

SINGULARITY AND PLURALITY IN ENGLISH NOUN PHRASES:

A STUDY IN GRAMMAR AND PRAGMATICS

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1977

ACKNOWLEDGEMENTS

Too many people have provided me with snippets of data during the writing of this thesis to mention them all, but I remain nonetheless grateful to them. Of those who gave up more of their time to me, I wish to thank Jim Davy and Jim Miller, who read and made useful comments on drafts for Chapters 1 to 7; John Lyons, whose observations led to improvements in Chapters 9 and 10; Kingsley Ervin, Malcolm France, John Hawkins, and Mike Taylor, who all discussed with me an early version of Chapter 9; and Peter Denny, whose careful criticism of the first draft for Chapter 10 was very valuable indeed. But the two people to whom I am most indebted for constant encouragement from start to finish are my supervisor Keith Brown, who read, commented, and advised me; and my wife Grace, who helped in every other way.

The faults that remain in this thesis are my own responsibility.

ABSTRACT

Described in turn are the surface forms of singularity and plurality in English NP; the deep structure from which these forms derive; and finally, the correspondence between the grammatical forms and the perceived characteristics of the phenomena to which they refer.

So that the study of singularity and plurality should form part of an established description of NP grammar, there is a general discussion of NP structure; with detailed description of articles, quantifiers, definites, and specificity, and of their effect on NP constituency. Investigation of the grammar of singularity and plurality begins with their surface forms; going on to the significance of NP concords; and the characteristics of collective nouns. The inadequacy of the hypothesis that one(s) is Pronominalised, leads to the proposal that it derives from the deep structure semantic item ONE(S). Because every countable NP can be Onesed, it must contain ONE(S): which thereby defines countability on NP. An examination of English classifiers reveals ONE(S) to be the 'unit counter' classifier: it is interesting to find that countability should be defined by a classifier in a language other than a numeral classifier language. Only NP have dichotomous countability: twelve grades of countableness measure the different countability preferences among English nouns.

Uncountable NP headed by animal and plant nouns are assigned referential interpretations (to particular kinds of produce) by pragmatic interpretation rules. The pragmatics of singularity and plurality show a consistent correspondence between the grammatical forms of singularity and plurality, and the perceived characteristics of the reference labelled through the use of these forms. Data on classifiers from many

languages reveals similar regular correspondences in them between linguistic form and the perceived characteristics of phenomena — just such as were observed in the pragmatics of singularity and plurality.

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TYPOGRAPHICAL CONVENTIONS

(5.11)	Chapter 5, example 11
<u>underline</u>	citation of a lexical item, or an example in the text
<u>broken underline</u>	marks tonic stress in orthographically represented examples
<u>double underline</u>	marks contrastive stress in examples, or emphasis in text
<u>double underline</u>	
UPPER CASE	prelexical semantic representation within the grammar
'single quotes'	the denotation of some given item
"double quotes"	item quoted from a given source
subscript _{i,j}	referential indices to mark coreference and distinct reference
prescript **	hopelessly ungrammatical
*	ungrammatical, unacceptable
?*	just about possible
??	of very dubious acceptability
?	of dubious acceptability
!	grammatical but involves a verbal gymnastic, only acceptable under special conditions
(*)	unacceptable in the intended sense, or the indicated context
(X)	"X" is not necessarily present, but can be
$\left\{ \begin{array}{l} X \\ Y \end{array} \right\}$	either "X" or "Y"
X[Y Z]	labelled bracketting: "Y" and "Z" are constituents of "X"
Y [~] Z	"Y" concatenates with "Z" (and v.v.)
M ...	"M" and under given conditions whatever is appropriate to its right

... M	"M" and under given conditions whatever is appropriate to its left
=	the same as
≠	not the same as
#	either constituent boundary symbol, or when superscript, a tone group boundary symbol
superscript ⁺	marks the absence of a tone group boundary; only inserted where necessary to clear exposition
/fit/	phonological representation
³ pitch ² marking ¹	levels indicated from 1 lowest to 4 highest
UC _i an utterance	indicates an utterance made by someone at one time and place, and in a particular context

PART I

INTRODUCTION

PROLOGUE

This thesis is an exposition of the morphology, syntax, semantics, and pragmatics of singularity and plurality in the grammar of English noun phrases.

The notions of singularity and plurality are most clearly revealed in the morphological distinctions between the singular noun, such as girl, and its plural, girls. Through nouns they are introduced into well formedness constraints as controlling conditions on co-occurrent constituents, both within NP and outside of it. For example, in Those girls are playing hockey there is concord of "those" and "are" with "girls"; and neither could occur in a well formed sentence of standard English if singular girl were to replace "girls". Well formedness conditions which block singular girl from being pronominalised by they, or quantified by a number greater than one, or predicated by a verb like disperse or scatter used intransitively, but which allow any of these to happen to plural girls, must refer to singularity and plurality.

Because a noun that may be either singular or plural (e.g. girl) is a countable noun, but one which may not (e.g. lightning) is categorised as uncountable, singularity and plurality are crucial to the identification of countability.

Notions of singularity and plurality are also fundamental to the definition of collective nouns like collection, herd, or committee in which (to borrow a phrase from Kant) "plurality is regarded as unity". With collective nouns we are unequivocally talking about the semantics of singularity and plurality.

But morphology, syntax, and semantics do not exhaust the field of discussion, which must in addition encompass pragmatics: the use of linguistic form in response to nonlinguistic stimuli. For example if someone says to me

0.1) Look at those cats!

and I can see only one cat and no others, I do not conclude that the speaker has made a grammatical error -- as I would if someone wrote or said

0.2) *Voilà le vieux table que j'ai acheté hier.

The question of whether a table is masculine (as in German: der Tisch) or feminine (as in French: la table) has nothing to do with semantics or pragmatics. But if someone utters (0.1) and I can see only one cat, I am mystified and forced to conclude either that the speaker, through insanity or wilfulness, is violating the co-operative principle (cf. Grice 1968) and being misleading in his statement; or that there is or was at least one other real or imaginary cat which he perceived but I do not. These conclusions are rational just because the plural morph in 'cats' has the same sort of pragmatic effect as the root morph cat: it sets up expectations of perceptual correlation with the linguistic label.

Part of my intention is to establish that the constitution of a noun's denotation, or where applicable its reference¹, determines whether the noun is countable or uncountable, and whether or not it is collective or collectivised. Thus within my exposition of singularity and plurality

1. See Appendix A for clarification of the terms 'denotation' and 'reference'.

I shall seek to define the correlation between the linguistic labelling of constitutional subcategories for nouns (viz. 'countable', 'uncountable', 'collective', 'collectivised') and the perceived features of the phenomenon so-labelled.

Chapter 1

SOME THEORETICAL PRELIMINARIES

THE SQUISHINESS OF COUNTABILITY

When pointing out above the significance of singularity and plurality in deciding the countability of nouns I made the customary presupposition that any noun is either countable or uncountable. But nouns like cake, hair, stone, noise, potato, and lamb, for example, are half the time countable and the other half of the time uncountable: so we find

- | | | |
|------|----------------------|----------------------|
| 1.1) | Hetty ate a cake | (Countable singular) |
| | Hetty ate four cakes | (Countable plural) |
| | Hetty ate some cake | (Uncountable) |

(I shall rely on the reader's existing knowledge to carry the discussion through, ignoring, for the present, the criteria by which countability is decided in (1.1) and why the speaker uses one form rather than another.) It would be contradictory to propose that cake is both countable and uncountable at one and the same time. And although the denotation of countable cake differs from that of uncountable cake, they are obviously very closely related semantically; so that to suggest that there exists a pair of homophonous, homographous, yet different nouns, one countable, the other uncountable, would be too extreme a solution. A preferable procedure would be to treat cake and nouns like it as countable in some instances and uncountable in others, and its lexicon entry as unmarked for countability.

Not all nouns are so well balanced as cake in the relative fre-

quency of their countable and uncountable instances, even though both occur. Many so-called 'uncountable' nouns are regularly used as countables when referring to differing kinds, types or species, cf.

1.2) "Although the Arabian and 'robusta' coffees provide most of the world's trade in coffee, the 'excelsa' coffees have been taken to most countries in the tropics ..."
(Haarer 1962, 21)

1.3) a. The surplus wheat was exported.

b. "The wheats were predominantly Triticum aestivum ssp. vulgare types ..." (Finlay & Shepherd 1968, 159)

1.4) a. The people of America

b. The peoples of America

1.5) a. He has a cellar full of wine.

b. He has a dozen different wines in his cellar.

And similarly for cotton, tea, bamboo, wood, soil, ore, etc. I have dubbed such nouns pseudo-uncountable² for ease of reference. Perhaps the reason they have traditionally been categorised as 'uncountable' is that occasions for using or meeting with countable instances are often restricted to specialist contexts outside of the familiar core of English usage.

Uncountable instances of a typically countable noun like car are extremely rare and (therefore?) sound peculiar even when located in grammatically acceptable sentences, cf.

2. Cf. Allan (1976). (The paper referred to here, 'Collectivizing', was based on research carried out during the course of preparing this thesis.)

1.6) The scrapyard was full of smashed car.

1.7) There must be a million pounds worth of car in that car park.

And countable instances of truly uncountable nouns like lightning simply do not exist.

Thus the relative frequencies of countable as against uncountable instances vary tremendously from noun to noun. The range of variation is illustrated in Figure 1.1:

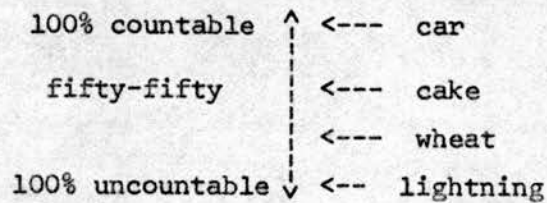


Figure 1.1 A countability squish based on estimated frequencies of occurrence of countable and uncountable instances of nouns

On the basis of the preceding discussion I will reject the principle of strict subcategorisation of nouns as either inherently countable or inherently uncountable. At the same time it is clear from Figure 1.1 and the discussion above that I do not propose that every noun has a fifty-fifty chance of being countable and the same chance of being uncountable. Nouns may have a predisposition to be either countable or uncountable; and I shall prefer that they be subcategorised according to this disposition in terms of a percentage of countableness, such as that car is almost 100% countable, lightning is 0% countable, and cake is around 50% countable. Although the frequency with which a noun is used countably gives some indication of its countability, this frequency is really a measure of usage and not of grammar. To make an accurate calculation of a noun's countability, it will be necessary to establish the number of countable environments in which it may occur compared with

other nouns: a grammar based calculation of this kind is made in Chapter 7.

WHY THE MORE-OR-LESS PRINCIPLE SHOULD WORK BETTER THAN
THE ALL-OR-NONE PRINCIPLE

Variable subcategorisation of this kind can be justified by turning to the larger question of comparing the inadequacy of the 'all-or-none' principle in grammar with the adequacy of the 'more-or-less' principle. The former entails strict subcategorisation, the latter variable subcategorisation. The disciple of the all-or-none principle holds that grammar is structured in sets of binary oppositions such that, for example, sentences are either grammatical, or they are ungrammatical; a noun is either countable, or it is uncountable; a phoneme is either long, or it is short; and so on. It is a principle through which language is viewed rather like a jigsaw puzzle in which a piece either fits, or it does not fit, and it is not allowed to change the shape of the pieces to make them fit. In a very significant way adherence to the all-or-none principle denies the possibility of creative language use by denying the plasticity of language. No doubt the attraction of the all-or-none principle is its extreme simplicity; but even so it is surprising to find it maintained through more than two millenia of linguistic analysis. The reason, perhaps, is that the alternative is too daunting to embrace; but be that as it may, it seems to me necessary to embrace it. The proponent of the more-or-less principle holds that although polarities like grammatical vs. ungrammatical exist, they are not simple binary oppositions but are related by a chain of intermediate properties such as might be impressionistically labelled 'grammatical but odd', 'possibly grammatical but

possibly not', 'ungrammatical but understood', 'hopelessly ungrammatical', or what have you.

