of the boys came

Clearly the point at issue is whether or not (64) and (65) are generable, and the question of how Dual Copy operates is unimportant (here), for it is quite independent of the specific theory about the origin of quantifiers (although it does assume that underlying structures are semantic representations). Therefore we need only consider the problems involved in generating this latter pair of sentences. Given the complexity of the situation it is certainly preferable to approach it in easy stages, as it were, and so we shall consider (64)
and (65) quite separately and, furthermore, in each case we shall approach the sentence by looking firstly at its constituents.

Since (64) appears to be the simpler of the pair, let us first look at it. There is no difficulty as far as the part containing the postdeterminer quantifier is concerned, for it will have the structure outlined for postdeterminer quantifiers in §8.3. But we have not yet given in detail the structure for:

(10.66) All of the boys came

However if partitive constructions are derived from the type of underlying structure proposed in §10.3 there will be no serious difficulty here either, and the underlying structure of (66) will approximate to (67), in which, for convenience, the predicate nominal structures have been raised:

(10.67)

\[
\begin{align*}
\text{(10.67)} & \quad S \\
& \quad \text{NP} \quad \text{VP} \\
& \quad \text{THE NUMBER boys} \quad \text{V} \\
& \quad \text{contains} \quad \text{NP} \quad \text{S} \\
& \quad \text{THE SET NP} \quad \text{VP} \quad \text{S} \\
& \quad \text{THE SET BE total THE SET boys came}
\end{align*}
\]
Immediately before quantifier-lowering and partitive formation the following structure will be found:

(10.68)

Thence the structure of (66) is derived.

If we can combine (67) with the underlying structure for postdeterminer two, then we shall have the underlying structure for (64). There is in fact nothing to prevent us doing so, and the result is, in an abbreviated form:

(10.69)
After **two** is moved into postdeterminer position but before partitive formation we shall find:

(10.70)

\[
\text{S} \rightarrow \text{NP} \rightarrow \text{VP}
\]

\[
\text{THE two boys} \rightarrow \text{V} \rightarrow \text{all} \rightarrow \text{S}
\]

\[
\text{contain} \rightarrow \text{all boys came}
\]

It is clear that we can then derive the surface structure for (64) without departing from the standard generation of quantifier partitive constructions. Therefore our hypothesis runs into no difficulties with respect to the first type of both occurrence, and we may immediately move on to consider the second type, as exemplified by (65).

Before we can attempt to provide an underlying structure for this latter sentence we must first determine what its exact meaning is. There is no doubt that part of its meaning is:

(10.71) The total set of boys came

This, of course, is predicted by the claim that **all** is a lexicalisation of the total set, and our first step towards the underlying structure follows quite straightforwardly from this claim: the underlying structure of (65) must partially resemble (67). But what is the significance of the appearance of **two**? Because it
appears either at or adjacent to the head of a partitive construction there is a strong temptation to suggest that there is a coordination reduction of:

(10.72) All of the boys came and two of the boys came

But this runs into the objection that we shall then have to impose an ad hoc constraint on coordination of quantifiers, in order to block sequences such as:8

(10.73) a *Two all  
       b *All many  
       c *Many two

The only combination we find is all + numeral and the underlying structure must attempt to explain this in a non-ad hoc fashion.

A more appropriate paraphrase attempt seems to be:

(10.74) The total set of the boys came and the total set was two (in number)

It is certain that if (74) is at least fairly close to the underlying representation then we can explain why the first element can only be all. In §8.3 we discussed examples such as:

---

8 Some in some two, etc. is hardly likely to be a quantifier, among other reasons because of the ungrammaticality of the examples in (73).
(10.75) a  The number of boys is large
        b  The boys that kiss girls are many
        (in number)

The result of this discussion was that we were able to claim that such constructions were only possible if the underlying subject was THE NUMBER; if the subject was A NUMBER the resultant sentence was ungrammatical. Let us now suppose that this analysis can be extended to SET. Then we find that the structure of (74) is only possible if the partitive quantifier is all, for in every other case the underlying subject of was two will be A NUMBER, and that is known to be ungrammatical, cf.:

(10.76) *A large number of boys came and a large number was twenty (in number)

(76) would paraphrase:

(10.77) *Many twenty boys came

Although this explains why only all may be the first element of the pair under consideration, it does not explain why only a numeral may be the second element, since, as (75) shows, that part of (74) which contains the elements for the formation of two may also contain the elements for the formation of many, etc. In this connection, therefore, consider the following:

(10.78) a  The boys numbered two
        b  The boys numbered twenty

(10.79) a  *The boys numbered large
        b  *The boys numbered many
These examples suggest an interesting hypothesis, namely that the compound existentials, with the exclusion of the numerals, must either retain the elements of underlying structure, or, if they are lexicalised (to many, etc.), then all the elements of underlying structure must take part in the lexicalisation. Thus (79b) is ungrammatical because part, but not all, of the relevant structure has undergone verbalisation. The numerals, on the other hand, must be marked to show that neither of these requirements apply to them. If we can show that the derivation from the underlying structure of (65) cannot fulfil the above requirements for the development of compound existentials other than numerals, then we shall have been able to explain why the second element must be a numeral.

If (74) is indeed a reasonably appropriate paraphrase of (65), then the underlying structure of that latter sentence will be a combination of (67) and the structure of (75), given previously as (8.33). This combination will result in (80), where again we ignore predicate nominals:
Now observe the structure following quantifier lexicalisation to all:

(10.81)
It can be observed that (81) does indeed fail to meet the requirements which many imposes, for lexicalisation to all has 'robbed' (80) of any NUMBER/SET node which could combine with large. Therefore our proposed derivation does explain why the second element must be a numeral. Furthermore, since (80) - and thus (81) too - is a combination of an already existing stock of base rules and transformations, no problems arise in deriving the surface structure of (65) by means of nonrestrictive adjective formation (to give all two boys) and quantifier-lowering and partitive formation.

As we have been able to demonstrate that our hypothesis is able to handle derivations of (64) and (65) then we can also claim that it will be possible to generate (62) and (63), for all they necessarily require is the further application of Dual Copy. However it might be interesting to ask whether or not that rule should apply earlier, for this might help to generalise the possible lowering of all into different surface positions, cf. §9.4, to both. (68) supplies the necessary structure to enable the variable position of partitive all to be explained, and thus it would be disappointing if it could not be extended to both. Nevertheless we shall not pursue the question, since there are a number of minor difficulties to be cleared up, cf. Chapter 4, and we must content ourselves with the fact that our theories provide a more adequate account of both than hitherto possible.
10.5 Summary

Without prejudice to any suggestions which we might eventually have to make concerning the status of a and the in Part IV of this study, we can now claim that with the discussion of both concluded we have also concluded our study of the group of English words commonly called quantifiers. As was admitted in the Introduction and §10.1, not every quantifier has been discussed and not every quantifier construction has been examined in full detail, but as in every other matter a line must be drawn; it can only be hoped that the line has been drawn through the right points. Therefore our study has completed an important stage and it would be reasonable and perhaps useful to review briefly the main arguments and conclusions about quantifiers before we move on elsewhere.

After having first established by means of quite simple surface-biased procedures an elementary classification of quantifiers, we examined in §§7.2 and 7.3 the basic requirements which any analysis of quantifiers would have to fulfil. We were able to ascertain that base structures which closely corresponded to the eventual surface structures were quite inadequate, and thence determined that the underlying structure of some, which was taken as the most basic quantifier, has to be consistent with at least two important points: firstly,
some could not be in the same NP as its collocating NP until some point near surface structure; secondly, some ought to be analysed as an underlying noun. This position was essentially a combination of two earlier theories, one of which was the Lakoff-Carden theory that quantifiers are derived from a higher sentence, the other of which was Jackendoff's proposal that quantifiers be at least partially analysed as nouns. On the way to this position we noted that there was no need to introduce nonlinguistic elements, such as logical operators and variables, in order to establish an adequate grammar of quantifiers. After considering and rejecting a number of possible analyses in §7.4, we concluded in §7.5 that some ought to be derived from the subject noun of a higher existential sentence, that noun denoting quantity.

In §8.1 we were able to provide further semantic support for this analysis and so in §8.2 we moved on to discuss quantifiers patterning like many. We showed that the claim by Carden (1970c) that many ought to be analysed as an underlying predicate was incorrect and that instead it had a more complex structure, being derived from an adjectival modification of the quantifier-noun underlying some. This enabled us to provide an underlying structure for the simplest occurrences of many, in §8.3, and thence we proceeded to an analysis of more complex examples involving many, including its
occurrence in postdeterminer contexts. In the same section we were able to explain the occurrence of the quite large number of quantifiers which behave quite similarly to *many*. Finally in §8.4 we examined the interaction of negation with this type of quantifier. Not only were we able to show why there was no similar interaction with *some*, but we were also able to show that the interaction which did occur could be explained by using meaning-preserving transformations alone, and thus that no further accretions to the grammatical theory were necessary.

We then turned our attention to *all* and noted in §9.1 that it could not be related to *some* in as simple a manner as was *many*. Nevertheless an attempt by Anderson (1973c) to show that *all* was indeed a more complex variant of *some* was discussed in §9.2, but this attempt was not found to be convincing. A quite lengthy excursion on generics in the next section was justified in §9.4 when we returned more directly to the study of *all*. Although we discovered that the grammar of *all* was to some extent confused by its structural resemblances to apparently quite different grammatical items, for example, negatives, the basic point remained that *all* was to be derived from an underlying quantifier-noun. The parallels with other items which are not quantifiers were seen to account for otherwise idiosyncratic and inexplicable characteristics of *all*. In §9.5 we demon-
strated that only a slight modification of the basic structure for all was needed to generate each. Since these two quantifiers had an underlying structural pattern which was different from that associated with some (and hence many), they had, it was agreed, some right to be considered members of a system other than the existential quantifier system. But this was not the case with every, which, it was shown, should be related to some in the manner which was discussed with reference to all in §9.2. Thus, paradoxically in view of its semantics, every was analysed syntactically as an existential rather than a universal quantifier (but we need not accept here the usual implications of that latter term).

As was stated in §10.1, this present chapter has been in the nature of a tidying-up operation, for the items under consideration have been those which did not obviously fit into established patterns. However, we were able to determine in §10.2 that any was the result of an obligatory transformation upon some in certain syntactic environments, namely those where an affective element commanded the quantifier. Furthermore, we established that the rule converting some to any was never meaning-changing nor did it require triggering by some abstract element, contrary to earlier hypotheses. Klima's (1964) analysis of no as a conversion of not + any was confirmed. We then turned our attention in
§10.3 to partitive constructions and concluded that the distinction between these constructions and nonpartitive constructions could not be handled merely by the insertion of the. Instead it was necessary to postulate a higher sentence which made explicit the relation of set inclusion. Nevertheless the basic quantifier structure was preserved and so the earlier generalisations about quantifiers still held. Finally in §10.4 we tested our hypothesis by attempting derivations for the complex quantifier both, a test which the hypothesis passed with a modicum of success.

More generally, therefore, we may conclude that quantifiers display a striking homogeneity of behaviour. Once we accept a basic division between a some group and an all group, i.e., 'existential' and 'universal' quantifiers, we can relate every other quantifier to one or other of these groups quite simply. And both groups have in common the structure of a higher quantifier-noun which is, except in the case of the most basic quantifier some, adjectivally-modified. This means that what appear to be rather puzzling surface differences between various quantifiers can be related to one another in a concrete and simple manner. And together with simplifying the grammar of quantifiers it has been possible to note that the analysis proposed suggests that some valuable constraints on the power of the grammatical theory may be possible. Two points are especially
important. Firstly, we have observed that only meaning-preserving transformations upon a semantic base are necessary to generate the correct surface structure, and that more powerful or complex mechanisms, such as global constraints or rules of semantic interpretation, are to be rejected. Secondly, the stock of nonlinguistic items needed in the grammar is highly limited: we have used only tree-branching structures (which perhaps ought to be replaced by a dependency system, cf. Anderson, 1971a) and the nodes S, NP, VP and V, together with a very occasional use of binary features. It is to be hoped that even these latter features may be eventually excluded, and since we have paid very little attention to the verb phrase, it may be that V will also eventually be shown to be unnecessary. Of course at surface structure a greater variety of nodes may be needed, but that is neither surprising nor undesirable in view of the breakdown of general categories which occurs there, cf. Ross (1972, 1973). In this Part we have been able to eliminate the need for a special Quantifier node, in Part IV we shall consider how valid is the notion of an 'Article' node, which has already been the object of some sceptical remarks.
Part IV

English 'Article' Systems
11.1 The status of the 'articles'

In this final part of our study we shall be examining, and to some extent suggesting analyses for, two members of the determiner and quantifier systems which have not been the objects of our attention in Parts II and III; these two items are those which have been commonly called the 'indefinite' and 'definite' 'articles', namely a (or an) and the. This is not claim that a and the are not determiners, in the broadest sense of that word as defined in the Introduction; rather we are merely stating a point which has been made previously by many grammarians, that point being that a and the are not indisputably members of any of the quantificational systems discussed in Parts II and III. Indeed we were able to establish in Part I, especially §§1.2 – 1.4, that this very fact, the recognition that a and the each had idiosyncratic characteristics unshared with any quantifier, was a major factor in the establishment in vernacular grammars of 'article' as a separate part of speech in English. The syntax of a and the was such that it was almost impossible to claim either as a member of some preexisting grammatical category.
Nevertheless, the idiosyncrasies of _a_ and _the_ were not the only factors leading to the eventual creation of an 'article' class, and we were able to note in Part I that historical accident was of at least equal importance to supposed grammatical necessity, for there were the special dogmatic demands of 'parts of speech' theory. Therefore it was not surprising to note that this segregation (and, what was worse, alliance) of _a_ and _the_ led to unsatisfactory analyses of these words. Rather than repeat the arguments of Part I here, it seems reasonable to accept that their validity has been demonstrated, at least as far as some underlying level of structure is concerned. This leaves the way open for a claim that there is some justification for postulating an 'article' node at surface structure, and that, of course, would not contradict the arguments of those 'parts of speech' theorists who are basically 'surface-ist' in approach. However we shall not pursue at length the correctness of such an argument, since its status is quite marginal to the aims of this present study. The purpose of the following discussion will therefore be two-fold. Firstly we shall attempt to discover how closely related to the grammar of quantifiers are the grammatical systems exemplified by _a_ and _the_. Secondly, in so far as _a_ and _the_ demand analyses separate from that for quantifiers, as it seems, without prejudging the issues, must be the case, we shall attempt to outline
what these analyses might be. We shall not reexamine at length the notion of an 'article' system operating at some semantically significant level.