APPLICATION OF THE MORE-OR-LESS PRINCIPLE:

MORE AND LESS GRAMMATICAL

One justification for applying the more-or-less principle in grammar is that the grammaticality of the following sentences can be graded from more to less grammatical. The all-or-none principle is hopelessly inadequate in this context. Compare

- 1.8) I have always liked pretty girls.
- 1.9) Girls I have always liked pretty.
- 1.10) I have always liked girls pretty.
- 1.11) ?Girls always I have liked pretty.
- 1.12) ?? Pretty I have always liked girls.
- 1.13) ?* Pretty always I have liked girls.
- 1.14) ?* I have liked always pretty girls.
- 1.15) * I have liked pretty always girls.
- 1.16) ** liked I pretty have always girls.

These sentences are ranged from most to least grammatical in my idiolect: I must admit that I am dubious whether convincing reasons can be given for such intuitive judgements, but the following comments are pertinent. (1.8) is the most ordinary of the grammatical sentences, being unmarked for mood and having unmarked information focus. Both (1.9) and (1.10) are grammatical but have unusual word order; the former has marked information focus, and the latter cries out for the insertion of either who are or to be between "girls" and "pretty". Both these sentences are less ordinary than (1.8) but it is difficult to rank them in respect of each other. I make no apology for the implicit

equating of 'most ordinary' with 'most grammatical' when considering these sentences; with a binary opposition between grammatical and ungrammatical this would not be possible, but with the more-or-less principle in force there is much more flexibility of expression. (1.11) is one of those possibly grammatical, possibly ungrammatical sentences: it is odd because both "girls" and "always" have been fronted, creating two marked information foci where there should only be one. (1.12) unravelled reads like (1.10) with marked information focus: thus the already unusual word order of (1.10) is made even more unusual by fronting the originally postposed adjective. And things are made even worse when there are, in addition, conflicting information foci as in (1.13); this sentence can also be read as a version of (1.15) with "pretty always" fronted, in which case it qualifies for a two asterisk rating. The word order is wrong in (1.14) but it is perfectly intelligible, as have been all the sentences hitherto. But although (1.15) is partially intelligible it is not wholly so: it looks as if there is a misplaced adverbial phrase which is of dubious intelligibility because the modifier is wrong; one is tempted to give "pretty always" the meaning of either 'pretty often' or 'almost always': I am assuming that the sentence is intended to be intelligible, i.e. that what Grice calls the 'co-operative principle' is in force, for example if the sentence were uttered by a foreigner in normal conversation; it seems to me a necessary assumption on the part of the grammarian that semi-sentences like (1.15) can be discussed from this point of view. (1.16) however does not permit of such an assumption: it is a word salad, utter nonsense and hopelessly ungrammatical.

Nowadays it is generally accepted that the grammarian's function is to model the native speaker's internalised grammar. I will not

concern myself at this juncture with the controversy centred on the actual mechanisms employed in the grammarian's model, but there is an equally important question of deciding the scope and nature of the grammar. Should it be restricted to Chomsky's notion of competence as described at the beginning of Aspects of the Theory of Syntax? Or extended to what Hymes (1971) calls 'communicative competence', which includes in the grammar representations of the sociocultural information necessary to make judgements of the appropriateness and acceptability of language used? Or perhaps the scope of the grammar should include all this and also encompass reference based presuppositions and entailments of utterances such as are discussed by McCawley (1968a) and Lakoff (1972a). Obviously a speaker's intuitions about degrees of grammaticality reflect his internalised grammar, and it is not controversial to propose that representations of them be included in the model: Chomsky (1965), Katz (1964) and Weinreich (1966) all propose the model should contain a deviance metric, although none of them describe a suitable device to handle it. Yet in supposing that the grammar ought to judge degrees of grammaticality they are applying the more-or-less principle, which if justified in this matter may be justifiable elsewhere in the grammar. The discussion of (1.8-16) shows that the principle is justified in respect of grammaticality. Decisions on the grammaticality of (1.11-12) are doubtful because these sentences are neither clearly grammatical nor clearly ungrammatical; they fall towards the middle of a set of sentences ranging between the clear grammaticalness and ordinariness of (1.8) and the hopelessly ungrammatical word salad of (1.16). No grammar embodying the all-or-none principle (which permits only binary oppositions) can capture these facts; and I therefore conclude that the grammar which embraces the more-or-less principle is to be preferred because it can.

that sets them apart from noun; but noun and verb will never fall together in opposition to adjective. Noun and verb will only be grouped according to some common trait that is also found in adjectives. These predictions appear to be verified by the facts I am about to adduce.

One of the surer pieces of evidence from Ross (1972b) concerns the it + complement sentence construction: where this construction is governed by a verb the expletive "it" is fully acceptable, compare (1.17) with (1.18):

1.17) I hate it that my sister is a junkie.

Alf loves it when May kisses him.

1.18) ? I hate that my sister is a junkie.

? Alf loves when May kisses him.

Where the it + complement sentence construction is governed by an adjective the "it" instead of being almost obligatory is instead barely permissible, cf.

1.19) ? I'm ashamed of it that my sister is a junkie.

? Alf is fond of it when May kisses him because he gets tickled by her angora sweater.

1.20) I am ashamed that my sister is a junkie.

Alf's fond of when May kisses him because he gets tickled by her angora sweater.

And expletive "it" is absolutely impossible when the it + complement sentence construction is governed by a noun: compare (1.21) with (1.22)

1.21) * My shame of it that my sister is a junkie has driven me to drink.

* Alf's love of it when May kisses him has made him write this poem.

- 1.22) My shame that my sister is a junkie has driven me to drink.
 Alf's love of when May kisses him has made him write this
 poem.

From (1.17-22) we see that the more predicative the category governing the it + complement sentence construction, the more acceptable is expressive "it"; and conversely, the nounier the governing category, the less acceptable is "it". This justifies the relative order of categories in Figure 1.2.

Looking at the world's languages we find that the primary function of both verbs and adjectives is to predicate nouns (a grouping of adjective and verb against noun). Yet in a majority of languages it is the verbs that embody predicative form in surface structure so that adjectives rely on a copula verb to mark their predicative function; thus in a majority of languages verbs are more predicative than adjectives, cf. Figure 1.2. There are a few languages (e.g. Japanese) where no distinction is made between verbs and adjectives so that these two categories fall together in opposition to nouns. But I know of only one language, Nootka, in which there is said to be no categorial distinction between noun, adjective and verb (cf. Bach 1968, 115). Thus, language universally it is very rare for there to be no distinction between the three categories of noun, adjective and verb; less unusual for nouns to be set apart from a single category of predicates corresponding to adjectives and verbs; and most usual for the three categories to be distinguished such that nouns are non-predicative, adjectives more predicative, and verbs most predicative, as we would predict from Figure 1.2.

In many Indo-European languages adjectives do or did in the past decline like nouns, and this led the later Greek grammarians, and

following them the Latin grammarians, to classify adjectives together with nouns and separately from verbs. In Allan (1973) I argued that complement NP in English (and perhaps in other languages) have predicative characteristics typical of adjectives and verbs; but they are more like adjectives in being subject to the constraint that their predicative function is required to be marked by a copula verb. Here are two different ways in which noun and adjective are grouped separately from verb.

One of the supporting arguments in Allan (1973) took Lakoff's (1965) claim that because both verbs and adjectives partition into subsets of stative and nonstative members they constitute just one syntactic category (by which he means they both function as predicators) and showed that nouns also partition into subsets of stative and nonstative members. Casting around for non-stative nouns I discovered very few - only insult nouns - that are typically nonstative; this compares with the fairly numerous nonstative adjectives and the very numerous nonstative verbs. Hence, the nounier a category is, the more stative it is.

When a category is functioning as a predicator the more predicative it is the more arguments it is likely to have: thus many verbs have more than one argument and 'double object verbs' may have as many as three; there are no adjectives which can take three arguments and only a few, e.g. ashamed of, fond of, proud of, may take two; no complement NP takes more than one argument.

All the foregoing facts about relations between the major lexical categories prove the validity of the N,A,V category squish illustrated in Figure 1.2. The kind of relationships considered could not be

handled by application of the all-or-none principle, and an adequate linguistic description of category relations is forced to apply the more-or-less principle.

THE COMPUTATION OF RELATIVE RANKINGS IN A SQUISH

A major work on squishy grammar is 'Nouniness' (Ross 1973c). In it Ross uses 29 criteria to compare the relative nouniness of various NP between the polarities 'sentency' and 'nouny'; his conclusions are given in Figure 1.3

<u>NP-type</u>	<u>Example</u>	% Sentency	% Nouny
<u>that S</u>	that pussy cats have soft fur	100	0
<u>for to</u>	for pussy cats to have soft fur	95	5
Embedded Q	why pussy cats should have nasty claws	86	14
Acc Ing	him scratching his wife's back	66	34
Poss Ing	his eating marinated mussels	43	57
Act Nom	the scratching of his wife's back	15	85
Der Nom	the scratch of the cat's claws	2	98
N	cat	0	100

Figure 1.3 The nouniness-sentenciness squish

(after Ross 1973c)

The percentages of sentenciness given in Figure 1.3 correspond directly to Ross's own figures, those for nouniness I have assumed are simply complementary to them. The method of calculating these figures is interesting and far more precise than simple guesses, even though they must ultimately rely on intuitive judgements of grammaticality. The various types of NP are submitted to diverse processes which put them

into particular constructions whose relative grammaticality gives a ranking for each process. Where there is a difference in grammaticality between one type of NP and the next, a unit of grammatical difference is assigned between the two. For example consider what happens when the Yes-No Question transformation applies to all the various NP types in subject position, given that all the affirmative variants of these sentences are acceptable:

- 1.23) *Is that girls with double chins make good lovers doubtful?
 1.24) *Is for girls with no legs to make good lovers unheard of?
 1.25) ?*Is why people with acne should feel inferior obvious?
 1.26) ?Is him scratching his wife's back in public so unseemly?
 1.27) Is his eating forty marinaded mussels evidence of his
 gluttony?
 1.28) Is the fondling of his moustache a nervous habit?
 1.29) Is his love of grenouilles au vin insatiable?

What we see here is that the more nouny NP is, the more acceptable it is for the auxiliary to flip over in front of it for a Yes-No Question. But I am anxious to exemplify the assignment of units of grammatical difference. According to Ross no unit would be assigned between (1.23-24) because they are judged equally ungrammatical; and similarly no units would be assigned between (1.27-28) because they are judged equally grammatical. But there is one unit of grammatical difference between each of (1.24) and (1.25), (1.25) and (1.26), (1.26) and (1.27): hence for this grammatical process there is a unit of grammatical difference between for to complements and embedded Q, the latter and Acc Ing, Acc Ing and Poss Ing. In Ross's paper the number of units of difference between each type of NP has been totalled after the application of all 29 processes and expressed as a percentage of the sum of all ~~units~~ [#] of grammatical difference to give the ranking in Figure 1.3.

I have described Ross's method of quantifying relative rankings in a squish to show that the relations between the elements of a squish can be stated precisely. In fairness I must warn the reader that my calculation of a noun's degree of countableness in Chapter 7 is (justifiably) made on a different basis.

ENDWORD ON SQUISHY GRAMMAR AS AN APPLICATION OF
THE MORE-OR-LESS PRINCIPLE

As to the rest of Ross's work on squishy grammar, I restrict myself to just a few further remarks. In 'A fake NP squish' (1973b) he argues that some NP are more noun-phrasal than others, finding a decreasing noun-phrasiness in the following: animates → forces of nature, concretes → events → abstracts → [take] a tack → [make] headway → it [be muggy] → it [S] → [existential] there → [keep] tabs [on] → [take] heed. This ranking is made against the choosiness of 19 operations involving NP. In Section 3 of 'Nouniness' (1973c) he discusses the application of the squishy more-or-less principle to primacy relations (cf. Langacker 1969), showing that the interplay of squishy command and precedence relations accounts for the relative grammaticality of sentences containing coreferential nouns and pronouns in various positions and constructions, backwards any, and quantifier crossing (cf. Lakoff 1969). In 'Negginess' (1973d) Ross shows a polarity squish from less to more negative through hardly/seldom → no → not against degrees of neg-neediness increasing from not even → neither → positive tags. In 'The Center' (1974) he demonstrates a stative-active squish ranging from copular complement → state → event → instrumental act → agentive act, and along with it an activeness-neediness that grows greater from the object of know → all NP have to do is → temporal

as → do so → reluctantly. So squishes are applicable to a wide range of grammatical phenomena which can only be handled by adherence to the more-or-less principle. Countability is among them.

MORE ABOUT THE CHARACTERISTICS OF THE GRAMMAR USED IN THIS THESIS

In the course of establishing the need to apply the more-or-less principle in grammatical analysis I made no statement about the particular theory underlying my account of the grammar of singularity and plurality, but many a clue has been dropped which points to a transformational approach. A very significant part of language experience is the ability to use and recognise different ways of saying the same thing, and I am firmly of the belief that a grammar should be able to model this ability by relating semantically identical constituents of the language through derivation from a common source. This entails a semantic or semantically interpreted underlying structure which may develop distinct surface structures - a theory that will also allow distinct semantic or semantically interpreted underlying structures to develop identical surface structures. A deeper phrase marker is converted into a shallower phrase marker by an operation called a transformation. Thus I believe the optimal grammar to be a transformational grammar.

I hedged earlier when talking about semantics in underlying structure, but in fact I am firmly committed to the view that language has a semantic deep structure³ in which the configuration of elements is governed by the same sort of relationships as have traditionally been

3. Thus I do not use 'deep structure' in the sense of Chomsky (1965).

dealt with in syntax. This is partly because my concern in this thesis with pragmatics and the perceptual conditions that affect speakers in their use of linguistic forms impels me towards a psychologically real model for the speaker-listener; and to my mind that must be one in which the deepest representation is semantic and the surface form phonetic or graphetic. I have no objection to an autonomous syntax and an interpretative semantics for either theoretical or physical machines; but they will not do for real speakers of natural languages. In any case, standard theory and extended standard theory, which embody the principle of a syntactic base and an interpretative semantics, suffer flaws of simplicity cogently described in Postal (1972); and whether or not such theories are empirically inadequate is hotly disputed between their proponents and those of generative semantics. I have no intention of taking up cudgels for either camp here and now. However, I shall enter the lists to joust with Katz on the nature of semantic structure.

Weinreich (1966, 419) wrote

"definitions of words have semantic structures of the same general form as sentences of a language."

and on page 446 he elaborates a little

"every relation that may hold between components of a sentence also occurs among the components of a meaning of a dictionary entry. This is as much as to say that the semantic part of a dictionary entry is a sentence."

Weinreich seems to me indisputably correct in what he says (look at any dictionary), and generative semanticists have tried to prove it, not always very convincingly, cf. McCawley (1968b, 1971a, 1971b); Postal (1970); Kastovsky (1973); Fodor (1970). Perhaps the strongest piece

of evidence in Weinreich's favour is, paradoxically, the semantic representation used by Katz, who reveals himself (in Katz 1967, 1970, 1972) an arch enemy to Weinreich and to generative semantics as a hypothesis. Katz's semantic component contains a dictionary which is a set of readings for every morpheme in the language; each reading consists of a set of semantic markers, some having "highly complex internal structure" (Katz 1972, 37). He also says (loc. cit.) "we use the term semantic marker to refer to the semantic representation of one or another of the concepts that appear as parts of senses. Semantic markers represent the conceptual constituents of senses in the same way in which phrase markers represent the syntactic constituents of sentences." It is a pity that Katz would not allow himself to admit that semantic markers do not just have similar structure to a phrase marker, they can readily be seen to have the identical structure, viz. sentence structure. For instance consider his analysis of his semantic marker (Male) given in Katz (1972, 160):

1.30) (Possesses bodily organs (Function: begetting offspring))

Surely this is reducible to the sentential

1.31) an entity possessing bodily organs for begetting offspring

I fail to see any advantage in (1.30) over (1.31) and the latter is preferable because of its simplicity. Comparison of (1.30) and (1.31) reveals the spurious formalism of the former. One of Katz's choicer examples of semantic description is the semantic reading given the verb chase in Katz (1967, 170):

1.32) (((Activity of R_1) (Nature: (Physical)) ((Motion) (Rate: Fast))
 (Character: (Following R_2)), (Intention: (Trying to catch
 ((R_2) (Motion))) (Condition: R_1 not coreferential with R_2))

We can thankfully dispense with the esoteric formalism to render this

reading more simply as

- 1.33) R_1 is quickly following R_2 with the intention of catching
 R_2 that is moving (Condition: R_1 not coreferential with R_2)

That there is no justification for Katz's peculiar formalism or pseudo-formalism should be obvious from comparing (1.30) and (1.32) with (1.31) and (1.33); the ordinary sentences convey just as much information as Katz's semantic marker and his semantic reading, with considerable gain in simplicity. If Katz's semantic descriptions are really ordinary sentence structures in camouflage, Weinreich and the generative semanticists are vindicated in their view of the structure of semantic descriptions.

No one believes that, when properly formulated, semantic structures such as those above should contain lexical items: ideally they would consist of language independent semantic objects; but because no one would be able to interpret them if they were not translated into ordinary language, it has proved both necessary and convenient to directly represent the postulated semantic objects by familiar lexical items modified by some sort of typological ploy such as Katz's bracketings or McCawley's use of upper case type - a convention which I shall also use.

I shall adopt the position that deep structure consists of a configuration of semantic items (represented in upper case type) which are terminal elements in syntactic structures formed by a set of node admissibility conditions (cf. McCawley, 1968c). Structure will be illustrated by labelled trees. Traditionally labelled trees have represented immediate constituent analyses and ignored the functional relationship of sister-nodes; by contrast generative semantic trees can

be found overloaded with predicate and argument labels showing the functional relations at the expense of classificatory ones, e.g. in Lakoff (1972). I shall follow the practice of stating the functional relationship which exists between nodes forming a higher constituent and, thereafter, usually omit it from trees.

THE DICTIONARY

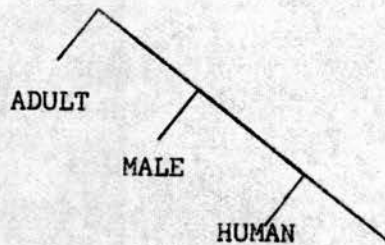
The semantic items that appear in structural configurations are taken directly from a dictionary. In the dictionary they are categorised as nouns, adjectives, and so on, and branded with selectional features such as countability grades, activeness grades, and the like. I shall represent semantic items by the citation forms of associated lexical items, to which they have close affinity, but not, however, identity. For example the semantic items MAN and MANKIND may both end up as the lexical item man; ONE may be lexicalised as either one or a(n). Anyone surprised at seeing MAN as a purported semantic item has my sympathy: he might have expected ADULT MALE HUMAN, or something similar. Here, we are confronted by a major problematic in generative semantics, and perhaps any kind of semantics: the degree of detail to be included in semantic descriptions. Faced by trying to account for lightning in terms of 'visible electric discharge between clouds or cloud & ground'⁴ or even in terms of something more familiar (if less scientifically accurate) such as 'flash of light from the sky during a storm'; or lake as 'large extent of fresh water in a depression' (wine lake?, salt lake?, dried up lake?); faced by such difficulties the problem looks insolvable. There was a time when McCawley's celebrated

4. Concise Oxford Dictionary.

analysis of kill made the difficulties worth tackling; but nothing has been done to meet Fodor's (1970) valid criticisms, and I have come to believe they cannot be met. I therefore envisage the dictionary as being not simply a store of semantic items with their associated selectional features, but in addition a statement of approximate equivalences between semantic items (e.g. MAN) and other semantic items (such as MAN-KIND) or configurations of other semantic items in regular syntactic structures (such as ADULT MALE HUMAN). The basis for such similisations is the possibility of an identical lexical mapping for the two semantic items or the semantic item and the configuration of semantic items; and valid equivalence statements such as A man is an adult male human. It is important that the dictionary only claims to state approximate equivalences and not complete synonymies: thus KILL may be similised as CAUSE BECOME NOT ALIVE without a pretence of synonymy between the two, yet the indubitable similarity in meaning is documented.

LEXICALISATION

The lexicon contains sets of lexical entries consisting of lexical items whose meaning is specified by an associated phrase marker or partial phrase marker containing one or more semantic items. Lexicalisation proceeds in the way described by McCawley (1968b) and Green (1969): a lexical item is mapped onto a phrase marker or partial phrase marker generated by node admissibility conditions or a transformation, if and only if the latter matches an identical tree in the lexical entry associated with the lexical item. For example the lexical item man may be mapped onto the semantic item MAN or onto the partial phrase marker (incomplete here)



I assume that what allows us to say such things as A man is an adult male human is that each semantic item of ADULT MALE HUMAN can be lexicalised individually. Notice that man can denote either 'man' or 'adult male human': there is a sameness of denotation between the single lexical item and a phrase (cf. Appendix A). It should be no surprise then that a single word in one language is only translatable by a phrase in another language. For example English has no single lexical item corresponding to the Maasai verb abol and is forced to lexicalise the meaning through the phrase to hold a cow by the mouth⁵. It must be clear from what I have said above that I do not suggest that abol and to hold a cow by the mouth have identical semantic structure, which would seem to imply that any semantic structure that can be correctly identified will be valid for all languages; all I am willing to commit myself to is a common denotation, and a dictionary equivalence.

5. A possible reason for the existence of such lexical gaps is given on p. 301f.

PART II

NOUN PHRASE STRUCTURE

PROLOGUE

It is impossible to describe the grammar of singularity and plurality in English noun phrases without reference to other aspects of NP structure - if for no other reason than the concord relations that exist between the constituents of these three words. But there is at least one other significant reason: to make statements about any part of NP structure opens the question of its compatibility with other parts of an NP; and the general survey of NP structure which follows is to contextualise and guard against the ad hocness of the analysis of singularity and plurality.