Many of the points which have been made in the preceding paragraphs are also made in a most important and enlightening study of the 'articles' by Perlmutter (1970). Thus, if we consider part of Perlmutter's conclusion we find that he says (1970:246):

"... the relation between the definite article and the indefinite article in English is quite different from what has generally been supposed. Grammarians have worked on the assumption that NP's may bear either a definite or an indefinite article, and that the two constitute some sort of opposition. If the analysis given here is correct, however, the indefinite article is simply a numeral like all other numerals, and the occurrence or non-occurrence of the definite article is a completely independent phenomenon."

Since Perlmutter's conclusion is, at least in broad outline, so similar to the points which we have attempted to establish already, it would be both foolish and churlish if we did not examine the arguments for his particular analysis of a and the in some detail. Therefore the basic approach of Part IV, and especially
Chapter 11, will be very much influenced by Perlmutter's approach, and before we consider other possible analyses we shall examine the validity of his. The most immediate consequence of this decision is that we should look at a before the, since Perlmutter has claimed a numeral-like status for that word, and this implies that its analysis is more likely to relate to the analysis of quantifiers than is any analysis of the.

11.2 Articulus numeralis

It may be recalled that in Part I we mentioned that as early a grammarian as John Wallis (1653) called a the "articulus Numeralis", stating further that it had always the same meaning as one except that it was less emphatic. Basically the same position is held by Perlmutter, as can be confirmed by the following remarks (Perlmutter, 1970:239):

"There is a variety of evidence, then, that the so-called 'indefinite article' is simply the result of a phonological rule which obligatorily converts unstressed proclitic one to an."

Before discussing what may prove to be more controversial aspects of Perlmutter's hypothesis, it is necessary to note that it seems to be undoubtedly correct that a (or an, which we take to be a phonological variant of a, occurring under easily statable conditions) is an
unstressed proclitic in the vast majority of its occurrences. The only conclusion which Perlmutter apparently wishes to draw from this is that if the is also an unstressed proclitic, then the English 'articles' will share this feature with their correlates in many other languages, cf. Perlmutter (1970:247). It may also be possible to account for the ungrammaticality of strings such as:

(11.1) *The a man who came to see me wore a red hat

in terms of a constraint on proclitic sequences, but see Perlmutter (1970:240-45) and below, §11.3. Since neither of these points is immediately crucial to our argument, we may tentatively accept for the moment Perlmutter's claim.

In order to support his thesis that a is obligatorily derived from unstressed one, Perlmutter draws upon two basic arguments. One of these is that a has the same distribution as any numeral, for example, one, two, three, etc., except in a few cases where the deviation of a is precisely paralleled by a deviation of one from that same paradigm. The other argument is that in environments where only a stressless numeral is grammatical we do not find one but rather we find a. Obviously the two arguments are closely interrelated since the second is somewhat meaningless without the first (although not vice versa); nevertheless it would be
It would appear most appropriate from the above facts that we first turn our attention to the syntactic arguments concerning the distribution of a. On this point Perlmutter's initial argument (1970:234) is that just as the phrases in (2) are ungrammatical:

(11.2) a *one blood
     b *two bloods
     c *three bloods

so too is (3) ungrammatical:

(11.3) *a blood

Now this fact can be explained in the following manner: let us accept, as we have previously claimed, that numerals are in underlying structure compound existential quantifiers. Now each quantifier has a selectional restriction or, as we claimed in §7.5, has an underlying structure of the form such that it may collocate only with a countable noun or only with a mass noun, or, in a very few cases, such as some, with either. The underlying structure of numerals, which must include a pre-lexical NUMBER, determines that numerals may only
collocate with countable nouns, in other words, the first group above, and hence the sentences in (2) are ungrammatical. Now if a is derived from one it too will only collocate with countable nouns, and thus (3) will correctly be predicted to be ungrammatical without there being any necessity to introduce a special (ad hoc) rule to cope with structures such as (3). So we may observe that treating a as a quantifier-cum-numeral enables a generalisation to be captured.

But then Perlmutter (1970:235) goes on to show that this argument, which is not precisely his, although it may be a step in the right direction, cannot be completely correct. Consider the following:

(11.4) a one seventh
     b three sevenths
(11.5) a *all sevenths
     b *few sevenths

From this we may deduce that in certain environments true quantifiers and numeral quantifiers differ crucially. And whatever the exact nature of the divide between quantifiers and numerals, it is indisputable that a is to be found on the numeral side of it; thus (6) is grammatical:

(11.6) a seventh

So far we have amassed considerable evidence to show that the distribution of a is numeral-like, and if we add two further bits of evidence then we shall see that
where one has a distribution different from that of other numerals, then a follows one. The first point is that a, like one, occurs only with singular countable nouns:

(11.7) a  one man
    b  a man
    c  *one men
    d  *a men

The second point is that in certain (near-) idiomatic expressions we find that a and one may be the only possibilities. Thus Perlmutter cites (1970:235):

(11.8) a  It was one hell of a mess
        b  It was a hell of a mess

Compare with these a substitution by some other numeral:

(11.9) *They were two hells of a mess

The above is a summary of the principal points in Perlmutter's first argument for deriving a from one. It is undoubtedly a strong argument, although there seems to be good reason for not believing it to be as strong as Perlmutter would claim. But before elaborating on that point let us see what Perlmutter's second argument is and what its foundations are, for, as we have already noted, the two arguments are not independent of one another. The simplest way to state this second argument
"English noun phrases with numerals have different possibilities of occurrence, depending on whether the numeral or the noun is stressed:

(11.10) a There are only two boys in the room, not five
     b There are only two boys in the room, not any girls

But the numeral one does not occur unstressed before a noun; instead we find the indefinite article a:

(11.11) a There is only one boy in the room, not five
     b *There is only one boy in the room, not any girls
     c There is only a boy in the room, not any girls

This suggests that English has a rule which obligatorily converts unstressed proclitic one to an, with the final n later dropping before a consonant."

Other cases which Perlmutter cites in favour of his position are those such as (8a) and (8b) where stress

1 The numbering of the examples in the quotation below is amended to follow the sequence of this chapter.
placement on the numeral is, he claims, optional, and thus both variations are possible. However let us leave aside for the moment such examples and concentrate our attention on the quotation above.

One major difficulty in assessing the validity of the argument is that judgments of acceptability concerning the examples given by Perlmutter are variable. Thus many speakers, including myself, would reject not only (11b), but also (11c). And the explanation for this is of some consequence. Consider the following:

(11.12) a There is only one black cow in the field, but there are five brown ones in it
b *There is only a black cow in the field but there are five brown ones in it
c There is only one black cow in the field, and there aren't any brown ones in it
d There is only a black cow in the field and there aren't any brown ones in it

This quadruple poses a number of difficulties for Perlmutter. Firstly we may note that in all four sentences one and a occupy relatively unstressed positions. Now if unstressed one is obligatorily converted to a, then only (12b) and (12d) should be grammatical, which is
false. However one could argue that one receives enough stress to protect it from conversion to a; this is possible since Perlmutter does not clearly define what he means by "unstressed". But in that case only (12a) and (12c) should be grammatical. As both predictions are incorrect, the only solution would appear to be that Perlmutter's rule be made optional rather than obligatory, at least if we still wish to keep such a rule at all. Now let us compare (12c) and (12d) with (11b) and (11c). The major difference between the former and the latter is that in the latter the existential of the second coordinate sentence remains, whereas in the former it is deleted. Now note that the deletion is peculiar, for the deleted existentials (there are) are not identical to their left-hand partners (there is). This would appear not only to violate deletion conditions but the resultant sentences potentially break concord rules, cf.:

(11.13) *There is not any girls in the room
It seems plausible to suggest that the explanation for the rejection of (11c) by some speakers is merely a matter of concord. It is obscure why for Perlmutter (11b) is ungrammatical and (11c) grammatical, but we may observe that concord violations are more acceptable in informal speech; thus (14) is better than (13):²

² (14) is acceptable only in the most informal styles of speech.
There isn't any girls in the room
It may be that (11c) is regarded as less formal than (11b).

Our position at this point is approximately as follows: the evidence of (11b) and (11c) is insufficiently clear-cut to provide convincing proof of the validity of Perlmutter's derivation of unstressed one from unstressed one, but even if we were to accept it, the data in (12) shows that Perlmutter's rule cannot in any case be obligatory, at best it is often optional. And here the so far unexplained ungrammaticality of (12b) is crucial. The semantics of (12b) are reasonably clear: it states that the only cow in the field is a black cow but that there are also five brown cows there; thus it is a contradiction and ungrammatical. On the other hand, (12a) is not a contradiction and not ungrammatical. The probable reason for this is that only contains some kind of operator and that in (12a) the scope of that operator extends over one but not over the existential as a whole - this is quite possible given the structure proposed for numerals in §8.3 - whereas in (12b) the scope of the operator extends over the higher existential wholly, or perhaps only over that part of the coordinate existential which does not quantity-refer, again in terms of our previously proposed structures for numerals. It does not yet seem fully determinable which of these alternatives is correct, although we shall be
able to discover below that there is a quite simple solution.

Yet the details above scarcely matter, for the important point stands out clearly: (12a) is grammatical and non-contradictory, (12b) is ungrammatical and contradictory. This being the case, (12a) and (12b) must differ in meaning. But the only surface difference between the two is that where the former has one the latter has a. If we are to preserve the hypothesis that a is derived from unstressed one then we shall have to adopt one of the following two solutions. Either we shall have to claim that the phonological conversion rule will have to be sensitive to some kind of global constraint pertaining to differences in underlying structure of the type described in the previous paragraph, or we shall have to accept that this conversion rule, which we have already observed to be optional, is also meaning-changing. We have already agreed with, and shown reasons for doing so, the claim first made by Katz and Postal (1964:32) that transformations never change meaning, and in §8.4 we cast a certain amount of suspicion on global rules; furthermore, the type of global rules which might be necessary here seems very implausible indeed. We may therefore claim with some confidence that the evidence of (12a) and (12b), together with the other evidence presented above, is such that Perlmutter's conversion rule is most unlikely to be correct.
Before we leave the question of the role of stress there is one minor point which is worth considering. Let us continue to accept that a is created by the type of phonological rule suggested by Perlmutter. If that is the case, then we must have the following rule sequence:

(11.15) i) stress assignment rules

\[\text{one} [\text{wan}] > \text{an} [\text{an}] (> \text{a} [\text{a}])\]

where stress is less than some value n.