Throughout this second part of the thesis I take it as an axiom that every NP has a head element, which in deep structure is by definition a noun dominated by an N node. Every NP has a head in both deep structure and surface structure, though the deep structure head does not always survive the derivational process to become the surface head, as we shall see in Part III. In the ordinary orthographic presentation of the English NP the head may be flanked on either side by constituents of the NP it governs; I refer to those constituents ranged on the left of the head as the leftwing of the NP, and the ones on the right of the head as the rightwing of the NP. It turns out that these locutions apply nicely to deep structure configuration as well as to surface lineation. The leftwing of NP structure is the subject of Chapter 2; the rightwing that of Chapter 3.

Quantification is obviously a relevant theme in the grammar of singularity and plurality, and some aspects of it are dealt with in Chapter 2. But in addition to its leftwing manifestations, quantification is effected through classifier constructions such as two head of

cattle, four pounds of potatoes, three quarters of a mile, hundreds of marbles: the peculiar structural characteristics of these NP compose the topic of Chapter 4.

Chapter 2

THE LEFTWING OF THE ENGLISH NOUN PHRASE

ADJECTIVES

Generally speaking, the constituents to the left of the head noun in an NP dominated string are predicates ranging over all the constituents to the right of them, up to and including the head noun¹. Ever since Chomsky became the guru of transformational grammar it has been generally accepted that the attributive derives from an identical complement; the latter being, in conventional terms, a predicate. Thus (2.1) derives from (2.2):

2.1) the pretty girl

2.2) the girl who be pretty

If this procedure were correct there is no reason to think that the movement of the adjective from complement to attributive position should affect its syntactic and propositional function, which is to assign a property to its argument - namely, to predicate (cf. Allan 1973, 379). And even if this derivation is not correct, it does not change the fact of the attributive's function: the functional similarity of the attributive and the complement is just as important as their formal and semantic similarity. As Bolinger (1967) pointed out, the derivation of attributives from complements is brought into question through the existence of attributives for which no such derivation is available, e.g.

1. Exceptions arise from conjoinings and disjoinings among these constituents, and adjectival qualifiers like very have a restricted scope, cf. p.157f.

2.3)	the rural councillor		*the councillor who be rural
	the runaway train		*the train which be runaway
	the daily paper		*the paper which be daily
	the criminal lawyer	≠	the lawyer who be (a) criminal
	the poor girl	≠	the girl who be poor

The failure of the complement source hypothesis to account for the grammar of all (or nearly all) attributives suggests that it may not be supplying a valid premise for the grammatical description of any attributives, even those like "pretty" in (2.1) for which it has hitherto been ~~conveniently~~ ^{conventionally} acceptable. And it turns out on investigation that the plausibility of this hypothesis is an insubstantial façade. For a start the hypothesis entails the methodologically undesirable gambit of postulating an underlying structure containing terms additional to the surface structure, namely wh- be, and having postulated their existence to immediately delete them². Then there are procedural difficulties. Complement Shift entails at least two steps. Wh- be Deletion³, which

2. The addition of the copula is especially vexing because its proper inflexion cannot always be ascertained: but of course that doesn't matter because it is going to be deleted in any case!
3. 'Wh- be Deletion' is surely a misnomer. Sentence (i) is converted into (i') by Wh- be Deletion:
 - (i) Tenants who are using the front door after midnight are asked to ensure it is left locked.
 - (i') Tenants using the front door after midnight are asked to ensure it is left locked.
 Some very similar transformation converts (ii) into (ii') and (iii) into (iii')
 - (ii) Tenants who use the bath are asked to leave it clean.
 - (ii') Tenants using the bath are asked to leave it clean.
 - (iii) Tenants who do not allow the caretaker to inspect their flats will be given notice.
 - (iii') Tenants not allowing the caretaker to inspect their flats will be given notice.

Surely all the prime examples should derive via the same transformation, one which properly includes Wh- be Deletion and whose function is to erase the relative pronoun and tense (and in consequence of the latter delete any supportive auxiliary) making the verb stem nonfinite. The constraints on such a transformation are exactly those on Wh- be Deletion.

from (2.2) erases "who be"; and Flip; which moves the postposed complement into the leftwing - an operation which needs to be carefully stated, to ensure that the former complement is correctly located as an attributive. A problem arises from the complement source hypothesis in the derivation of

2.4) the responsible man

which supposedly comes from

2.5) the man who be responsible

Wh- be Deletion transforms (2.5) into

2.6) the man responsible

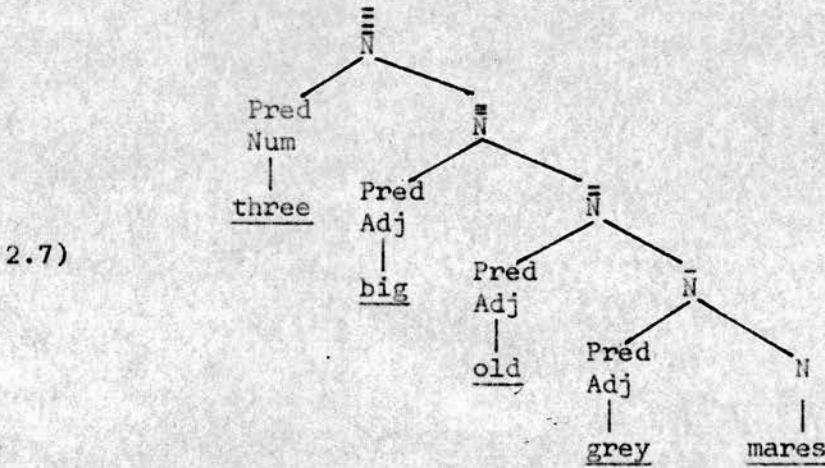
which is in turn transformed by Flip into (2.4). But the input to Flip, (2.6), means 'the man to blame', whereas its output (2.4) means 'the trustworthy man' - note the differing form of these two phrases - thus raping the convention that transformations do not change meaning (cf. Partee 1971). In fact the difference in meaning between (2.4) and (2.6) is so great that no one could possibly believe that it arises from a re-ordering transformation; in other words (2.4) cannot derive from (2.6) without a lot of objectionable hocus-pocus. The only possible defense for the fervent believer in the complement source hypothesis is one such as Humpty Dumpty used against Alice: in this instance, to claim that the man responsible as an intermediate structure has a different meaning from the identical phrase as a surface structure. To me this is totally unacceptable. Moreover, because the NP containing the relative clause, i.e. (2.5), is ambiguous between the senses of (2.4) and (2.6), in any derivational relationship with them governed by the usual rules of transformational grammar they should be the sources for it rather than vice versa. Which is surely

as strong a case as any against deriving attributives from complements. The ambiguity of the complement by comparison with the attributive adjective is confirmed in comparing (2.2) with (2.1) - which seemed to offer one of the clearest cases for the complement source hypothesis. We observe that the scope of "pretty" is different in the two phrases: in (2.1), the pretty girl, the scope of "pretty" is the head noun "girl"; whereas in (2.2), the girl who be pretty, the scope of "pretty" is the NP "the girl". Since the scope of predicates is semantically significant (compare the effect of negative scope in [I cannot [go]] and [I can [not go]]) there must be a semantic distinction between (2.1) and (2.2), and indeed there is - though it is very subtle. The denotatum of (2.1) is one of the class of pretty girls: "pretty" describes the type. The denot^{ta}um of (2.2) is one of the class of girls, and she is, was, will be, might be, pretty. Thus in (2.1) where the adjective is in the leftwing of NP, the speaker in using it necessarily typifies the denot^{ta}um; but in (2.2) he does not: he may be making only a contingent ascription of prettiness⁴. This distinction between attributive and complement adjectives will be lost if the former are derived from the latter; and so I conclude we should reject the hypothesis that attributives derive from identical complements, and instead suppose that both attributives and complements be directly generated, and differ in the

4. The distinction between characteristic or typical ascription made by leftwing constituents, and temporary or contingent ascription, which is restricted to the rightwing of NP, is discussed in Allan (1973).

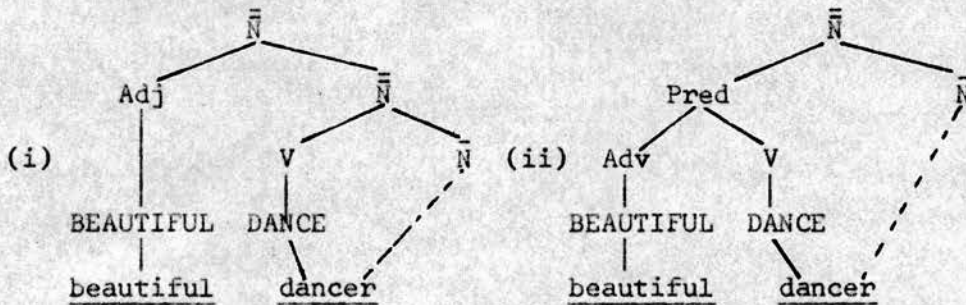
scope of their predication⁵.

Hence the traditional IC analysis of three big old grey mares can be elaborated as in (2.7), and thereafter a convention maintained that all left sisters to bar-N nodes are predicates, with the consequence that Pred can be omitted from trees:



The bar-N convention I use is convenient for labelling nodes endocentric on N for which there are no agreed labels, and it should not be identified too closely with Chomsky's (1970) notation which was conceived

5. The problem posed against this proposal by NP like a beautiful dancer, which is heteronymously (i) 'one who is beautiful and who is a dancer' and (ii) 'one who dances beautifully', can also be accounted for in terms of predicate scope, viz.



(The substructure of the "N̄" node in these two trees will be accounted for towards the end of Chapter 5.)

within a rather different model of grammar. Furthermore Chomsky's bar-N notation seems to exclude NP, which I find an essential category: replacement of an appropriate bar-N node by an NP node proceeds according to the following well formedness condition, WFC 2.1

Any bar-N node not daughter of a bar-N node is replaced by an NP node.

NP nodes do not only derive by substitution for bar-N nodes, and WFC 2.2 states

Any node which is mother to $NP^{\frown}S$, $NP^{\frown}Prep P$, or conjoined NP, is NP.

If we consider the proposition that predicates to the left of the NP head take as their scope the set of constituents to the right of them up to and including the head, together with the proposition that a predicate specifies the reference of its argument by making the description of it more detailed, we may correctly deduce that each constituent added to the left of the NP head increasingly specifies the NP reference, cf. Figure 2.1.