This sequence poses no difficulties as such, but it will be recalled that not only are there unstressed but there are also stressed variants of the 'indefinite article', namely [ej] and [an], cf. Quirk et al. (1972:136) (and it should be noted that the derived forms in (15 ii) above must also undergo vowel reduction at some stage). These stressed forms occur under conditions of emphasis. Thus (15 i) and (15 ii), if more fully formulated, must be followed by two further rules:

(11.15) iii) emphatic stress assignment rules

\[\text{[a]} > [\text{ej}] (\text{a}) \quad \text{(where stress is greater than some value m)}\]

But it is clear from Perlmutter's examples, cf. (10) and (11), that he believes emphatic stress to be assigned before reduction of one to a. Thus even if it were possible to have 'standard' stress assignment rules - for example, the Main Stress Rule cited in Chomsky and
Halle (1968:72) - ordered at one point in the grammar and 'emphatic' stress rules ordered at a later stage (which, in this case, would have to be after vowel reduction rules), which is far from being established, this would be of no consequence, since Perlmutter's position demands that emphatic stress assignment occur both before and after reduction of one. At first sight this might appear to be an example of an ordering paradox, as described by Newton (1971), but this is not so. Newton is describing cases where some rule must apply both before and after some other rule in order to generate correct outputs, and this is to a large extent diachronically justified; Perlmutter is hypothesising a derivation in which in the first instance emphatic stress is deliberately incorrectly assigned in order to derive [ən] from underlying /wən/, after which the stress is reassigned correctly, in order to generate [ən]. This is a theoretically quite illegitimate practice, which has to be rejected. The conclusion to be drawn is that, quite apart from the serious syntactic objections we have raised, there is a grave objection within phonological theory to Perlmutter's hypothesis. Consequently it can scarcely be considered to be at all viable.
11.3 The inflexional status of 'a'

Since we have now been able to show that we cannot derive a from a vowel reduction rule operating on one, and thus that a cannot be analysed as the unstressed variant of one, let us now once more turn our attention to the distribution of a in order, in the first instance, to ascertain whether there are in fact any unexplained distributional differences between one and a, and thence to see if there is some non-phonological explanation for the rather close distributional parallels which undoubtedly do pertain. The great majority of facts concerning the distributions of one and a are not controversial, and therefore it would be best if we were to restate these briefly before turning our gaze upon the less settled areas. As the evidence of examples (2) - (7) shows, a has many of the characteristics of a singular quantifier-numeral, being ungrammatical in collocation with, for example, a mass noun or a plural count noun. This elementary point, it is important to note, is not in dispute, and thus any possible analysis must recognize it.

The problems arise when we consider cases where only one of the items one and a is grammatical; we have seen two examples of this so far. The first of these is in (1), where the sentence would be grammatical if one replaced a. Here, however, we were able to suggest that
this might be due to some surface constraint. Whether or not such a constraint is necessary we shall discuss below, but it will serve as a working hypothesis which keeps the area of dispute to a minimum. The second example concerns the ungrammaticality of (11b) and the alleged grammaticality of (11c). If this contrast exists it does not appear to be explicable even in Perlmutter's terms, and we have attempted to demonstrate that whatever differences there may be between the two sentences, they are probably due to factors largely irrelevant to the question at issue. Henceforth we shall therefore largely ignore both these examples and concentrate on the problems posed by further data.

One caution which it is absolutely necessary to utter before we proceed is that it must be recalled that we have already seen that it is not possible to derive a from unstressed one, as Perlmutter would wish us to do. Thus his claim (Perlmutter, 1970:238-39) that:

(11.16) He's a doctor

is derived from:

(11.17) *He's one doctor

and that (17) is only ungrammatical because in such contexts "the stress cannot fall on a numeral", fails because of the implausibility of the stress rule rather than because of any failure of plausibility in the supporting examples, given below as (18), which Perlmutter cites:
(11.18) a  They are six doctors
    b  *They are six doctors

Yet we cannot ignore the examples immediately above. Note firstly that even if in such constructions the numeral must be unstressed, a may be stressed:

(11.19) He's a doctor (but there are many others, better qualified)

Therefore if, notwithstanding our previous arguments, a is analysed as a numeral, (19) will have to be treated as an ad hoc exception. Secondly, Perlmutter's arguments all tend to suggest that if in a given language the numeral one and the 'indefinite article' are in the phonological relation of stressed and unstressed variants of a single underlying form, then no rules other than phonological should be needed to account for the distribution of the equivalent of a in that language.

We might even go further, although this is speculative, and state that if a given language has an equivalent of a, then its form will be that of an unstressed variant of the numeral one in that language. This, it seems to me, is one of the strengths of Perlmutter's hypothesis. It is of some interest, therefore, that quite unexotic languages such as French, German and Dutch bear out this very prediction. But precisely in the case of (16), where English employs a, French does not employ un, nor German ein, nor Dutch een:
(11.20) a  He is a soldier
   b  Il est soldat
   c  Er ist Soldat
   d  Hij is soldaat

Unless there is some kind of unmotivated a-deletion rule in the latter three languages, which would operate only in the restricted context of structures like (20), Perlmutter's hypothesis will predict incorrect surface structures. There may be other objections to the specific analysis of (16) given by Perlmutter, but these points above would appear to have already ruled his theory out of court.

We have above some evidence that a ought not to be analysed as a numeral; perhaps more convincing evidence is to be seen in examples such as:

(11.21) a  Many a thesis lies unread, its pages uncut
   b  I have seen many a production of Othello, but none so misguided as that last night

---

3 One possible objection is that (16) and (18a), whether or not doctors is strongly stressed, are not syntactically nor semantically equivalent. My intuitions rather fumblingly tell me that this is the case, but I have found no certain evidence to confirm or disconfirm this point.
The sentences in (21) have been chosen to suggest that many a N constructions are somewhat archaic (or simply arch), but nonetheless they are still grammatical, and ought to be analysable. Yet if a is a numeral this is virtually impossible, for we have been able to show, in § 10.4, that the only permissible quantifier + quantifier sequences are of the structure all + numeral. 4 This is confirmed by the slightly misleading statement of Quirk et al (1972:143) that "cardinal numbers and quantifiers are mutually exclusive". If we are both to uphold an otherwise valid generalisation and to generate structures like (21) without recourse to ad hoc exception statements, then we have no option but to regard a as something other than a numeral (or, even, a quantifier).

It is of no relevance that the ungrammaticality of:

(11.22) *Many one thesis

is, at first sight, explicable in terms of stress rules, parallel to (17), for the simplest explanation of the contrast between (21) and (22) is that in the former there is not a quantifier + quantifier sequence, whereas in the latter there is.

Another apparently good counter-example to Perlmutter might be thought to be:

4 We exclude from consideration possible numeral + numeral sequences such as one/a hundred and twenty, which would appear to be better analysed as single items.
(11.23) A few boys came to the party

The grammaticality of (23) as opposed to the ungrammaticality of (24):

(11.24) *One few boys came to the party

could be attributed to the lack of quantifier + quantifier sequence in the former. But (23) is probably not a genuine counter-example. If we also consider:

(11.25) A little whisky will get Bill drunk

we can observe that the collocating noun must be either plural - as in (23) - or mass - as in (25). In neither case should a be grammatical. The only reasonable explanation seems to be that a few, a little ought to be regarded as single lexical items, in which a is not to be identified with the item a which occurs elsewhere. In other words, we have a semi-idiomatic expression. I would wish further to suggest that the occurrences of a in examples (8a) and (8b) are wholly idiomatic. One reason for this is that the phrases are unalterable, cf. (9). Of course it is of some interest that both (8a) and (8b) are acceptable, and it is certainly true that Perlmutter's hypothesis, if it were valid, would be able to account for the existence of the variants in a much simpler and more general way than might be the case with some other theory; however it seems unreasonable to
place too much emphasis on an idiomatic construction.\footnote{Similarly we shall not discuss obviously idiomatic usages of \textit{a} as in \textit{of a truth}, \textit{twice a day}, cf. Christophersen (1939:126, 135-36).}

We are now, therefore, in a position to reiterate that Perlmutter's hypothesis that \textit{a} is derived by some phonological rule from \textit{one} is not only insufficiently justified but also impossible. Thus the sequence of rules in (15), demanded by his theory, is theoretically incorrect, and grammatical sequences of quantifier + \textit{a} would be predicted to be ungrammatical because quantifier + numeral sequences are in general ungrammatical. Thus we must search for some other analysis of \textit{a}. To help us in our search let us once more review the contexts in which \textit{a} is acceptable. Firstly, if the sequence \textit{Quant} + \textit{X} + \textit{N plural} is acceptable, then so too is \textit{a} + \textit{X} + \textit{Nsingular} (it is possible to phrase this more precisely, but the consequent statement is lengthy and not wholly necessary). Secondly, if the sequence \textit{Numeral} + \textit{X} + \textit{N} is grammatical, then \textit{a} + \textit{X} + \textit{Nsingular} is grammatical. We have seen that the observations made by Perlmutter are basically the same as this, but that nevertheless he is not able to account for all cases of non-idiomatic \textit{a} within his framework. The outstanding cases can be covered by the statement that if the sequence \textit{X} + \textit{Nsingular} is not internally ungrammatical and if mass...
nouns are not regarded as [+singular], then any sequence a + X + Nsingular is grammatical. This third statement, of course, is powerful enough to cover all the cases already dealt with by the first two statements. And since it is so powerful it should be easily disconfirmable if it is incorrect. We shall see below that some minor modifications are necessary, but first it is necessary to discuss potentially serious counter-examples.

One such example which ought to be examined is mentioned by Perlmutter (1970:238):

(11.26) *A boy is tall

He suggests that (26) is unacceptable because if the subject NP of a stative predicate (such as is tall) contains a numeral then the stress must go on the numeral. If Perlmutter's arguments concerning stress had been correct, but we have already seen that they are not, then the unacceptability of (26) would follow. But in any case there are examples rather similar to (26) which are acceptable, such as:

(11.27) A beaver is furry

The distinction between (26) and (27) does not seem to be wholly explicable in purely linguistic terms. All that we appear to be able to say is that (27) is interpretable in generic terms since we know (for some reason or another) that beavers are habitually furry, whereas (26) is not so interpretable since boys are not
habitually tall. From this rather vague statement we can deduce that nongeneric unquantified NP's cannot freely appear in subject position if the predicate is stative. Why might this be? If we consider two further sentences with nonstative predicates, we find that the situation is not quite as described above:

(11.28) *A boy flies to the moon
(11.29) A beaver builds dams

On comparing (26) and (28) against (27) and (29) the difference now appears to be simply that the former pair are, considered as generic sentences,\textsuperscript{6} empirically false, whereas the latter are empirically true. The former pair are therefore reinterpreted as nongeneric sentences. However, it would appear that because neither (26) nor (28) is grammatically incorrect, but merely empirically false, such reinterpretation is not permissible. It seems doubtful that the status of (26) and (28) should be predicted by grammatical rule, and therefore we make no attempt to account formally for such examples. Furthermore, it has been pointed out to me by Geoff Pullum (personal communication) that Perlmutter's claims about the ungrammaticality of (26) and (28) is disputed by many speakers. This only weakens Perlmutter's position.

\textsuperscript{6} We ignore the possibility of an interpretation of (28) - at least - as an historic present.
Another possible type of counter-example is raised by the fact, already observed, that the _a_ sequences are unacceptable; similarly _one a_ sequences are rejected. In the former case Perlmutter relies on some constraint on proclitic sequences, and in the second case he has to have a rule which he himself admits (1970:236, fn. 6) is quite possibly unique. But there is in fact an extremely simple way to generate _a_ only in those contexts where a singular countable noun occurs and yet obviate the necessity for such deletion rules as are here needed by Perlmutter. Let us accept that at or near surface structure nouns contain a feature complex which contains the information necessary for morphological rules such as concord. We have argued previously, for example in §10.2, that the use of features such as [†affective] is at best infelicitous, but it seems not only unreasonable but indeed impossible to argue against the use of low-level morphological features. Given the presence of such a feature complex, it is clear that one feature it must contain will be [†singular] (in the case of count nouns). Let us propose, therefore, a segmentalisation rule, of the type first proposed by Postal (1966:184–86), which segments the feature [±singular] by copying that feature onto a left-sister of the relevant N in the following manner:
But (30) only gives the principle of the necessary rule, and we need a more precise formulation, which will show clearly that a is segmentalised to a position to the left of any 'adjective' (including, vacuously, post-determiner quantifiers derived from an adjectival source) and to the right of elements derived from some other source, such as a higher sentence. Now it is interesting to note that the only elements which will appear to the left of a will be either quantifiers or deictics; further these items will be marked for the feature [+singular]. It will be recalled that the purpose of the segmentalisation rule is to create a segment specifically marked [+singular]. But if there is a node already present and which is explicitly marked as [+singular], for example the node which dominates one, then there is no need to have another rule to create an explicit marker of [+singular]. Thus our segmentalisation rule ought to be of the form:

7 The proposed underlying structure for quantifiers implies a feature [+singular], and deictics need a similar feature, if only to account for concord relations and morphological change in the demonstratives.
(11.31) \[ \mathcal{NP}X + \mathcal{Y} + \left[ \mathcal{N} \right] + \mathcal{Z} \] ---->
\[ \mathcal{NP}X + \left[ +\text{sing} \right] + \mathcal{Y} + \left[ \mathcal{N} \right] + \mathcal{Z} \] +\text{sing}

Conditions:
i) \( X, Y \) and \( Z \) may be zero
ii) If \( X \) is present it may not dominate \([+\text{sing}]\)
iii) If \( Y \) is present it dominates \([+\text{adjective}]\)\(^8\)

One obvious consequence of rule (31) is that the \textit{a} and \textit{one} \textit{a} sequences will not be generated by virtue of the duplication of the feature \([+\text{singular}]\), which would otherwise result. This seems intuitively satisfactory. But another more interesting fact emerges, concerning examples of the type shown in (21a) and (21b). In our discussion of these sentences we noted that the type of explanation given by Perlmutter could not possibly be applied to \textit{many} \textit{a} sequences, for reasons quite unconnected with his basic proposition regarding stress. The difficulty was that these sequences involved an apparent quantifier + quantifier sequence which is not permitted. Now, however, no such problem arises. Since \textit{many} is derived from underlying \textit{A LARGE NUMBER} it must be

\(^8\) Alternatively, condition (iii) could be handled by a global rule, if that were desirable.
[-singular]. But the collocating noun is [+]singular. Therefore, as with other [+]singular nouns, we expect segmentalisation to take place, and since many is not itself [+]singular there is nothing to block the operation of the rule, and thus such sequences are freely generated, and need not be handled as exceptions. Admittedly, we have not explained the collocation of many with a singular noun, nor shall we do so. Clearly the collocation is connected with the distributive force of many, a fact already recognised by Wallis (1653:72), but a formal explanation is at best problematical.

Finally, there is theoretical point of some interest. It is well known, see Fries (1940), that a major characteristic of the Middle English period is the rise of 'analytic' forms to replace the 'synthetic' structures of Old English. Primary amongst these analytic forms are periphrastic expressions of surface 'case' in the nominal phrase and of tense and mood in the predicate. Although no statement of the cause of this change can fail to be controversial, from one point of view we can see the periphrastic forms as fulfilling the same function as a no longer sufficiently unambiguous morphological system once did. One example of this change is the rise of a periphrastic genitive which replaces the older inflectional genitive. Fries (1940:206) gives figures which show that in 1200 only 6.3% of genitives were periphrastically formed (i.e., with of +
noun), by 1250 the proportion had risen to 31.4 %, and by 1300 to 84.5 %. It is notable that the rise of similar forms in other contexts occurred at similar dates, cf. Fries (1940), Mustanoja (1960:74-76; 95-97; 602-5). In the light of such evidence it is not implausible to suggest that the rise of a is a similar move towards periphrasis, on this occasion to express number, for this is the type of analysis which (31) implies. It is, therefore, of considerable interest to note that Christophersen (1939:103-7), in his historical survey of a, places its rise at exactly the same point chronologically as Fries places the rise of the periphrastic genitive. Such chronological coincidence can never, of course, be a definitive proof, but it is no disadvantage that our synchronic analysis of a could well be of some assistance in a diachronic explanation of the roles of a.

11.4 Two residual problems and one conclusion

The first problem which I wish to discuss here has already been mentioned in the previous sections, where, however, no adequate solution was offered. The problem centres on the fact that (12a) is grammatical whereas (12b) is not (the examples are repeated here for convenience):

(11.12) a There is only one black cow in the field, but there are five brown ones in it
b *There is only a black cow in the field, but there are five brown ones in it.

If we attempt to paraphrase (12a) we obtain something like:

(11.32) The number of cows in the field which are black is not more than one, but the number of cows in the field which are brown is five.

Taking only the first part of (12a) and omitting only, we would find the following underlying structure:

(11.33) 
```
S₀
   /  \  
S₁    S₂
   /  \    /
NP   VP  NP
   /    /    /
A NUMBER S    A NUMBER BE
            /    /
            S    VP
            /    /
            A NUMBER S
            /    /
            A NUMBER A NUMBER BE
```

The second part of (12a) will only differ from the first in the substitution of five for one and brown for black. The only point that now remains is the status of only. If we follow Lakoff (1970d:393) in his analysis of only, then we may maintain that the paraphrase in (32) is correct in so far as it shows that only modifies the
the quantifier-numeral one. It is unclear what the precise underlying structure of only is, but it is clear whereabouts in a structure such as (33) it ought to be found, namely either immediately dominating or immediately dominated by S₂. Given that, there will be no contradiction between the conjoined sentences of (12a) in underlying structure, which is the desired position.

Now let us consider (12b). If we attempt a paraphrase of that sentence something rather like the following is obtained:

(11.34) *There is no cow in the field which is not black and there are five cows in the field which are brown

How can we account for this paraphrase and the fact that (12b) is contradictory? From our discussion in §11.3 we must deduce that in the first coordinate sentence of (12b) there is no underlying quantifier, since a is a purely morphological creation. In §9.3 we saw that it was necessary to modify the original structures proposed in §7.5 in order to account for nongeneric sentences without an overt quantifier, such as:

(11.35) Boys kissed the girls

The underlying structure of the nongeneric interpretation of (35), it was suggested, would still involve a higher existential, but that existential would not have a quantifier-noun as its subject; rather the subject would simply be ones, as in (36) below. It should be observed
that *ones* is nothing more than a dummy subject, having no association whatever with the numeral *one*:

(11.36)

This contrasts with (37) and its underlying structure (38):

(11.37) Some boys kissed the girls

(11.38)

In (36) there is only a dummy subject *ones* whose only specific task is as a place-holder for the underlying predicate nominal; in (38) there is a specific reference to a quantity of boys, although the size of that
quantity is neither specified nor restricted. This seems to coincide with our intuitions about the sentences (35) and (37). From our analysis of a it follows that the deep structure of:

(11.39) A boy kissed the girls
ought to be identical to (36) except that one replaces ones, boy replaces boys. On the other hand, the underlying structure of:

(11.40) One boy kissed the girls
would be much closer to (38), although a compound existential structure would be found.

If we now return to (12b), we may infer from the above that the underlying structure of the first coordinate sentence will be, again omitting only:

(11.41)
Whether or not only is analysed into several parts, for example, along the lines of:

(11.42) There are no cows which are not ... it is indisputable that it will act as an operator over the higher existential. But in the second coordinate sentence there is no only which would so perform, and thus we obtain the contradictory:

(11.43) *There are no cows ... and there are cows

It is this contradiction which lies at the root of the ungrammaticality of (12b), and it is explicable only in terms of an analysis which denies a the status of a compound existential such as is accorded to one. Because one is a compound existential, only in (12a) does not contain within its scope — does not command — the sentence containing EXIST, and hence no contradiction arises; rather, only commands the 'adjectival' element in one. But in (12b) only must command EXIST. We may note that a similar explanation holds in the case of the simple existential some, for in:

(11.44) *There are only some black cows in the field, but there are five brown ones in it

we encounter the same contradiction as with a.

The second point which it seems useful to consider before concluding our study of a is the behaviour of so-called generic a. In a lengthy footnote, Perlmutter
(1970:239-42) presents evidence which, he claims, shows that generic \( a \) does not have the distribution which would be predicted if it were derived from the same source as nongeneric \( a \), i.e., for Perlmutter, from \( \text{one} \), for us, from a morphological segmentation rule. Perlmutter suggests that it might be more correct to derive generic \( a \) from some \( \text{any one} \) sequence. The validity of Perlmutter's suggestion depends crucially upon the grammatical distribution of generic \( a \), which we examine below, and its necessity stems from the fact that whereas a sentence such as (46) may be generic, (47) has only a nongeneric interpretation:

(11.46) A beaver builds dams
(11.47) One beaver builds dams

Naturally this forces a different underlying structure for generic \( a \) only upon the grammarian who agrees with Perlmutter that nongeneric \( a \) is derived from \( \text{one} \). We shall see below that the analysis which we have presented of \( a \) produces no such difficulties.

Let us firstly consider, however, the distribution of generic \( a \). Perlmutter's claim is that the (underlying) subject of a generic sentence belongs to one of four types, exemplified below:

(11.48) a The horse has four legs
       b Horses have four legs
       c A horse has four legs
       d Any horse has four legs
He then claims that types (c) and (d) are restricted in their distribution in generic sentences, and that the restrictions are identical for the two types. Therefore it is most economical to derive generic a from a source containing any. As far as we are concerned we ought to note that if types (a) and (b) have a distribution different from that of type (d), this is no problem, since we have already proposed quite different underlying structures for such examples, cf. §9.3 and §10.2 respectively. As a result we need only consider those examples where Perlmutter alleges that the (c) and (d) types are both ungrammatical, although the (a) and (b) types are both grammatical. Unfortunately, of the five environments which Perlmutter discusses, it seems to me (and to most informants whom I have questioned) that only one unambiguously supports Perlmutter in showing an identical distribution for a and any.  

The first of these five involves conjoined generic sentences, as in:

(11.49) a  A beaver and an otter build dams

b  *Any beaver and any otter build dams

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9 In order to avoid prejudging the issues, examples (49a), (54a) and (56a) have not been asterisked, but this does not necessarily imply that they are grammatical. The reader is referred to the subsequent comments for judgments of grammaticality.
Perlmutter claims that (49a) is, like (49b), unacceptable, but this is not the response of most informants, and any hesitation in reply is ruled out if both is inserted:

(11.50) Both a beaver and an otter build dams
Or if there is no conjunction reduction and no other transformation (of relevance), then generic a is fully acceptable:

(11.51) A beaver builds dams and a sparrow builds nests
On the other hand, generic any is at best very dubious in such cases:

(11.52) *Both any beaver and any otter build dams
(11.53) ??Any beaver builds dams and any sparrow builds nests
Thus it would appear that Perlmutter's facts are simply incorrect on this point. This also seems to be the case with his second group of examples, where passivisation has taken place:

(11.54) a Dams are built by a beaver
   b *Dams are built by any beaver
Again there seems to be no justification for asterisking (54a), as Perlmutter does; certainly there are many similar examples which are fully acceptable, e.g.:

(11.55) a Pigs are cared for by a swineherd
Shoes are repaired by a cobbler, hats by a milliner and dresses by a seamstress.

The third case presented by Perlmutter is seen in the following examples:

(11.56) a A beaver built dams in prehistoric times
   b *Any beaver built dams in prehistoric times

Here it does indeed seem to be the case that, as Perlmutter says, (56a) is ungrammatical, but what is most interesting is that if we prepose the adverbial, then both sentences are grammatical, but only (57a) has a generic interpretation, the other sentence being purely descriptive: 10

(11.57) a In prehistoric times a beaver built dams
   b In prehistoric times any beaver built dams

A fully explicit analysis of the contrasting grammaticality of (56a) and (57a) does not appear possible, but

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10 It is possible that not only is (57b) grammatical but that (56b) is grammatical also. If this is the case, then our argument is strengthened, but the question is not pursued here, where we confine ourselves to discussion of generic a.
an investigation using the notion of perceptual strategy, cf. Bever and Langendoen (1972), might be useful. As Perlmutter (1970:241) says, verbs in the past tense do not ordinarily yield generic sentences. Now it is clear that in a sentence such as:

(11.58) A beaver built the dam
that a is nongeneric. But if we revert to *dams*, this seems to be grammatical only in a generic interpretation, and even then it is distinctly unhappy:

(11.59) ??A beaver built dams
I would suggest that this is because the generic variant is in some sense marked, and that some overt clue - a perceptual device - is strongly preferred in order to point out the genericness. This clue is provided by an adverbial such as in *prehistoric times*, but in (56a) it comes too late in the sentence; only when it is preposed is the 'signal' sufficiently strong, and early enough, to enable the generic interpretation to be picked up. Obviously this is a very tentative and informal suggestion, but it does appear plausible and it does provide an explanation for the singular grammaticality of (57a), which Perlmutter entirely fails to explain. But it is in the fourth case that we may find most support for Perlmutter's position. He claims that generic *a* and generic *any* are ungrammatical in *of*-phrases, as instanced by:
(11.60) a I said of a beaver that it builds dams

b *I said of any beaver that it builds dams

Perlmutter seems to be correct in claiming that (60a) is unacceptable, but this does not always appear to be the case. Thus (61):

(11.61) ??I said of a beaver that it once built dams but that it no longer does so

seems to be slightly preferable, although substitution by any is impossible. However the situation here is too unclear to permit a satisfactory explanation.

Despite the uncertainties surrounding the fourth type of environment we have been able to establish that the distributions of generic a and generic any are not identical. Obviously this poses severe problems for Perlmutter’s hypothesis, but rather than attempt to find out whether it can be satisfactorily modified, let us consider whether there is an alternative solution consonant with our proposals in §11.3. Once we have done that we shall examine the fifth case given by Perlmutter. It may be recalled that in §9.3 it was claimed that a common property of generic sentences was the absence of a higher existential sentence. Now the derivation of
a nongeneric sentence such as:

(11.62) A horse has a white mane

is approximately as follows: the underlying representation is:

(11.63)

Then raising of the predicate nominal occurs, giving:

(11.64)

11 It might be doubted that (62) is grammatical in a nongeneric interpretation, but this is not so; however horse must normally be strongly stressed. Compare the discussion of examples (26) - (29), above.
At this stage the higher existential may be preserved, just as in the parallel derivation of quantifiers, in which case (65) results:

(11.65) There is a horse (which) has a white mane

To derive the surface structure of (62) the existential is lowered and the morphological production of $a$ follows, as indeed it does in the case of (65).