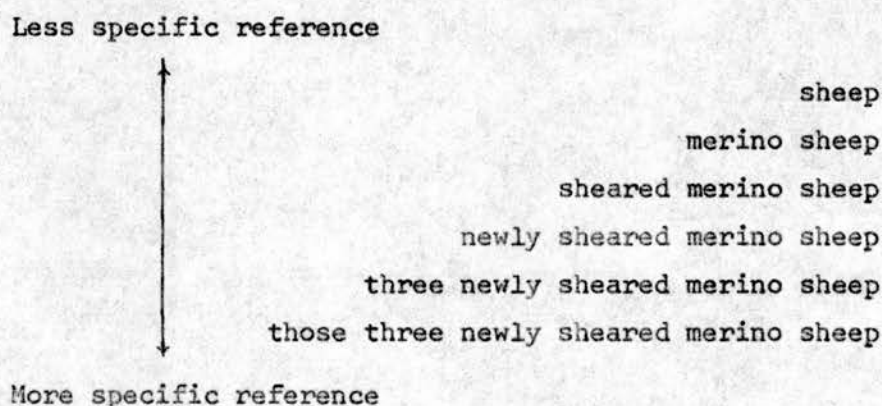


Figure 2.1 Each constituent further to the left of the NP head increasingly specifies the NP reference

PROBLEMS WITH THE FAR LEFT: COPING WITH INDEFINITES,
 QUANTIFIERS, DEFINITES, AND SPECIFICITY

It is barely necessary to illustrate the relevance of indefinites, quantifiers, and definites to the study of singularity and plurality, and it is enough to show that the contrast in number between the subject NP of (2.8) and (2.9) is indicated by no means other than an indefinite, a quantifier, or a definite:

- 2.8) A }
 One } sheep looked at me disinterestedly.
 That }
- 2.9) Some }
 Four } sheep looked at me disinterestedly.
 Those }

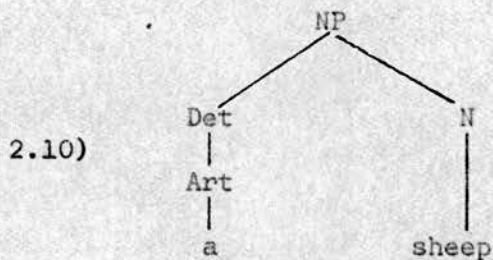
There is, however, some controversy surrounding the syntactic and semantic relationships between these three categories, and therefore their proper representation in NP structure. In the following pages I shall air these problems and look for a solution so that the grammar of singularity and plurality in NP can be pursued within an established framework⁶. It is this endeavour which is the principle justification for considering specificity - a category not directly relevant to any aspect of singularity and plurality, although it does arise quite naturally in the discussion of quantifiers because of the word any.

All these categories are marked to the far left of the NP - if they are marked at all.

6. It is perhaps overconfident to write of "an established framework" of NP structure. My conclusions will have to be tentative simply because there is not the time to exhaust every avenue of enquiry and all the details of each argument.

INDEFINITES AND QUANTIFIERS

Consider the grammar of the singular indefinite article a(n). By traditional analysis the NP a sheep has the structure



A problem arises because Perlmutter (1970) presented a battery of convincing arguments to show that a(n) is a form of the numeral quantifier one. Diachronically they derive from the same root (cf. Jespersen 1909, 321; 1949, 411, 581). And either may be used, depending on context, in translating French un(e), Classical Chinese i, Swahili moja, and so on. In short both a(n) and one are lexicalisations of the same underlying semantic element ONE. So, for example, if we compare

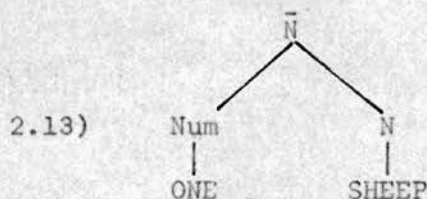
2.11) A sheep looked at me disinterestedly.

2.12) One sheep looked at me disinterestedly.

I think it will be agreed that the sentences do not differ semantically, but in their information structure: in (2.12) there is emphasis on enumeration that is absent from (2.11). The basic identity of a(n) and one surely means that at the deepest level they must be dominated by the same node. This conclusion is strengthened by the fact that neither *a one⁷ nor *one a is possible and this would be neatly explained if one

7. A one does occur in a one drink man, etc. in which the numeral quantifier forms part of the Adnominal, cf. a two drink man; but this usage is out of count for the present discussion. It also occurs with the idiom such a, cf. such a one as I have never seen before which I believe might derive from *a such one, cf. two such ones but not *such two ones nor *such two.

and a(n) were rivals for the same node. And if we follow Perlmutter in supposing that one and a(n) both function as numeral quantifiers, such that both are subsumed to the quantifier node Num, then we can explain why all of *one two N, *a two N, *a one N, and *one one N are blocked (except where the second quantifier is adnominal, see n.7). Thus the deep structure of a sheep is somewhat different from that offered in (2.10) as a structural analysis of this NP, cf.



The functional relationship of Num is to define the operation of numeral quantification on N.

The phrase marker in (2.13) differs structurally from that in (2.10) by having Num in place of the Article and Determiner nodes. Is this justifiable? One reason for doubting it is the tradition of paradigmatic opposition between a(n) and the: whereas the and the other definite determiners co-occur with numeral quantifiers, they do not combine with a(n);

- 2.14)
- | | | | |
|----|------|---|---|
| a. | the | { | one man
two men
three men
etc. |
| b. | *the | { | a man
an egg |

Yet if a(n) were paradigmatically opposed to the it should also combine with numeral quantifiers; but of course it does not:

2.15) { a(n) hotel
 { one hotel
 *a(n) { two hotels
 { three hotels
 { etc.

So the traditional description of a(n) as an article in opposition to the is not so compelling that it gives reason for abandoning the analysis offered in (2.13). So let us pursue an explanation for the fact that a(n) is apparently both a quantifier and an indefinite article, and try to account for the constraint preventing definites like the from combining with either a(n) or some.

The first thing to tackle is the problem of reconciling the phrase marker in (2.13) with that in (2.10), and in particular explaining how Num, which is close to semantic constituency, becomes Art and Det in superficial syntax. One way round the problem is to do away with the Article node in (2.10) and assume that Det dominates Num; no one who has perused grammar textbooks should find this proposal outrageous. But we could more profitably consider the value of a Det node. The most indisputable determiners (by general consent, not well established argument) are the definite ones the, this, my, etc. and these are traditionally in a paradigm opposition with a(n) and some. But we have already seen that this traditional paradigm does not stand scrutiny; nor will the Determiner node. Looking through grammar texts it would seem that there is a tendency to call a determiner any constituent to the left of the qualifier of the leftmost adjective in the English noun phrase⁸; and the only reason I can think of for this is the avoidance of an embarrassing proliferation of constituents that would otherwise have to be

8. Ross (1966, IV-1) even includes Adjective under Det.

identified as distinct word classes, viz. quantifiers, articles, demonstratives, possessives, numeral quantifiers, and ordinals. Some of these are in paradigm opposition, others are not; there is no function common to all these constituent categories which have been called determiners that will distinguish them from all other leftwing NP constituents. However there are certain characteristics that may be identified with them: they all occur on the far leftwing of NP; their absence defines the generic forms of uncountable NP; they are not deletable by Onesing (the transformation, discussed in Chapter 5, which deletes constituents from NP under a formal identity condition leaving one(s) as the NP head); and finally it is only certain determiners among leftwing constituents that may have number concord with the head of NP. None of these characteristics justifies postulating a special category node; and taken with its catch-all constituency, I conclude that there is no such structural constituent as a determiner node. However, I will use 'determiner' as a term of convenience to refer to all NP constituents that may be located to the left of the Qualifier of the leftmost Adjective (should one be present in NP); constituents such as may be comprised of quantifiers, articles, demonstratives and/or possessives.

If the Det node is not a structural constituent, the binary analysis of the Article into definite the and indefinite a(n) and some has also been called into question. Discussions of the definite article have shown that its relationship with other definites and its complex underlying structure make the traditional syntactic classification of the Article entirely vacuous; cf. Annear (1965), Baker (1973), Lyons (1975), Perlmutter (1970), Sommerstein (1972) and Thorne (1972), among others. All definites represent an assumption by the speaker that his

audience knows the reference of⁹ the NP in which the definite occurs. Some grammarians have attempted to spell this out in cumbersome underlying structure which is in marked contrast to the monosyllabic surface realisation; I offer no apology for the brevity of my own semantic representation of it, viz. THE, because definiteness is only peripheral to the topic of countability. It is, however, necessary to account for the constraints on co-occurrence between definites and a(n), some, and other quantifiers; but first of all we must consider the application of the term 'indefinite article' to a(n) and some. In view of what has been said above apropos the it has become impossible to maintain the opposition the vs. a(n) and some. So far as I can see this destroys the credibility of the Article node as it is usually apprehended:

instead the is aligned with the demonstratives, and a(n) - as we have seen - with numeral quantifiers, along with some. The notion of definiteness lives on; and indefiniteness is no longer restricted to a(n) and some but is characteristic of all NP that are not definite. Thus, not only is a man indefinite, so is three men; and the fact that a(n) is a numeral quantifier does not adversely affect its being indefinite.

Compare

2.16) a. The man called while you were out.

b. A man called while you were out.

2.17) a. The three men were playing poker.

b. Three men were playing poker.

9. "Know the reference of" requires more explication than I have space to give it; but two rough guides to interpretation can be given briefly: "know" here means 'be aware of' and not necessarily 'be acquainted with'; and "reference" means 'reference' and not denotation (see Appendix A) - so a speaker can use a definite with a noun he suspects the audience does not know the denotation of provided the reference of the NP is clear.

The underlined NP in the (a) sentences entail a presupposition on the speaker's part that his audience knows which man (2.16) and which three men (2.17) he is talking about. There is no such presupposition entailed by the (b) sentences. Thus a string of the form given in (2.18) is indefinite:

2.18) NP [# $\widehat{\text{Num}}$...]

Further evidence for this can be supplied. There is a rule that for two or more coreferential NP only the first may be indefinite within a given text¹⁰. Application of this rule shows that NP consisting of the string in (2.18) are indefinite:

2.19) I spoke to an inspector_i about it while he_i was here.

Here the first underlined NP is indefinite, the second definite; the subscript "_i" is a reference index. Compare (2.19) with (2.20) where subscript "_i" again marks the coreference of the underlined NP:

2.20) While he_i was here I spoke to {^{*an}/_{the}} inspector_i about it.

Here the definite NP comes first and so must be followed by a definite NP if that NP is coreferential; this restriction does not hold, of course if "he" and "an inspector" refer to different individuals.

2.21) I asked three labourers_j about it before they_j left.

Here the indefinite NP precedes the coreferential definite NP. In

10. Cf. Well formedness condition WFC 2.3; in the text subsequent to which (p. 62ff) apparent exceptions like the following are accounted for: When you touch it_a a hedgehog_a curls up; It_b's a nasty thing, a cold_b; Staring at them_c makes some people_c blush; Tickling their_d feet makes many people_d writhe; to give in to her_e is the best way to lose a girl_e

2.22) Before they_j left I asked {*three
the three} labourers_j about it.

the conditions are identical with those for (2.20); hence three labourers is as indefinite as an inspector.

The existential NP establishes its reference in the focus of attention when, as is usual, the NP is indefinite; but when the existential NP is definite it recalls its reference into the focus of attention; cf. Allan (1971, 7) and

2.23) There₁'s a man waiting at the door.

2.24) There₁'s John, of course. Don't forget him!

The indefinite existential NP presupposes that the referent has not been in the focus of attention, but there is no such presupposition for the definite existential NP, hence the unacceptability of (2.25) contrasting with the acceptability of (2.26):

2.25) *There₁'s a man we were talking about just now waiting at the door.

2.26) There₁'s the man we were talking about just now waiting at the door.

Exactly parallel to these sentences are

2.27) *There₁ are three men we were talking about just now waiting at the door.

2.28) There₁ are the three men we were talking about just now waiting at the door.

These show that three men, like a man, is indefinite.

The superlative only occurs in definite NP, cf.

2.29) Ali is {*a
the} greatest fighter of all time.

We find that NP consisting of the string in (2.18) can never contain a superlative, e.g.