Now if we wish to derive generic instances of $a$ we need only assume that as in other cases of generic sentences there is no higher existential, which would imply that the underlying structure of a generic sentence parallel to (62), say:

(11.66) A horse has four legs

would be:

(11.67)

Such a structure has the advantages of paralleling the lack of an existential in other generic sentences and yet retaining a single type of source for $a$. It is also distinctive in structure from the types of generic
sentence exemplified by (48a) and (48b) and therefore different grammatical distributions are to be expected and will be analysable. Also, the structure of any, as we have observed in §10.2, is quite different again, and this too is desirable in the light of the evidence. A further advantage is that the underlying structure of (67), as opposed to that of (63), explains why (68), like (65), cannot have a generic interpretation:

(11.68) There is a horse which has four legs

This analysis of generic a looks, at least at first sight, to be preferable to Perlmutter's, since it makes use of quite independent generalisations and retains the single morphological rule for the creation of a. But before making that claim more definite we ought to consider the fifth case which Perlmutter claims supports his evidence. The type of paradigm is as follows:

(11.69) a The beaver is increasing in numbers
     b Beavers are increasing in numbers
     c *A beaver is increasing in numbers
     d *Any beaver is increasing in numbers


"A fourth piece of evidence for deriving
generic a from any comes from the inability

12 Although this is the fifth piece of evidence we have discussed, the original ordering was slightly different, which accounts for Perlmutter's use of "fourth".
of both to occur with predicates which require non-conjoined plural subjects and which predicate something of the entire group or class rather than of any individual in it. Not only the plural generic NP ..., but also the definite singular generic NP ... can occur with predicates of this kind."

Now it so happens that the underlying structures we have proposed for sentences of the type exemplified by (69a), (69b) and (69c) correlate exactly with Perlmutter's observation. The underlying structure of (69c) involves only a [+singular] NP with no reference to a class or set (the fact that a horse is interpreted generically, hence giving the implication of set reference, is purely a matter of the absence of a higher existential), and therefore the sentence ought to be ungrammatical since the predicate demands reference to more than one object or to a set of objects. On the other hand, it will be remembered, the underlying representation of (69a) and (69b), as developed in §9.3, includes an underlying prelexical SET, which was designed to make explicit the fact of set reference. Therefore this structure contains the element demanded of the subjects of predicates such as increasing in numbers, and the analysis predicts the grammaticality of the sentences under discussion without any modification. This fifth case of generic a, therefore, poses absolutely no problems for our analysis.
We are therefore justified in claiming that the underlying source of a is identical to that for the plural inflexion -s, save that the structure from which a derives contains the feature [+singular], as opposed to [-singular] for -s. In both cases we need a morphological rule which will segment out of the collocating noun that contrastive feature, in the case of a leftwards, in the case of the plural rightwards. Thus, in order to derive a, and this is a point of some importance, no rule is needed which is not independently paralleled elsewhere in the grammar. As we were able to observe, this was not the case with the only other proposal, that of Perlmutter (1970), which is able to dispense with the notion of an underlying 'Article' node. That Perlmutter's analysis, like ours, needs no such node in deep structure is of course greatly to its advantage, since it means that we are able further to constrain the types of structure generated by phrase structure rules or their equivalents. The crucial difference between Perlmutter's analysis and ours is that we have claimed that a is not a member of the English quantifier-numeral system, despite some apparent affinities. The difficulties, however, are such that to posit similar underlying structures for a and, say, one would require so many ad hoc constraints that the generalisation which would have been achieved would have to be regarded as patently false.
In this regard it is interesting to recall that it was rare within 'parts of speech' theory, cf. §1.4, to classify a alongside the quantifiers (which latter group, of course, was a source of considerable difficulty). In view of the evidence which we have considered, this decision seems to have been correct. On the other hand, we observed that it was common — indeed, almost exceptionless — to consider a and the as a complementary pair. In our earlier discussions we criticised this at some length. Now, by our implicit contrast between a and the plural morpheme, we have virtually excluded any possibility of a and the being in such direct contrast. It therefore behoves us, before we conclude this study, to attempt at least a preliminary analysis of the which should be sufficient to establish its status in some tentative fashion, although it cannot be hoped that we shall provide a definitive solution to such a recalcitrant object of study.
Chapter 12

The 'definite article'

12.1 The status of 'the'

Notwithstanding the considerable puzzlement to which the behaviour of the gives rise, there can be little doubt as to its basic grammatical status. In other words, the difficulties in analysing the are not due to the fact that it stands alone, having no associations with any other linguistic item, rather they are due to the fact that the larger class of which the is a member is as a whole difficult to analyse formally. But even if a primary classification of the is relatively simple, it is necessary to discuss it at least briefly, because if we are fairly sure of such a classification then there will be rather more evidence that might help in solving the larger problems still to be faced. In the light both of our earlier discussions and statements by previous grammarians about the, it seems reasonable to suggest three possible classifications of the: it might either be a quantifier, an 'article' or a deictic. Let us now examine the attractiveness of the competing claims.

Since the greatest part of this study has been concerned with the grammar of quantifiers, it is perhaps most convenient to start by considering whether the
might be regarded as a quantifier. But this need not detain us for long, for the evidence against any such position is extremely strong, indeed so strong that a discussion of three quite simple matters will show that the behaviour of quantifiers and the behaviour of the contrast so sharply that a common analysis would not only be fruitless, but also misleading. The first of these points concerns the fact that in §10.4 we were able to show that the underlying structure of quantifiers was such that the only permissible quantifier + quantifier sequence was universal quantifier + numeral. In Chapter 11 we were further able to point out that some apparent counter-examples to this hypothesis were false. Now if the were a quantifier the number of grammatical quantifier + quantifier sequences would be greatly increased, for structures of the type in (1) are fully acceptable:

(12.1) The many boys came to the party

We have already suggested an analysis for such structures, in §8.3, but there, although the remained relatively unanalysed, it did not have a quantifier-like status. Obviously it would be possible to amend that analysis, but then some other explanation for the grammaticality of (1) would have to be found. It is surely simpler to preserve the already suggested structure for postdeterminer quantifiers, together with the generalisations it encapsulated, than reanalyse the and then be
forced to find another, possibly ad hoc, explanation for the + quantifier sequences in which the was taken to be a quantifier itself. The explanation for their grammaticality would be quite different from that for, for example, all six, since the collocational range is quite different.

The second distinction between the and quantifiers which we shall discuss concerns the presence or absence of some trace of a higher existential. We have already seen that all quantifiers except those which we have called "universals", e.g., all, may function as the complements of an existential predicate when they are interpreted nongenerically; but this is never the case with the:

(12.2) a There were many boys came to the party
   b *There were the boys came to the party
This could, of course, imply that the is a universal quantifier, but it has none of the freedom of surface position which is such a dominant characteristic of the universals:

(12.3) a Boys all like cheese
   b *Boys the like cheese
And so it hardly seems possible that the is a universal quantifier. Since the behaviour of the in these circumstances is comparable neither with an existential nor
with a universal quantifier — the only two types we have so far been able to discover — it is all the more improbable that the is a quantifier. And the third point for discussion confirms this, for it is that the semantic status of the is quite different from that of any quantifier. All quantifiers in one way or another convey information about the number or quantity of objects referred to by the collocating noun. Thus the question:

(12.4) What number of boys came to the party? however inelegantly it may be phrased, can be answered by a quantifier collocating with boys:

(12.5) a Many boys
b Six boys
c All the boys

In contrast, it would be utter nonsense to reply:

(12.6) The boys

This can only be because the semantic information requested in (4) is not provided in (6); and the reason for

1 But that is not to say that every quantifier can be used to answer the question. Thus some, deriving as it does from A NUMBER, will be inappropriate, for it conveys no new information. And we can also observe, as in the case of (5c), that some quantifiers demand slight variation from the norm. Neither of these points, however, can be considered as significant.
this must be that the is quite different semantically from any quantifier. Since the is therefore seen to be both semantically and syntactically completely distinct from any quantifier, we must reject any analysis which might in any way imply the opposite.

As the cannot possible be a quantifier, might it not be an 'article'? Now the problems raised by this question are of an order quite different from that above. In traditional English grammar, cf. §1.4, and indeed up to and including Chomsky (1957), if not beyond, the class of 'articles' has generally been understood to include two items only, namely the and a. But in Chap-11 we were able to demonstrate that a was a morphological item whose primary contrast was with the plural inflexion. Whatever the contrast between it and the, and it seems highly unlikely that there could be one, it must be only very subsidiary. That being the case, it can only be misleading to claim that there exists the primary relation implied by the labelling of these two items as 'articles'. From this it follows that if we remain true to the traditional classification then the must be the only member of the 'article' class. But this is only unenlightening, for we are in search of relations which exist between the and other words in the language, we are not attempting to establish the lack of such relations. Of course, there may be no important connections, but we should not give up the search
because of an unfortunate stipulation.

Yet it is still possible to maintain fruitfully that the is an 'article'. The most important representative of this approach today is Paul Postal, who writes (1966:179):

"... my basic claim ... is that the so-called pronouns I, our, they, etc. are really articles, in fact types of definite article."

To a certain extent, and we have already pointed this out, cf. §1.2, this is reminiscent of the original Aristotelian approach, in which 'articles' and 'pronouns', in present-day terminology, were then classed together as arthra, i.e., articles. We shall not discuss the merits of Postal's specific analysis here, for it has been convincingly refuted by Delorme and Dougherty (1972) and Sommerstein (1972), although from quite different theoretical bases. As far as we are concerned Sommerstein's arguments are the more interesting, because he suggests that the correct relation between the and pronouns is a mirror image of the one presented by Postal; in other words, it is not the case that

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2 See too Kjellmer (1971:44-45) for a defence of what Postal (1966:177) calls "our traditional lore about English grammar", e.g., the work of Jespersen. Even for Postal it seems a little brash to relegate Jespersen to a purveyor of old wives' tales.
pronouns are underlying 'articles', rather that the is an underlying pronoun. We shall examine Sommerstein's analysis more closely in §§12.2 - 12.3, but we may note one immediate advantage: whereas Postal, by retaining the concept of 'article', is still committed to a contrast between a and the, cf. Postal (1966:179), Sommerstein does not need to introduce such a contrast, and, indeed, never does so; from the evidence both of this section and Chapter 11 above, this would appear fortunate.

Whether or not the and the pronouns are to be assigned an identical underlying structure is, however, a rather technical point at present; what is more relevant is that they are certainly closely related. And there is already at hand a grammatical notion which will relate the two (sub-) categories, namely deixis. We may define deixis as the linguistic feature which serves to relate lexical items to the situation of utterance. Thus I signifies the speaker of the utterance, now signifies that an event described in the utterance is taking place at the time of uttering, and there signifies that some object or action mentioned in the utterance is at some place other than where the utterance is deemed to be being made, cf. Lyons (1968:275-76). Within this general class we can easily perceive a subclass of three items including the 'definite article', namely the, this and that. They are indisputably
deictics, not only by virtue of their semantics, but also because of their clear surface relation in many languages to the pronoun system, see Lyons (1968:279). And what we may call their internal semantics is no less certain: this normally implies proximity, that implies distance, and *the* is the unmarked member of the trio.\(^3\) In this respect we may note the possible collocations of the contrasting deictics *here* and *there*, especially in colloquial forms of English:

(12.7) a) this here book  
   b) *this there book  
(12.8) a) *that here book  
   b) that there book  
(12.9) a) *the here book  
   b) *the there book

We shall discuss some further examples of this below.

The classification of *the* as a deictic may be objected to on the grounds that it is no more than a terminological variation on the theme, already briefly mentioned, that 'articles' are really pronouns (or vice versa). Against that we may firstly note that since it is not certain that all deictics are pronouns, although all pronouns are deictics, we can claim to have asserted

\(^3\) We should observe that "proximity" and "distance" are not necessarily used spatially, for the relation may also be temporal.
a wider linguistic classification. And secondly, although it may be true that the two (sub-) classes of the and the pronouns are closely related, it does not necessarily follow that they ought to have virtually identical underlying structures. Clearly it would be desirable if their underlying structures were not totally dissimilar, but surely we ought not to go so far as to assume such identity, at least at present and in view of the number of distributional contrasts. For example, whereas the can freely collocate with a dependent restrictive relative clause, pronouns do so regularly only under a generic interpretation (this and that are rather more complex in their distribution):

(12.10) a The man who was wearing a hat yesterday is actually bald
       b *He who was wearing a hat yesterday is actually bald

Secondly, and relatedly perhaps, in certain contexts the may appear with the first mention of a noun, whereas a pronoun cannot (at least, if it is a third person pronoun), compare:

(12.11) a The man came down the stairs; he was wearing pyjamas
       b *He came down the stairs; the man was wearing pyjamas

Thirdly, the must always collocate with some noun, this or that may do so, but he, she and it can never do so,
pace Postal (1966:191). Alleged counter-examples are either better analysed in some other way, as with we men, or they are not true examples of pronouns, e.g., she-wolf. We ought neither to deny that the and the pronouns are related, nor to claim that they are identical. The classification of the as a deictic enables a middle position to be established, and the grouping of the with this and that, under a general heading of 'demonstratives', seems a more fruitful starting point. We must not take the unity of pronouns and demonstratives as an a priori.

12.2 'The' and relative clauses

Apart from the other demonstratives, there is another group of deictics with which the has an especially close relation, and that is the group of relative pronouns. In particular, historically the can be paradigmatically and (probably) analogically connected with the demonstrative that, which is also the historical source of the relative pronoun that, and we may also note that in, for example, German, there is a formal identity between the 'definite article' and the relative pronoun, cf. §1.2. It has further been observed by a number of scholars that this connection is reinforced by some distributional features of the, more specifically that in certain cases the may only occur with a noun which has a dependent restrictive relative clause or
phrase, and that in other cases what Robbins (1968:236) calls a Right Adjunct to a noun demands the presence of a collocating the. An example of the first type involves proper nouns: the cannot normally collocate with a proper noun, but this condition does not apply if there is a dependent restrictive. Compare the examples in (12) with those in (13):

(12.12) a *The Edinburgh is fast falling into ruin
       b *The Edinburgh was an intellectual centre of the world

(12.13) a The Edinburgh that I know is fast falling into ruin
       b The Edinburgh of David Hume was an intellectual centre of the world

An example of the second type is found in the occurrence of sentence complements, which can only cooccur with the + noun:

(12.14) a *A fact that John likes cheese is irrelevant
       b *That fact that John likes cheese is irrelevant
       c The fact that John likes cheese is irrelevant

A third factor which links the with relative clauses is that an NP with anaphoric reference (signalled by the,
cf. §12.3) cannot have a dependent restrictive relative. Thus in (15a) the referents of the two instances of flowers cannot be identical, although the second set of referents may be a subset of the first set. On the other hand, anaphoric reference is perfectly possible in (15b) where the relative clause is nonrestrictive:

(12.15) a There were many flowers in the
garden and I picked the flowers
which were pretty
b There were many flowers in the
garden and I picked the flowers,
which were pretty

Given the obviously close connection between the and restrictive relatives, it is therefore not surprising that most recent discussion of the has attempted to justify a derivation for the which involves relativisation. There have been three principal attempts to do this: one by Vendler (1967) and Robbins (1968); another by Thorne (1972, 1974); and a third by Sommerstein (1972). Let us examine each of these in turn.

4 Neither sentence in (15) is particularly elegant, and this appears to be for two reasons. Firstly, a sequence of two lexically identical and (partially) referentially identical nouns is normally avoided by a deletion rule; secondly, second mention of a noun usually demands this, that or a pronoun, rather than the.
Since the proposals of Vendler and Robbins have already been discussed in §3.4, we need only be quite brief, but they are worth discussing once more, both because of the further evidence we have been able to obtain and also because their suggestions are very similar to the others which we shall discuss and to that of Perlmutter (1970), whose approach, indeed, is perhaps insufficiently distinguishable to merit separate close analysis. We may remind ourselves of the position adopted by Vendler and Robbins by requoting their own remarks. Vendler (1967:46) says:

"The definite article in front of a noun is always and infallibly the sign of a restrictive adjunct, present or recoverable, attached to the noun."

Robbins' hypothesis is in principle the same, but more detailed in its formulation (1968:54):

"Determinative the is always indicative of sentence combination: either a noun-sharing combination of one sentence with a transformed other sentence, or the inclusion in a Pred of a sentence nominalized into a definite noun-phrase ... In this essay anaphoric the is treated as a special kind of occurrence of determinative the."

If we convert these remarks into formalised generative grammar, it would appear that the is to be introduced by
the relativisation rule which raises the relative clause into the matrix sentence; this is also the suggestion of Perlmutter (1970:241-43). There are two problems with such a hypothesis, one concerning anaphoric the, the other concerning what we shall call, following Smith (1963:15), cataphoric the, that is, occurrences of the which appear to be induced by a restrictive clause or adjunct. Let us consider the cataphoric instances firstly.

The problem here, already noted in §3.4, is that the is not obligatory when there is a restrictive clause. Therefore both (16a) and (16b) are grammatical:

(12.16) a I know the girl who is wearing a red hat
       b I know a girl who is wearing a red hat

If the is introduced by a relativisation rule it will therefore, apparently, have to be optional. But the two sentences in (16) are different in meaning. Thus it would seem to be the case that the-formation is an optional meaning-changing rule. Vendler (1967) notes both this problem and the problem that in certain cases the-formation is obligatory: witness the unacceptability of (17b):

(12.17) a I know the man who killed Kennedy
       b *I know a man who killed Kennedy

Vendler's explanation is as follows (1967:50-51):
"Since the verb kill suggests a unique agent, 
the definite article replaces the indefinite one, and we get (16) [= (17a):RMH]. If the 
relevant verb has no connotation of uniqueness, no such replacement need take place; 
for instance,

I know a man who fought in Korea.

Of course we can say, in the plural, 
(17) I know the men who fought in Korea.

In this case I imply that, in some sense or 
other, I know all those men. If I just say 
I know men who fought in Korea 
no completeness is implied; it is enough if 
I know some such men."

What Vendler would appear to be suggesting is that we 
attach a feature [+unique] to the relevant NP; if this 
feature had the value [+unique], then the-formation 
would follow. Assignment of plus values for this feat-
ure would be due either to selectional restriction rules 
or to some arbitrary situational relation. The unsatis-
factoriness of this as a solution is that [+unique] is 
no more than an ad hoc intermediary in the process of 
deriving the. Although the-formation itself will no 
longer be meaning-changing, there will still be a mean-
ing-changing device present, namely that which would 
assign [+unique] in, say, (16a) as opposed to [-unique] 
in (16b).
Nevertheless, Vendler's observation that the indicates a unique referent for the collocating NP and that such uniqueness may be determined by the internal semantics of the relevant structure is sufficiently acute to demand that it not be ignored. What we ought therefore to attempt to do is to find an underlying representation which explicitly demonstrates that in a sentence such as (16a) the referent of girl is uniquely defined, whereas that is not the case with the referent of girl in (16b). If we are able to do this we shall not need any meaning-changing transformation, although it still remains an open question whether or not it will be possible to formulate a plausible derivation to the given surface structure. Now at first sight a reasonable paraphrase of (16a) appears to be:

(12.18) I know a girl who is wearing a red hat and only one girl is wearing a red hat

But (18) can hardly be regarded as a putative source for the underlying structure of (16a). The principal reason for this is that the second conjoined sentence is most probably a nonrestrictive clause and that therefore (18) is a better paraphrase of:

(12.19) I know the only girl who is wearing a red hat

If we attempt to remove the nonrestrictive element in (18) we are no further forward, for in:
I know a girl; only one girl is wearing a red hat.

The identity conditions which hold for relativisation, namely lexical and referential identity between the antecedent and dependent NP's, do not both hold, for at least lexical identity fails. From the failure of these attempted paraphrases which explicitly state, by only, the element of uniqueness discussed by Vendler to provide any possible underlying structure for cataphoric the, we may reasonably conclude that a plausible solution to the problem will have to come from some quite different source. Let us therefore turn our attention away from cataphoric the for the present, in order to consider briefly Vendler's and Robbins' approach to anaphoric the.

Our earlier discussion of those works and the quotations from them given above make it clear that both Vendler and Robbins assign to anaphoric the a status identical to cataphoric the. Since the latter is derived by relativisation so too must the former. But no anaphoric the cooccurs with a restrictive relative, cf. examples (15). Their solution is to assume a deleted restrictive relative, identical to the sentence in which the collocating NP is first mentioned ('indefinitely'). Apart from several other disadvantages which we noted in §3.4, this suggestion has the fatal flaw that it cannot account for anaphoric the in a sentence such as:
When John arrived at the hall, the lecturer had already been speaking for 15 minutes where the anaphora is due to hyponymy rather than repetition. And so, even if we do eventually find some solution to cataphoric the involving restrictive relatives, it will not be possible to extend it to anaphoric the. Since it appears that the work of Vendler and Robbins, despite their interesting observations, does not offer any immediate hope of resolving the issues at hand, we shall now move on to examine the proposals in Thorne (1972, 1974).

In one aspect Thorne's analysis of the is very like that of Vendler and Robbins, in another it contrasts. The similarity is that Thorne also associates occurrences of the with restrictive relatives; the contrast is that he apparently deals only with anaphoric the. Thorne's position is as follows (1972:563):

"Essentially my proposal concerning noun phrases like the man is that they should be derived from underlying structures containing a deictic sentence as a relative clause attached to the noun, deictic sentences being sentences like There is a Lotus Elan, which I assume has an underlying form equivalent to A Lotus Elan is there. Thus the underlying structure of the man would be
Thorne (1974:111, fn. 1) suggests that some modification of this will be necessary, but that is basically unimportant for our purposes. The transformations which produce the surface string the man are, Thorne claims, similar to those required elsewhere in the grammar. The major problems of Thorne's analysis appear to centre upon there. Firstly, no distinction is made between existential and locative there, yet this decision seems vital, cf. §7.4 and Allan (1971, 1972). The main result here is confusion, but it appears most profitable (if not necessary) to accept that there is a distinction to be made and thence assume that Thorne is employing locative there only. This agrees with his remark (1972: 563) that there is the locative form of the item which has the nominative form of the. But this leads to the second problem: if there is none other than the locative of the, then Thorne's underlying representation is alternatively expressed prepositionally, i.e., as:
This reveals the basic circularity of Thorne's proposal: surface the is derived from an underlying the in the locative case.

However Thorne has an interesting argument in favour of his position; it is that by establishing a relationship between the and there we can account for the semantics of the in as far as it relates to the presence (physical or mental) of the referent of the collocating NP. Indeed the position is more interesting than that, for that can be related to there, this to here, and the to either there or here, cf. examples (7) - (9) and the discussion in §12.1; also note that there are further possible collocations:

(12.23) a  This table here
    b That table there
    c The table here
    d The table there

The advantage here is that we are able to relate the directly to this and that, and all three to other members of the deictic system. Yet this is scarcely an
adequate justification. If this is derived from here, i.e., at this, and that derived from there, i.e., at that, to claim that the is derived from there is to claim that it is some variant of that. This Thorne does (1972:565). But the evidence of (23c) suggests that it is an unmarked variant of either this or that, and despite his footnote referred to above, Thorne does not suggest an analysis which will explain this. Furthermore, consider the difference between an analysis which generates this, that and the directly and Thorne's analysis. In the former case there will have to be some ad hoc feature assignment which will state the semantic differences between the three; in the latter the same procedure will have to apply to this and that. The only advantage this latter has is that there will not have to be a repetition of the assignment to the adverbials. But that would not be the case if here and there were derived from this and that, and the problems caused by the grammaticality of both (23c) and (23d), rather than just one of them, would be solved by considering the as the unmarked member of the triple. We thus retain the generalisations noted by Thorne, without at the same time having the problems which his analysis has.

We would appear, however, to lose one important advantage, namely that Thorne's analysis preserves the connection with restrictive relative clauses. Yet this may not be the disadvantage it appears to be. As we have
already stated, Thorne does not discuss the status of cataphoric the. But it seems probable that he would derive all instances of the in the manner described above. Now it looks as if this would help to solve a difficulty we have discussed already, namely how to distinguish between sentences of the types (24a) and (24b):

(12.24) a A girl I know kissed Bill  
       b The girl I know kissed Bill  

(24b) would have an additional restrictive relative in underlying structure, along the lines of:

(12.25) Girl who is there who I know kissed Bill  

But (25) raises an important problem, which is whether the relative clauses are 'stacked' or conjoined. 5 If the relatives are stacked, then the underlying structure of (25) is schematically:

(12.26)  

If the relatives are conjoined, then the structure is as below:

5 For a good discussion of stacking see Stockwell et al (1972:442-47).
Now if (25) is analysed as an example of stacking there are no major problems with Thorne's probable analysis as such. However there are some strong arguments against the stacking proposal. Thus we have observed that NP's with anaphoric reference cannot have a dependent restrictive relative, cf. the examples in (15). Let us now assume that cataphoric the is introduced by a so far unformalised rule of relativisation of relative clauses. If we can accept the conjunction analysis then we can generalise our constraint on the collocation of the with such relatives as follows:

(12.28) No string of the structure:

\[ [N_p \{N_P \text{the} + W + N_1 + X \} [S_1 [S_2 \text{wh-N}_2 + Y]Z]] \]

is grammatical unless relativisation and the-formation has applied, where \( N_1 \) and \( N_2 \) are identical. If \( Z \) is zero then \( S_1 \) is also zero.