2.30) *The Marx brothers are three craziest guys whom I ever met.

But there is nothing wrong with (2.31) in which the superlative is omitted, nor with (2.32) in which the NP containing the superlative is definite:

2.31) The Marx brothers are three crazy guys whom I never met.

2.32) The Marx brothers are the three craziest guys whom I ever met.

Finally, there are expressions like a good time girl which are always indefinite except when a superlative is intended: the good time girl cannot have an unstressed "the" and the phrase means 'the best (worst?) good time girl there is'¹¹. These characteristics are also found in NP containing numeral quantifiers, cf.¹²

2.33) Was she ə good time girl!

2.34) *Was she the good time girl!

2.35) Was she the good time girl!

2.36) Were they three good time girls!

2.37) *Were they the three good time girls!

2.38) Were they the three good time girls!

Once again NP with the structure NP [# Num ...] are shown to be indefinite.

Hitherto the node Num has been taken to comprise numeral quantifiers and, by a sleight of hand, some. In fact some is only one of a

11. The facts reported are correct for my dialect, but apparently not for all.

12. In these sentences, and throughout the text hereafter, superscript "ə" indicates an unstressed syllable, and double underlining symbolises contrastive stress.

a number of non-numeral quantifiers that are in paradigm opposition to numerals and should be derived from semantic elements located under Num in NP structure, cf.

- 2.39) a. $\left[\begin{array}{c} \text{three} \\ \text{few} \\ \text{some} \\ \text{many} \\ \text{several} \\ \text{both} \end{array} \right\} \text{men} \left. \vphantom{\begin{array}{c} \text{three} \\ \text{few} \\ \text{some} \\ \text{many} \\ \text{several} \\ \text{both} \end{array}} \right]$
- NP
- b. $\left[\begin{array}{c} \text{three} \\ \text{few} \\ \text{some}^{13} \\ \text{many} \\ \text{several} \\ \text{both} \end{array} \right\} \text{two men} \left. \vphantom{\begin{array}{c} \text{three} \\ \text{few} \\ \text{some} \\ \text{many} \\ \text{several} \\ \text{both} \end{array}} \right]$
- *NP

All the quantifiers listed here with the exception of both are indefinite (that is to say, as indefinite as the indefinite articles) in NP of the form (2.18); I will not offer elaborate proof of this, but invite comparison between (2.21-22) and (2.40-41):

- 2.40) $\left. \begin{array}{l} \text{Some} \\ \text{Many} \end{array} \right\} \text{men}_i \text{ didn't know when I asked them}_i \text{ about it.}$
 When I asked them_i about it $\left\{ \begin{array}{l} * \text{some} \\ * \text{many} \end{array} \right\} \text{men}_i \text{ didn't know.}$
- 2.41) $\left. \begin{array}{l} \text{The} \\ \text{Both} \end{array} \right\} \text{men}_j \text{ were unaware of their predicament when I warned them}_j \text{.}$
 When I warned them_j $\left\{ \begin{array}{l} \text{the} \\ \text{both} \end{array} \right\} \text{men}_j \text{ were unaware of their predicament.}$

Thus, indefiniteness is not restricted to a(n) and some as tradition has it (though see Jespersen 1949, 404f.) but extends to a wider range of phenomena. The point of import to be drawn from the preceding discussion is that the analysis of a(n) as a quantifier is completely compatible with

13. Some can occur in this environment but not as a quantifier, cf. (2.69) below and the discussion relating to it.

the indefiniteness that has traditionally been ascribed to it. Moreover it is clear that this analysis is not only semantically justifiable in the deepest structure but also syntactically justifiable in surface structure. One reason for doubting the value of the Article node in grammar was the fact that the so-called definite article can be more satisfactorily described in terms of its relationships with other definites and deictics than with a(n) and some: in parallel fashion, it now seems preferable to abandon the analysis of a(n) as an indefinite article and describe it instead as a quantifier. However, in what follows I will show that while they may have the semantics of quantifiers, a(n) and some nevertheless have the systematic function of marking indefiniteness.

The decision to derive a(n) and one from a common semantic element leaves the differences between these lexical items to be accounted for. One is that although definites may occur with the numeral, they do not occur with a(n), cf. (2.14b). This problem could be solved during lexicalisation by a condition requiring ONE to be lexicalised as one when it falls within the scope of a definite, though I do not believe this is the correct solution, as we shall see. There is also the fact that one emphasises enumeration, but a(n) does not; which brings to mind Perlmutter's notion that a(n) is the unstressed variant of one. He proposed (Perlmutter 1970, 234 & 246) that the different realisations derive not by lexicalisation, but by a phonological rule which converts unstressed one into a(n). But presumably such a rule entails that only one can be stressed, and this is counterfactual because a(n) may also be stressed, cf. (2.42). There is no way out through relaxing the obligatory application of such a rule, because that would presuppose free variation between one and stressed a(n); this may sometimes obtain,

but certainly not in the following

2.42) A: Did he give you the manual?

B: No, he gave me a manual but not the one I wanted.

Here "a" is in contrast with "the" and it is the indefiniteness of the NP "a manual" which is stressed and not its singularity. Does this necessitate the resurrection of the Article node? It does not, because there is no semantic element 'indefinite' to put under such a node, despite appearances of (2.42). The only phonological means of achieving emphasis on a particular semantic category is by contrastive stress on the surface form conveying the category: thus, emphasis on definiteness is marked by e.g. the, on quantity by contrastive stress on the quantifier, on colour by contrastive stress on the colour adjective, and so on. There is no other phonological means of achieving emphasis for any of these semantic categories; but emphasis on indefiniteness is not restricted to contrastive stress on one constituent, because there is no appropriate constituent. An alternative to (2.42) is

2.43) A: Did he give you the manual?

B: No, he did give me a manual but not the one I wanted.

B's statements are synonymous in (2.42) and (2.43); there is nothing comparable when definiteness is emphasised, cf.

2.44) A: Did he give you a handbook?

B: He gave me the handbook.

(*He did give me the handbook

The sentence with the bracketted asterisk makes no sense in this context, and certainly does not show emphasis on definiteness. Emphasis on indefiniteness in other quantified NP also fails to indicate a semantic category of indefiniteness available for phonological focus, cf.

2.45) A: Did he give you the two books?

B: He did give me two books, but not the right ones.

= He gave me two¹⁴ books, but not the right ones.

2.46) A: Did he return the many books he borrowed?

B: He did give me a lot of books, but none of those he had borrowed.

= He gave me many books, but not any of those he had borrowed.

2.47) A: Did he give you the keys?

B: He did give me some keys, but they don't fit.

= He gave me some keys, but they don't fit.

These examples show that a(n) and some are like other quantifiers in that emphasis on indefiniteness can ignore them altogether and be conveyed by contrastive stress on did, which is the normal means of emphatically asserting the proposition as a whole; but they are unlike other quantifiers in that emphasis on indefiniteness can result in contrastive stress being lodged on them instead of on subsequent NP constituents (up to and including the head). This explains the traditional segregation of a(n) and some as indefinite articles. It is to be expected that those quantifiers that have reduced forms, namely /ə(n)/ and /səm/ from w_Δn/ and /s_Δm/, have the semantics of quantification comparatively repressed in the reduced forms, allowing ascendancy to the inference of indefiniteness. It might be objected that in (2.47) some is not in the reduced form /səm/: but surely this is because the phonological rules of English will not allow a syllabic consonant in a contrastively stressed syllable. Under conditions of

14. Single broken underlining symbolises a comparatively heavy stress which is nonetheless somewhat lighter than the contrastive stress symbolised by double underlining. Elsewhere single broken underlining will be used to mark tonic stress.

contrastive stress not only is /"sʌm/ found instead of /sɪ/, but also /"ei/ instead of /ə/, /"æn/ instead of /ən/, and /"ði./ instead of /ðə/. The predictable phonological changes that result from heavy stressing are necessarily effected by phonological rules on items drawn from the lexicon. Thus the ~~reduplicated~~ form /æ(n)/ will be entered from the lexicon as the phonological equivalent of a(n), and there are no conditions under which it can mutate to /"wʌn/. Which shows how wrong is Perlmutter's (1970) account of the difference between a(n) and one.

I take as a premise that every NP in English is either definite or indefinite, whether or not this is marked: in other words, the speaker has no choice but to assume either that the audience knows or does not know the reference of the NP he utters. But definiteness is only marked on the surface by a distinct morph such as this when there is a possibility that the NP might be indefinite. So, for example, neither universal sets and quantities identified by all, nor generics in the forms of the undetermined k-form, (= the citation form) e.g. in Sugar is sweet, or the bare (= undetermined) plural, e.g. in Spiders are beautiful, can be surface marked for definiteness because there is no way such NP can be indefinite. Similarly, uniquely identified substances, abstracts, individuals, or sets of individuals may be referred to using forms that cannot co-occur with definite morphs like the: for instance pronouns, proper names, and the quantifiers each, every or both. In short, definiteness is only marked when it has to be¹⁵.

15. This is not obviously true for proper names like The Nile, The Cairngorms, The Hague, The Gambia, etc., which I cannot satisfactorily explain away. Although such nouns can be used indefinitely it is only under the same conditions as normally apply when articles are used with bare-noun proper names, conditions that do not hold for the citation forms. Compare a Gambia I once loved, a Paris I once adored, a polluted Thames, a fog-bound London, the Hermione I was married to, etc.

Compare the singular NP

2.48) NP[man]

2.49) NP[the man]

2.50) NP[one man]

2.51) NP[a man]

(2.48) interpreted either as an uncountable generic or as a vocative is implicitly definite, i.e. does not contain a definite morph; the explicitly definite (2.49) does. NP (2.50-51) are indefinite; both have the structure

2.18) NP[# $\widehat{\text{Num}}$...]

which I shall henceforth refer to as the indefinite formula because all NP with the structure of (2.18) are indefinite¹⁶. Thus, should the speaker wish to make indefinite reference and at the same time quantify whatever he is referring to, the resulting NP will take the shape of the indefinite formula and no explicit marking of indefiniteness is necessary; cf. (2.50). Suppose, however, that the speaker wishes to make indefinite reference to an individual without explicitly quantifying whatever he is referring to. In many languages the bare noun can be used for such a purpose; but as (2.48) shows, the singular bare noun (the k-form) in English is either uncountable - and cannot be used to refer to an individual; - or, on very rare occasions, it is vocative - and then implicitly definite. Thus, in making indefinite reference to an individual the grammatical system of English forces a speaker to utilize the indefinite formula, employing a dummy quantifier as an

16. Although the indefinite formula entails that a quantifier is the leftmost predicate on the NP head (and all constituents in between), it is the configuration that indicates indefiniteness and not the quantifier: thus quantifiers combine with definites happily enough, (cf. 57ff) but of course the NP structure is then no longer that of the indefinite formula!

explicit mark of indefiniteness. It is hardly surprising that the dummy quantifier for singular countable NP, a(n), is a derivative of one. One is a true quantifier: it explicitly quantifies and may be found in either indefinite or definite NP, depending on the configuration. By contrast a(n) does not explicitly quantify and will only appear in indefinite NP. Yet one and a(n) derive from the same semantic element ONE, with the result that, for example, a hundred = one hundred; French un(e) - and its translation equivalents in many other languages - can be alternatively translated a(n) or one; both mark singular number and distinguish countable from uncountable NP; a(n) and one are in paradigm opposition to other quantifiers. I conclude there can be no doubt that a(n) implicitly quantifies.