(28) states nothing other than that the + N sequences may not have a dependent restrictive relative clause unless that the has been introduced by the relativisation
transformation on that restrictive clause. Under the conjunction analysis if there is more than one restrictive clause they will be conjoined and only one relativisation will take place, thus meeting the constraint. However under the stacking analysis more than one relativisation transformation takes place, since it is cyclical, and (28) cannot reasonably apply, without being stated in an over-complex manner.

Let us accept, therefore, if only for the sake of argument, that the conjunction analysis is to be preferred. Thus the two relative clauses in (25) are conjoined. Now Ross (1967: §4.84) has postulated a Coordinate Structure Constraint which is as follows:

"In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct."

In other words, if two sentences are conjoined in underlying structure, it is not permissible to cause one of these sentences to be moved out of that coordinate structure. But if (24b) is to be derived from (25) when that sentence has the initial structure to which (27) approximates, then Ross' constraint is violated. Therefore Thorne's proposal demands that the relative clauses be stacked. And then, of course, constraint (28) cannot be retained.
But in support of the stacking hypothesis it is possible to quote:

(12.29) The pretty girl who kissed Bill came to the party

where both pretty and the full relative clause are apparently restrictive. If they are conjoined in underlying structure, then the Coordinate Structure Constraint is again violated. But intuitively it seems as if in (29) the phrase girl who kissed Bill is an anaphoric subset of the set previously referred to by:

(12.30) girls who kissed Bill

Such an intuition cannot be captured either by the conjunction or by the stacking proposal, both of which treat the restrictive adjective and the restrictive clause on the same level, i.e., as 'new' information. Indeed there does not seem to be any current proposal which adequately differentiates the two. Perhaps one way to do this would be to consider the relative clause in (29) as immediately dominated by the same NP node as dominates the N dominating girl. Thus (29) would have the structure of (31), in which for ease of presentation NP₃ has been omitted; it is identical to NP₂:
If something rather like (31) can be accepted as the underlying structure of (29), then that sentence will not contain a violation of the Coordinate Structure Constraint. But that point, important and uncertain as it is, will not be further discussed here, since it is of more relevance to note that (24b) – derived from (25) – is quite different from (29) in its implications. (29) implies that more than one girl kissed Bill (although only one of them was pretty); in (24b) there is no implication, indeed there is a denial, that I know more than one girl who kissed Bill. The semantic difference ought, we may suggest, to be expressed by a difference in underlying structure. Hence non-violation of Ross’ constraint by (29) has no implications for Thorne’s analysis of (24b). In its turn, therefore, (25) can only be assigned an underlying structure of stacking, i.e., (26), if it is not to violate the constraint in question. But this renders the constraint (28) unstatable. Therefore the Coordinate Structure
Constraint carries insufficient weight to support stacking. And in addition to the evidence already discussed which supports conjunction, there is the further point that apparently many speakers reject all cases of stacked relative clauses, see Stockwell et al (1972:443). For such speakers, Thorne's analysis seems to predict that (24b) will be ungrammatical, which is indisputably incorrect.

Since the problems surrounding Thorne's proposal are so great that it is improbable that it can be acceptably modified, let us now turn to a consideration of the third attempt to link the to relative clauses, that of Sommerstein (1972). Basically his proposal is that an NP such as the man has the underlying structure of a complex NP whose head is a pronoun with a dependent restrictive relative which is a predicate nominal (1972: 198). In other words, it is of the form:

(12.32)

\[
\text{NP} \\
\text{[+pro]} \text{NP} \text{S} \\
\text{[+wh]} \text{[+pro]} \text{NP} \text{VP} \\
\text{BE} \text{man}
\]

Sommerstein's proposal has two clear advantages over those which we have discussed above. The first of these is that by introducing an underlying pronoun as part of
the source for the, the relation between the and the other deictics is more explicitly stated than in the analyses of Vendler and Robbins and yet it avoids the circularity found in Thorne's work. Secondly it permits us to generalise the claim of Bach (1968) that all nouns are derived from predicate nominals, which so far we have been forced to restrict to 'indefinite' NP's, to NP's containing the. Apart from its other advantages, this enables us to contrast the and a in an interesting way. The underlying structures of the two sentences:

(12.33) A lamb ran across the field
(12.34) The lamb ran across the field

will be (35) and (36) respectively, ignoring the structure of the VP, cf. §11.4:

(12.35)

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(12.35)
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(12.35)
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There are only two differences between (35) and (36), and these are not only related to one another, but they can be shown to reflect the semantic and syntactic differences between (33) and (34). Firstly, there is a higher existential sentence in (35) which is absent in (36). But this explains the difference in grammaticality between (37a) and (37b):

\begin{align*}
(12.37) \quad & \text{a} \quad \text{There was a lamb ran across the field} \\
& \text{b} \quad *\text{There was the lamb ran across the field}
\end{align*}

It also clarifies a semantic distinction, namely that the referent of a lamb is 'new', whereas the referent of the lamb is 'given', that is to say, in the former case the speaker assumes no knowledge on the part of the hearer regarding the referent of lamb, whereas in the latter case he assumes that the hearer has (been given) sufficient information already to pick out the exact referent. In the situation where the referent is 'new',
and the hearer is assumed to be ignorant of it, one of the purposes of the higher existential is to assert that there actually is a referent. Clearly this is redundant in the case of a 'given' referent, and therefore in such a case no existential is present. Therefore this first contrast between (35) and (36) is syntactically and semantically justified. The second difference is that where (35) has the dummy place-holder one, (36) has a pronoun. Now one, being a dummy, is devoid of any semantic meaning, which relates closely to our theory that a is a purely morphological, and hence semantically empty, creation. On the other hand, the underlying pronoun in (36) has the semantic implication of previous reference, which of course is inherent in the description of the occurrence of this the as anaphoric, and the description of the referent of the lamb as 'given'.

Syntactically, as Sommerstein (1972) shows, the similar behaviour of the + N phrases and pronouns is thereby explained, and the predicate nominal structure of the noun is accounted for. Further, Sommerstein (1972:205) suggests that this and that may be derived from a further clause containing here and there respectively, in a very similar way to Thorne (1972, 1974). But the rather different underlying structures and transformations employed mean that this does not appear to violate the Coordinate Structure Constraint, and since the is not derived from there it avoids some of the other problems in Thorne's proposal.
In the following section we shall see that there are a number of other advantages held by Sommerstein's hypothesis, but we have already been able to give sufficient evidence not only to demonstrate that his is the most successful of the three attempts to provide an underlying source for which we have examined here, but also to suggest that it may indeed be the nearest approximation to a solution that we can find. However, this is not to deny that it has its own problems, and we shall look at some of these below, when we examine how satisfactory it may be as an explanation of occurrences of the other than the purely anaphoric.

12.3 Anaphoric, ecphoric, cataphoric and generic

The various discussions of which we have considered, and perhaps even our own discussion, tend to suggest that there are four different linguistic sources for these are anaphora, ecphora, cataphora and genericness. The first three have in common the feature that they are processes by which an NP is 'defined', i.e., that enough information is believed by the speaker to have been given to the hearer to permit the speaker to assume that the hearer can determine uniquely the referent(s) of the NP which the speaker has in mind. The normal, but not exclusive, linguistic sign of this process is the. Anaphoric reference is reference to some already mentioned object; the previous reference
may be either in the same sentence or earlier in the discourse, and it is interesting to note that if the previous reference is in the same sentence or one sentence immediately before there is normally some pronominalisation process - which may account for the unusual restriction by Dougherty (1969:488), cf. §4.4, of anaphora to within one sentence. The use of the with the NP in question is typically restricted to previous reference over one or (preferably) more sentence boundaries. Thus compare the sentences below:

(12.38) a A lamb decided it would run away
   b *A lamb decided the lamb would run away

(12.39) a A man shot himself
   b *A man shot the man

Since the (b) sentences are grammatical, although very strange in interpretations where there is no referential identity between the noun phrases, this discrimination is a useful disambiguation of two anaphoric processes. Ecphora, cf. §3.2 and Smith (1963:17), is previous reference due to the context of situation. This is best seen by example; in (40):

(12.40) The sun was shining yesterday

sun can only be regarded as being 'defined' by the

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6 The referents of _a lamb_ and _the lamb_ in (38b) are taken as identical here; similarly for _a man_ and _the man_ in (39b).
situational fact that for most purposes it is assumed that there is only one sun (the physical existence of other suns being irrelevant). It is worthy of note that ephora does not cause pronominalisation. As a result, (40) is not equivalent to:

(12.41) It was shining yesterday although this does not exclude:
(12.42) The sun has not been seen today, but it was shining yesterday

Cataphora is 'defining' reference due to some immediately following element or elements, which, as we have already observed, is very often a restrictive relative clause. Included here is a restrictive adjective, even though in surface structure it normally precedes.

If these three sources reflect different processes by which an NP is 'defined', it must surely follow that Sommerstein's analysis can only apply to one of them, and that another two underlying sources for the will have to be found, even if we exclude, as we are at present doing, generic the. Since the examples given by Sommerstein (1972) are clearly anaphoric, we can assume that that analysis will be preferable for anaphoric the. Now we have observed above that anaphora induces either the or a pronoun. Therefore by postulating an underlying pronominal source for anaphoric the, not only has Sommerstein captured the relationship between the and the other deictics in general, he has also made explicit
the most obvious characteristic of anaphora. There is, however, a possible objection to Sommerstein's thesis, on the following grounds. If we look closely at (37) it can be seen that it comes very near to generating the directly in the base, and it certainly directly generates an underlying pronoun. But in most transformational work on pronouns it has been claimed that pronouns are regularly introduced transformationally. The relevant transformations are always based upon repeated NP's within a single sentence. Now we have noted above that this is the characteristic, although it is not absolute, of pronoun anaphora, which distinguishes it from anaphoric the. Therefore the only method for introducing anaphoric the transformationally would have to be a transformation whose structural description contained two disjoint sentences. But this is impossible since the theory has only one initial symbol, namely S, and that precludes transformations over more than one disjoint sentence.

The inadequacy, therefore, lies in the theory rather than in Sommerstein's analysis. For that analysis captures the essential generalisation that pronouns and anaphoric the are both derived from previous reference. That it does so at the cost of generating pronouns non-transformationally is an unfortunate necessity. Note also that there are other cases where pronouns have to be generated in this way, as in:
(12.43) The sun is a bright yellow object.
I saw it yesterday.

It is due to the previous reference to the sun, but that reference is in a different sentence. Thus there is no identical NP in the sentence which contains it which might cause the pronominalisation transformation to operate. Therefore it must be generated in the base. This suggests that the inadequacy may simply be in the theory of pronominalisation, for to incorporate (43) into the most generally accepted theories of pronominalisation would be to claim that surface pronouns may be either generated in the base or derived transformationally. Such duality is grossly inefficient. Sommerstein (1972:206) avoids this by apparently generating all pronouns in the base, but whether or not this is the correct solution cannot be argued out here.

Another reason for agreeing that it would be incorrect to allow transformations to operate over more than one disjoint sentence is to be derived from ecphoric reference. Now Christophersen (1939:72) is surely correct in defining the principal function of the as follows, cf. too Jespersen (1949:479):

"The article the brings it about that to the potential meaning (the idea) of the word [i.e., the collocating noun:RMH] is attached a certain association with previously acquired knowledge, by which it can be
inferred that only one definite individual is meant. This is what is understood by "familiarity."

This suggests that ecphoric reference should be connected as closely as possible with anaphoric reference, for we only say the sun by virtue of what Christophersen calls its "familiarity". The difference between anaphora and ecphora is that the former is linguistically explicit, the latter is not. Therefore in the latter case no possible transformational operation is available, and the advantage of Sommerstein's proposal is that this is no defect. We can generate anaphoric and ecphoric the in precisely the same way. This is also useful in connection with another problem which we have touched upon previously, namely hyponymic anaphora, as in (44), see too §12.2:

(12.44) That book is most interesting, for the author displays a wide knowledge of his subject

Such reference occupies a midway position between anaphora and ecphora, and although it is not fully explicable (possibly because the explanation cannot be wholly linguistic) this is not too problematic in a theory, such as Sommerstein's, in which anaphora and ecphora are not systematically distinguished, for the very good reason that within one sentence they are not distinguishable. Furthermore, some very interesting remarks
by Leech (1974:167-68) support this theory that hyponymy is inextricably connected with anaphoric reference, although there may still be many problems to solve.

We are now left with the problem of cataphora. This too is soluble in terms of Sommerstein's theory, in contrast to, for example, that of Thorne, for there are no unusual problems of stacking or conjunction. If we take example (24b), repeated below:

(12.24) b The girl I know kissed Bill

its underlying structure will be of the form:

(12.45)

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The standard processes of relativisation will produce the surface structure of (24b). However although there are no formal problems, this solution is not appealing. Firstly, it contradicts the notion that cataphoric reference is due to some following restrictive clause not present with anaphoric reference, since the in (24b)
will be derived from the same NP as in anaphoric cases, and is not due to the relativisation of the lowest S. Secondly, the constraint outlined in (28) is violated, since its purpose is expressly to exclude structures such as (45). As it appears to be a useful constraint which accords with our intuitions, it would be most unfortunate if it had to be rejected.