It follows from what has already been said that the indefinite formula applies to NP headed by uncountable nouns and plural countables; so, all the following are (implicitly) indefinite:

- 2.52) NP[four sporrans sewers]
 NP[many nitpickers]
 NP[few grasshoppers]
 NP[little muck]
 NP[much butter-creaming]

2.53) NP[some men]

2.54) NP[some sugar]

In (2.53) two kinds of some can be distinguished. One is the true quantifier as in /'sʌm men/ and

- 2.55) Some ^νmen believe Al Terego will win the fight, but most are backing Caspar Milquetoast.

Here "some" is the explicit paucal quantifier¹⁷. But if (2.53) were pronounced /sʌm 'men/¹⁸ then "some" should be a dummy quantifier, the counterpart of a(n), and explicitly indefinite. But this is not very

17. The evidence that some is paucal arises from such conjoined propositions as

- (i) I like $\left\{ \begin{array}{l} \text{some} \\ \text{a little} \\ \text{a few} \end{array} \right\}$ and not a lot.
- (ii) I like lots and not just $\left\{ \begin{array}{l} \text{some.} \\ \text{a little} \\ \text{a few.} \end{array} \right\}$
- (iii) I'd like only $\left\{ \begin{array}{l} \text{some} \\ \text{a little} \\ \text{a few} \end{array} \right\}$ and not half.
- (iv) I'd like about half, not just $\left\{ \begin{array}{l} \text{some.} \\ \text{a little.} \\ \text{a few.} \end{array} \right\}$
- (v) *I like some and not just a $\left\{ \begin{array}{l} \text{little} \\ \text{few.} \end{array} \right\}$
- (vi) *I like a $\left\{ \begin{array}{l} \text{little} \\ \text{few} \end{array} \right\}$ and not just some.

From the above it is clear that some, a few, and a little all quantify less than a half; and the contradictions that arise when some X is asserted and a few X or a little X denied, show that some is a paucal quantifier. But compared with a few or a little, some is less precise. In stating quantities it is normal to proceed from a vaguer to a more precise statement of a given quantity, though this rule does not hold where a change in quantity is involved. Cf.

- (vii) There are [a few people_i] in the room already; well actually [five_i].
- (viii) *There are [five people_i] in the room already; well actually [a few_i].
- (ix) There are [five people_i] in the room already; well actually [a few more_k].

The sequencing rule governing statements of quantity shows that a few and a little are more precise than some:

- (x) There is some sugar left, only a little.
There are some carrots left, only a few.
- (xi) *There is a little sugar left, only some.
*There are a few carrots left, only some.

18. Contrastive stress on the explicitly indefinite /sʌm 'men/ would give /'sʌm 'men/, not identical with the explicitly quantifying /'sʌm men/.



obviously an accurate description. Any interpretation of (2.54), for example, seems to involve paucity on some scale, and the same must be true of (2.53). With good reason, for although the indefiniteness of singular countable NP must be indicated through the indefinite formula, NP headed by either an uncountable noun or a plural countable can make indefinite reference without recourse to quantification, as we see from the underlined NP of

- 2.56) Water had got into the petrol tank.
 There is sugar on the table.
Sheep were grazing in the field.
 This morning I bought them pens, pencils, crayons and paints.
Ants were coming out of every cranny.

And compare

- 2.57) According to The Militant, ^usome men coming out of the works were mown down by the boss's Rolls causing it minor damage.
 2.58) According to The Militant, men coming out of the works were mown down by the boss's Rolls causing it minor damage.

The paucal quantification of the supposedly dummy quantifier in "some men" of (2.57) contrasts with the unrestricted quantity of "men" in (2.58). It is clear from both this and (2.56) that unquantified indefinites impose no restriction, high or low, on the quantities involved (it would be inexplicable if they did!); but they cannot be generic. Although such unquantified indefinites are formally identical with generic NP which are implicitly definite (cf. p.63ff) the kind of predication made of them distinguishes one from the other; for example, compare There is evidence that mice are rodents with There is evidence

that mice are in our storecupboard.

(2.57-58) demonstrate a meaning difference between an NP involving 'dummy' some and one consisting of a bare noun indefinite. Another example is

- 2.59) a. Men are climbing into the dorm window, she gasped.
 b. Some men are climbing into the dorm window, she gasped.

The difference in meaning between "men" and "some men" is that the referents of the NP consisting of the bare noun are unquantified and may, open-endedly, constitute any number greater than one; by contrast those NP in which some occurs refer to a smallish number - or better, a not remarkably large number - of individuals. Thus in (2.59) the (a) sentence is compatible with only two men, or as many as a hundred, climbing into the dormitory; but the (b) sentence would be inappropriate if there were a hundred climbers, because this number would be remarkably large under the circumstances. It is not always possible, however, to detect any meaning difference between an NP involving 'dummy' some and one consisting of a bare noun indefinite, compare

- 2.60) a. There is sugar on the table.
 b. There is some sugar on the table.
- 2.61) a. This morning I bought them pens, pencils, crayons and paints.
 b. This morning I bought them some pens, some pencils, some crayons and some paints.

The lack of perceivable semantic distinction between (a) and (b) sentences of (2.60-61) probably arises from the situational or contextual constraints on the interpretation of the bare noun formula NP of the former.

There is nothing in the foregoing discussion which shows 'dummy'

quantifier some to be any different from true quantifier some. What about the following:

2.62) Some traitors will be hanged.

2.63) Some traitors will be hanged.

The first of these means 'there are traitors (not many of them) and they will (all) be hanged'; the second means 'there are traitors and some of them (not many) will be hanged.' It would appear from (2.63) that the true quantifier some is partitive, whereas the dummy quantifier of (2.62) is not. However, it is the case that nearly all quantifiers show exactly the same contrast between the nonpartitive when unstressed and the partitive when stressed, including a(n):

2.64) Many }
 A few } traitors will be hanged
 Several }
 Four }

 One }
 A } traitor will be hanged

Many }
 A few } traitors will be hanged.
 Several }
 Four }

One }
 A } traitor will be hanged.

If it were truly the case that the dummy quantifier some could only occur in nonpartitives, the fact that a(n) may occur as a partitive would be very difficult to explain away. Given that the partitive-nonpartitive contrast does not distinguish true quantifiers from dummy quantifiers, I think we might abandon the search for a distinction between a 'true' quantifier some and a 'dummy' quantifier some, and

accept that there is only one some.

Is some primarily a quantifier or an indefinite? Investigating phonological emphases on indefiniteness in (2.43-47) it was discovered that a(n) and some share a characteristic that sets them apart from other quantifiers: on the premise that a(n) is explicitly indefinite and only implicitly a quantifier, its closer association with some than with other quantifiers suggests that some too is primarily indefinite. This is borne out by the fact that some and an are in free variation in

2.66) some other day = another day

some X such that = an X such that

Although not in free variation, some can be used in place of a before few and little:

2.67) Some little sugar had scattered on the floor and was being carted away by ants.

2.68) It will always be believed by some few men that they are the true prophets of God.

Some little and some few strike me as unusual, and although some in such contexts can always be replaced by a the converse is not customary in standard English (though it is in Ghanaian English). In NP like someone, some car or other, "some" again seems to have the same meaning as a(n); which could not, however, replace it. In these NP as in (2.66-68) some does not have the semantic of the paucal quantifier, but it is undoubtedly indefinite. Perhaps more interesting evidence of its indefiniteness are those NP in which some ranges over numeral quantifiers:

2.69) Some five men came through the side door and dispersed in the crowd.

Some forty men rode into town to spend their month's pay.

Jaspar spoke to some twenty girls who all refused his invitation.

In every one of such NP "some" can be omitted without semantic loss. Quite clearly some is not a paucal quantifier here, so its main function should be to mark indefiniteness; in which case it is to be expected that its omission will have no effect since the resulting structure will be the indefinite formula $NP[\# \widehat{Num} \dots]$. It may be that singular some and purely indefinite some give the lie to the claim that there is only one some. But even if they do, what seems to be common to every instance of some is that it occurs in indefinite NP and unlike most other quantifiers it never concatenates with a definite. I think all the evidence points to some being primarily indefinite but secondarily a quantifier, exactly like a(n).

This brings us right back to square one and the problem of representing a(n) and some in NP structure. Because a(n) and some are both semantically quantifiers, they should properly be located under Num. Yet since both a(n) and some may precede certain quantifiers they will need to be located under a node to the left of Num. And because a(n) and some are in opposition to definites, the node under which they should be located will be an alternative to the definiteness node: this is surely to revert to the tradition that a(n) and some are indefinite articles dominated by an Article node.

DEFINITES

The position of definites in the surface structure of NP, when

looked at in the light of the rest of leftwing NP structure, leads one to believe they are predicates ranging over all NP constituents to their right up to and including the head. The predicative nature of definites is illustrated in Bantu languages by the fact that, generally, the same class marker is affixed to possessives, demonstratives, and the objective infixes which serve either as object pronouns or the equivalent of the in the object NP, as are affixed to verbs, but which are not necessarily identical with affixes on nouns. Co-occurrence constraints between definites and quantifiers run on lines that strike me as predictable, but in Perlmutter's dialect would reportedly be utterly wrong (cf. Perlmutter 1970). The use of the explicit definite ^{with} quantifiers is, as elsewhere, governed by the speaker's presupposition that his audience knows the reference of the NP he is uttering; thus it would be contradictory for definites to combine with the explicit indefinites a(n) and some; and redundant for explicit definites to range over implicit definites such as all, both or each. However, given appropriate circumstances most quantifiers can be found within the domain of definites in NP structure without offering violence to one's predictions, cf.

2.70) Max met with Sacks, Jax and Flax, and

{ the four men went to a pub.
 { these few men started the first doughnut friers' union.
 { these several good friends of mine swore to take care
 of my wife while I was in the Antarctic

2.71) Selflessly Cyril selected the eggs, packed and sold them;
 but Euphemia never appreciated the services of her
 one true friend, and at the age of sixty-seven
 espoused Sinister Sid.

2.72) These two fine old beds have had some common experiences:

the one was owned by Emma H —, and the other by Horatio N —.

The following sentences have an interesting origin:

2.73) The many presents I have sent her have all been returned.

2.74) I have discovered that the one original idea in my thesis
was mooted by Jespersen seventy years ago.

These derive through Swooping, Relative Clause Formation, and Wh- be Deletion from structures fairly close to

2.73') I have sent her many presents but they have all been returned.

2.74') There was one original idea in my thesis and I have discovered
that it was mooted by Jespersen seventy years ago.

An underlying structure consists of two conjoined sentences of which S_1 precedes S_2 . S_1 dominates an indefinite NP, call it NP_1 , coreferential with a definite NP, call it NP_2 , that is dominated by S_2 . NP_2 is definite because it is initially the second mention of the reference previously made by NP_1 . The clause of which NP_1 is an immediate constituent (not necessarily S_1) is embedded through Chomsky-adjunction as the relative clause of NP_2 along the lines discussed by Ross (1972a, 80f.). Thus the source for (2.73) and (2.73') is (2.73''); that for (2.74) and (2.74') is (2.74'');

2.73'') S_1 [I have sent her NP_1 [many presents_i] S_1] but S_2 [NP_2 [the many presents_i] have all been returned _{S_2}]

2.74'') S_1 [There was NP_1 [one original idea_j] in my thesis _{S_1}] and
 S_2 [I have discovered that NP_2 [the one original idea_j] was mooted by Jespersen seventy years ago _{S_2}]

The derivation sketched here shows why definite NP can be used when first

introducing a referent provided the NP includes a relative clause. The presence of a true quantifier in the NP is not, of course, a precondition; for example, both (2.75) and (2.75') derive from something like (2.75'')

2.75) We could go in the car I have outside.