But the only alternative appears to be to introduce the by means of a relativisation transformation, and as we were able to ascertain in §12.2, this meets with many problems. Yet there may be a solution in such terms. Thompson (1971) suggests that all relative clauses, restrictive and nonrestrictive, ought to be derived from an underlying conjunction. This, of course, is already the accepted source for nonrestrictive clauses. At first sight this hardly eases our difficulties, but there might be a solution if it could be shown that all relative clauses except restrictive ones dependent upon a 'definite' NP ought to be derived from a conjunction source. This would make the embedded source for restrictive relatives unique to 'definite' NP's, and thus the rule combining relativisation and the-formation would be obligatory and meaning-preserving. Now Fairclough (1973) has given some useful evidence that this may indeed be the case, for he shows that the so-called 'style disjuncts' occur more happily in restrictive clauses with an 'indefinite' antecedent than in those
with a 'definite' antecedent; thus compare (46a) and (46b) from Fairclough (1973:528):

(12.46) a That waiter served me a steak that honestly made me sick
b That waiter served me the steak that honestly made me sick

Clearly (46a) is preferable to (46b). As Fairclough (1973:529) points out, there is a feeling that in (46a) two separate statements are being made, whereas only one statement is made in (46b). The connection of style disjuncts with performatives supports this intuition. And the most appropriate structural method for showing the distinction would be to assume underlying conjunction in (46a) but not in (46b).

Therefore there is some support for claiming that relativisation of an embedded restrictive clause obligatorily and unambiguously introduces a cataphoric the collocating with the antecedent NP. This enables (28) to be retained as a deep constraint, and anaphoric the and cataphoric the to be clearly distinguished, the first (virtually) being generated in the base, the second being transformationally derived. An interesting fact in favour of this distinction cropped up in our discussion of both, cf. §10.4 and, especially, Chapter 4. We proposed that there was a Dual Copy rule, part of whose function was to delete the in order to generate both children. But we were able to observe that only
anaphorically-derived the could be deleted by the transformation in question. At the time the only solution was to mark non-anaphoric the so that it was not deleted. But now an alternative solution presents itself, namely that if the Dual Copy rule is ordered before the transformation introducing cataphoric the, then no special marking of cataphoric the will be necessary. It is not certain that such an ordering will be possible, but it can scarcely be denied that postulation of different sources for anaphoric and cataphoric the provides a useful starting point.

It must be surprising that so far no attempt has been made to give the transformation which introduces cataphoric the. The reason for this is not that it is difficult to state: it is simply necessary to extend the rule creating the relative pronoun (e.g., who) so that at the same time it introduces the. Rather, the reason is that, whilst this may provide an excellent solution to the problem of cataphoric the, it does so only at the cost of creating a new problem elsewhere, for we now have no way of distinguishing between (47a) and (47b) in underlying structure:

(12.47) a The boy kicked a girl who was smaller than he was
b The boy kicked a girl, who was smaller than he was

Whilst this may be tolerable if Huddleston (1971:212-15)
is correct in claiming that the difference between the two sentences is minimal, cf. §3.3, there is the further difficulty that in (48) only the restrictive interpretation is grammatical (as above, this is marked by the absence of commas):

(12.48) a The boy kicked a horse that was standing in the field
b *The boy kicked a horse, that was standing in the field

We have now no way to account for this contrast, and until we do we can hardly claim to have provided a satisfactory answer to the problem of cataphoric the. Perhaps the only answer will be one which allows a third source for restrictive clauses, in which case the underlying structures of sentences such as (24b), (47a) and (47b) will each be unique. But until that third source, or some equally appealing solution, is found, we can only regard our hypothesis regarding cataphoric the as the most temporary and tentative of solutions.

So far our discussion of the has been largely independent of quantifiers, but a glance back, especially to §8.3, would suggest that if we wish for conformity anaphoric the would simply be derived from THE NUMBER, and the structure suggested there for postdeterminer quantifiers differs from any considered here in the important fact that whereas for:

(12.49) The boys ran away
the predicate nominal would be lower than the matrix sentence, the reverse would be true of:

(12.50) The many boys ran away

But to leave it at that would be to miss the point, which is that in (50) there are two pieces of information:

i) the number of boys was large; ii) those boys ran away. And in Part III the suggested underlying structure for sentences such as (50) sandwiched, as it were, the predicate nominal from which boys is to be derived between these two pieces of information. The immediate contradiction which seems apparent is therefore not present. It may well be the case, indeed it must necessarily be so, that a more elegant analysis of postdeterminers can be found, but that which we proposed is in large measure satisfactory. Clearly the "THE" which was left unanalysed previously can be now given a deeper structure, but this presents no difficulty. A much more radical difficulty is created by the fact that we have continually used restrictive relative clauses in our proposals for deriving quantifiers, but those are restrictive clauses which do not introduce cataphoric the. This implies that new structures must be found, but, as was stated in the previous paragraph, these are not to hand. Therefore this reanalysis must wait until they are, and we can only console ourselves with the fact that the reanalysis will in all probability be trivial. However it is a salutary reminder of the final inadequacy
of our hypothesis, to which we can only plead in mitigation that the other theories which we have examined have even greater deficiencies.

We have left the case of generic the to the end, for it appears to present special difficulties of its own. In fact I hope to show below that generic the is only a special instance of ecphoric the, and hence of anaphoric the. But this does not contradict our earlier statement, in §9.3, to the effect that generic the does not indicate reference to some object known to the speaker and presumed by him to be known to the hearer. It may well appear to do so, but only, I would maintain, because the earlier statement is correct in a rather misleading fashion. It is true that in:

\[(12.5)\quad \text{The lion is a dangerous animal}
\]
a referent of lion is not 'given', and that was the intended meaning of the earlier statement. But it will be remembered that it was also claimed that the lion in (51) was to be derived from a structure which included the notion SET and that it was so stated as to be uniquely determinable, cf. (9.55) in §9.3. This process is surely a linguistic equivalent to extralinguistic ecphoric mention of the sun. The difference between generic the and anaphoric the (in its widest sense) is that the former collocates with SET, whereas the latter collocates with the attendant noun. It is the presence of SET which determines a generic interpretation.
It therefore seems reasonable to suppose that generic *the* is derived from a pronominal source which has a dependent restrictive relative which contains a predicate nominal referring to SET; this parallels the analysis of anaphoric and ecphoric *the*. But there appears to be some difficulty with regard to:

(12.52) The elephant which lives in Africa has long ears

Should not this be treated as an instance of cataphoric *the* which is for some reason generic? One argument against this is the existence of generic sentences such as:

(12.53) He who pays the piper calls the tune

In nongeneric sentences, as we have seen in §12.1, it is at best extremely dubious to have a restrictive relative with an antecedent pronoun:

(12.54) a ??He who came to see me yesterday has won a prize for pedantry

b *A prize for pedantry was given to him who came to see me yesterday

To analyse *the* in (52) as cataphoric will be to fail to explain the difference between (53) and (54), a difference which is fairly simple to explain. All occurrences of pronouns are anaphoric, whether within one sentence or over several sentences. No NP which refers anaphorically can have a dependent restrictive clause. Therefore a satisfactory analysis of (52) or (53) will have
to deny the possibility of cataphoric status to the head NP in question. One possibility is to provide a structure such as in (31), which will assign to the elephant which lives in Africa the status of an NP containing no other NP (other than that directly dominating Africa). But whatever drawbacks this proposal might have, one stands out as compelling: it is quite unable to explain the difference between (53) and (54) except in an ad hoc fashion.

Now if we look again at our analysis of generic the in §9.3, and add to it our proposals concerning sentences such as (51) above, we can suggest that the underlying structure of (52) must be something like:
Although, for reasons stated above, only one of them is fully demonstrated, there are two definite advantages contained in (55). The first of these is that there is an anaphoric source for the, thus relating to (51), but this anaphoric source is not contained in the NP which is the antecedent of the surface restrictive relative and therefore constraint (28) is not violated. The second advantage is blurred because of our inability to show clearly that the lowest S does not induce cataphora, but it seems certain that that must be the case. If the correct notation can be found we will be able to explain
the non-cataphoric status of the in (52) more explicitly. Thus at worst (55) appears to be a step in the correct direction if we wish to reach a unitary analysis of generic the. Of course we have not yet explained the grammaticality of (53), but this has the appearance of idiosyncracy, and in this connection it is useful to remember that the derivation of the lion in a generic interpretation, as proposed in §9.3, is rather unusual. The fact that the lion has a unique derivation makes it easier to handle the use of he in (53). However it will always require the use of an exception rule, or some similar device, for notice that (56) is quite unacceptable:

(12.56) *It that lives in Africa is a dangerous animal

12.4 Conclusion

The premise underlying Chapter 11 in which we considered the grammar of a, the so-called 'indefinite article', was that there was no justification for hypothesising an 'article' node in deep structure which would dominate only either the or a. It was assumed that the arguments in Part I, where the status of 'article' as a part of speech had been discussed, were sufficient to discredit such an approach. Therefore in §11.2 we examined the proposals of Perlmutter (1970) which, if correct, would imply that a was simply a
reduced variant of the numeral *one*, and hence a member of the compound existential system of quantifiers, most closely analysed in Chapter 8. It was concluded, however, that although Perlmutter's hypothesis was initially appealing it was both internally contradictory and insufficiently adequate as a description of the varied occurrences of *a*. A more adequate proposal, it was suggested in §11.3, was to consider *a* simply as the surface realisation of the morphological feature [+singular], without any semantic significance of its own. Finally, in §11.4 we discussed two serious difficulties facing any analysis of *a*, and concluded that the morphological analysis was more satisfactory than most. Thus we were able to confirm not only that it would be incorrect to consider *a* as an 'article', but also that it would be equally unfortunate to treat *a* as a quantifier. It is neither to be contrasted with the nor compared with *one*; rather, its closest connections are with the plural suffix -*s*.

Such a claim, of course, contains the implicit assertion that the proper analysis of the must be quite different, but we were able to observe in §12.1 that *a* and the had at least two factors in common, for it makes little sense to consider the as an 'article' and it cannot possibly be analysed as a quantifier, given the evidence presented there. Rather, it was suggested, the ought to be analysed as a deictic, closely related to
the demonstratives this and that and at least similar in its grammar to the pronoun system. Since most recent grammarians have been concerned with the relation between the and restrictive relative clauses we then turned our attention to this point, and the theories based upon it, in §12.2. We were able to conclude that the most appealing theory was that of Sommerstein (1972), although the type of analysis first proposed by Vendler (1967), in which the is always derived from a restrictive relative, was also interesting, if problematic to handle. In §12.3 it was claimed that there were two principal types of the: anaphoric and cataphoric. In the case of the former we were able to accept, and indeed give further support to, Sommerstein's hypothesis, which had the merit of making explicit the relation between the and the English pronouns. However the hypothesis was not easily extended to cataphoric the, where it was felt that a variant of Vendler's suggestion was most plausible. This was despite the fact that it was not fully formalisable and also that it created problems elsewhere in the grammar. We could not, therefore, pretend to a lasting solution for cataphoric the. Then we turned our attention to generic the, where we attempted to show that it was best analysed as a variant of anaphoric the, signalled by differences in underlying structure first proposed in §9.3.
Most of the important points have been mentioned in the preceding two paragraphs, but it is worth emphasising one or two of them before we stop. Firstly, it has to be recognised that the grammatical tradition which has led to the establishment of an 'article' category in which a and the, and only a and the, contrast is fundamentally mistaken. Virtually the only factor in common between the two is that they are not 'articles', and it disguises the fact that the is more like a pronoun than anything else, whereas a is a semantically empty morphological creation. It may yet be possible that for teaching purposes the two ought to be brought together, but even here the centuries of tradition may have led us away from a more useful approach which might contain some of the points raised above. Secondly, and in contrast to the above, it will be recalled that the original 'parts of speech' theory, as proposed by Aristotle and, after him, the Stoics, did recognise that the was a type of pronoun, just as we have claimed it to be. It may well be a matter for regret that Ancient Greek had no equivalent of a, for if there had been one, a satisfactory analysis of a could possibly have been obtained long before now. But that is not to claim that one has now been obtained.
All abbreviations of periodical titles are those listed in:

**Linguistic Bibliography for the Year 1971**, Utrecht, 1974: Spectrum, for the Permanent International Committee of Linguists with the exception of the following:

**EWPL**: Edinburgh Working Papers in Linguistics, University of Edinburgh, Departments of English Language and Linguistics.

**YPL**: York Papers in Linguistics, University of York, Department of Language.

Where a reprinted version is indicated, all references in the body of the work are to the text of the reprinted version; however, in such references the date of the original version is retained, in order to clarify chronological relations.


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Declaration

I hereby certify that the work for this thesis was completed by me:

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