2.75') I have a car outside and we could go in that.

2.75'') s_1 [I have NP_1 [a car_k] outside s_1] and s_2 [we could go in NP_2 [the car] s_2]

It will be noticed that the definite morph exists in the NP which ends up as antecedent to the relative clause before Swooping, Relative Clause Formation, and Wh- (be) Deletion takes place; there is no such thing as a definitisation through the derivational process. In every case considered, and by extension all such cases, the clause dominating NP_2 can be embedded as the relative clause on NP_1 , cf.

2.73''') I have sent her many presents which have all been returned.

2.74''') There was one original idea in my thesis which I have discovered was mooted by Jespersen seventy years ago.

2.75''') I have a car outside which we could go in.

(The last two sentences have been subjected to Heavy NP Shift which extraposes the relative clauses.) Clearly the embedding process does not definitise or these triple prime sentences would be impossible. ~~It would seem that a definite morpheme appears in the deep structure of every definite NP.~~

By general consensus all surface NP with the following characteristics are definite: those containing the, this, that, these, those, and possessive adjectives ranging over the NP head; and all NP consisting of personal, possessive, relative or demonstrative pronouns, or

proper names used with unique reference. Presumably, then, all these NP contain a definite morpheme in deep structure. However, there is at least one set of instances where this does not seem to hold. It may have been noticed that the deleted relative pronouns of (2.73, 74, 75) all appear to have been formed on indefinite NP, whereas the relative pronouns of the corresponding triple prime sentences were all formed on definite NP. In (2.76) "which" is apparently formed on the indefinite NP₁ of (2.77):

2.76) John hasn't repaid the ten pounds which I lent him.

2.77) S₁[I lent John NP₁[ten pounds_i] and S₂[John hasn't repaid
NP₂[the ten pounds_i] S₂]

Given (if it should be given) that relative pronouns are definite and never indefinite, a reasonable solution to the problem is to allow that definitising occurs if and only if an indefinite NP is moved behind a coreferential NP to become the second mention of the referent. It is the relative order of the NP which triggers definitising of the second and subsequent instances of the coreferential NP and this is entirely in congruence with everything known about definites. The re-ordering within the sentences under consideration is effected by Swooping, which results in NP₁ becoming the second mention of its referent and so triggers its definitisation. Thus (2.77) becomes (2.76) by the following processes:

S₁[I lent John NP₁[ten pounds_i] S₁] and S₂[John hasn't repaid NP₂[the ten
pounds_i] S₂]
by Swooping =====>

S₂[John hasn't repaid NP₂[the ten pounds_i] S₁[I lent John NP₁[ten pounds]
] NP₂] S₂]
by Definitisation =====>

$$S_2 \left[\dots NP_2 \left[\dots S_1 \left[\dots NP_1 \left[\text{the ten pounds} \right] S_1 \right] NP_2 \right] S_2 \right]$$

by Relative Formation =====>

$$S_2 \left[\text{John hasn't repaid } NP_2 \left[\text{the ten pounds } S_1 \left[NP_1 \left[\text{which} \right] I \text{ lent} \right. \right. \right. \\ \left. \left. \left. \text{John } S_1 \right] NP_2 \right] S_2 \right]$$

There can be no objection that the re-ordering does not make NP_2 indefinite, because of the general principle that (in a given discourse) indefinites may become definite but definites may never become indefinite. Unfortunately, Definitisation is not a natural reflex of movement transformations, cf. When you touch it a hedgehog curls up; It's a nasty thing, a cold; Tickling their feet makes many people writhe, etc. And furthermore pronouns can be formed on indefinite NP, as we shall see. So we can joyfully rid the grammar of the Definitisation transformation.

Definiticity reflects the speaker's judgement of whether or not the audience knows (in the appropriate sense) the reference of the NP he utters; this judgement must depend to some extent on the nature of the reference. At the far end of the definiteness pole are NP which constitute definite descriptions, where the speaker supposes his audience to know the reference such that it is defined uniquely, much as if given a proper name. At the indefiniteness pole are what might be called indefinite descriptions where the reference is defined uniquely for the speaker, but is not known to his audience prior to that particular utterance of the NP. It is significant that in a given discourse, the second reference to a referent of an indefinite description must be by means of a definite description, cf.

2.78) A thieving hound_i has just whipped my T-bone steak! I'm going

to kill	{	him _i the bastard _i *one _i *a thieving hound _i
---------	---	---

(2.78) illustrates the following well formedness condition: WFC 2.3.

Given two semantically identical NP in consecutive sentences,

- i) either the two NP are not coreferential, or if they are co-referential the second one in sequence is definite
- ii) if it is definite the second NP may be coreferential with the first
- iii) if it is indefinite the second NP is not coreferential with the first
- iv) if they are coreferential and the second NP is indefinite, the structure is ill formed.

As further illustrations of this condition we might compare

- 2.79) The cat_j has stolen my sausage, and the cat_j is going to get kicked.
- 2.80) A cat_k has stolen my sausage, and a cat₁ is going to get kicked.
- 2.81) A cat_k has stolen my sausage, and $\left\{ \begin{array}{l} *a \text{ cat} \\ \text{the cat} \\ \text{it} \end{array} \right\}_k$ is going to get kicked.

WFC 2.3 throws up an interesting phenomenon, the pronoun of convenience.

Like other pronouns this avoids repetition of an NP expression, but unlike regular pronouns it is not an indication of coreferentiality¹⁹.

For example consider

- 2.82) Last year I saw people jumping in the fountains on new year's eve, and this year I saw them (at it) again.

"them" refers to people seen jumping in the fountains on new year's eve this year; but it is very unlikely that the speaker intended reference

19. Pronouns of convenience form a proper subset of Geach's "pronouns of laziness", cf. Geach (1968, 124ff.)

to the same people as he saw last year. The pronoun "them" is one of convenience. And it presents us with a dilemma because it is apparently formed on an indefinite NP, cf.

2.83) Last year I saw people₁ jumping in the fountains on new year's eve, and this year I saw people_m jumping in the fountains on new year's eve again.

A pronoun of convenience is, in such instances, indefinite. (It is definite in When the house burnt down we rebuilt it as a bungalow.) This is significant because we cannot henceforth guarantee that any NP pronominalised is definite unless it is known to have been definite before pronominalisation took place²⁰. This is the final nail in the coffin of the chimerical Definitisation transformation (which, as sketched, could not have been applied to (2.83) in any case).

Two kinds of NP are exceptions to the well formedness condition WFC 2.3. There exist well formed sentences containing two consecutive instances of coreferential NP of which the second in sequence is indefinite. The first set of such NP we shall consider are those that make

20. In both Italian and Portuguese, except in NP referring to kin, the possessive pronoun is always preceded by an explicit marker of definiteness or indefiniteness, viz. an article of one or the other kind or some form compounded on the definite article. There is therefore no reason to presuppose that possessive pronouns are definite in Indo-European languages. Yet object pronouns in French are identical with the definite articles, and the masculine subject pronoun in French is identical with the masculine definite article of closely related Italian: so a strong case can be built up for the definiteness of personal pronouns in Romance languages, anyway. Only the impersonal pronouns Eng. one, Fr. on, etc. can be morphologically related to indefinite articles; but then English ~~impersonal~~ they (as in If anyone has any questions could they see me later?) and indefinite expletive it, il, etc. have 'definite' form. Looking into the definiticity of pronouns in this superficial way is like looking into a rotating kaleidoscope; each view seems equally beautiful.

universal reference; they fall into three groups.

(i) General terms

- 2.84) Cats_a are soft and furry, and cats_a make good pets.
Girls with acne_b should use Vanish, the soap to help girls with acne_b lose their spots.
I used to buy coffee_c all the time, but now coffee_c is so expensive we hardly use it any more.
- 2.85) All gorillas_d are strong, and all gorillas_d frighten me - whimpered Tarzan.
- 2.86) Regulations governing all coffee travelling in the diplomatic bag_e are hereby changed. All coffee travelling in the diplomatic bag_e is to be wrapped seven times to avoid detection of its pungent odour....²¹

(ii) Individual terms

- 2.87) A warthog_f cannot be housetrained, and a warthog_f has a bad temper, so a warthog_f does not make a good pet.
- 2.88) Every cigarette_g burns money, and every cigarette_g is bad for you; so why smoke?
Every bomb-damaged property in this street_h will be restored; and the owner of every bomb-damaged property in this street_h will be compensated - said the Minister.²¹

21. Compare (i) and (ii): (i) Cats are animals (ii) All cats are animals
Sugar is sweet All sugar is sweet
The only difference between them is that "all" emphasises the universal scope of the predication. In these particular examples this is redundant because the sentences are analytic; but contrast
(iii) Dogs have four legs (iv) All dogs have four legs
Whereas (iii) is true, (iv) is false. The former allows for exceptions, the latter does not:
(v) Dogs have four legs, although there are dogs with fewer.
(vi) *All dogs have four legs, though there are dogs with fewer.

(continued on next page)

(iii) Restricted universals

- 2.89) After this meeting each soldier_i will be given a map, and just before the exercise begins each soldier_i will be given a compass.
- 2.90) He bought a larger house with a garage big enough for both cars_j; and then both cars_j were repossessed by the HP company.

In each of the sentences (2.84-90) the second occurrence of the indefinite NP may be replaced by a pronoun; but pronominalisation gives no guarantee of definiteness, as we have seen. Indeed, if we compare for example

- 2.84) Cats_a are soft and furry, and cats_a make good pets.
- 2.91) Cats_a are soft and furry, and they_a make good pets.
- 2.92) *Cats_a are soft and furry, and the cats_a make good pets.

we find that the pronoun cannot be substituted for a definite NP because a definite NP, as in (2.92) makes nonsense of the sentence. It follows that either the second occurrence of the NP is indefinite, whether or not it is a pronoun, and WFC 2.3 is violated; or that these NP are implicitly definite in much the same way as a proper name like John (used with unique reference). Compare the following with the three sentences immediately above:

We find the same sort of relationship between generics and NP[every ...]. Compare (vii-viii) with (i-ii), and (ix-x) with (iii-iv):

- (vii) A muskrat is a rodent (viii) Every muskrat is a rodent
 (ix) A dog has four legs (x) Every dog has four legs

"Every" in (viii) emphasises the universal scope of the predication, and it is just this characteristic which makes (x) pragmatically false. What (iii-iv) and (ix-x) show is that a predication on the generic defines a characteristic of the genus, whereas a predication on an NP quantified by all or every defines a characteristic of the members of a genus.

2.93) John is sweet and John can kiss me any time he likes -
said Amy.

John is sweet and he can kiss me any time he likes -
said Amy.

*John is sweet and the John can kiss me any time he likes
- said Amy.

NP making universal reference are comparable with NP making proper name reference in that, for some particular world, the denotation of both kinds of NP is co-extensive with their reference. That is, the reference of any instance of such NP will always be the same: thus compare the referring proper name Queen Elizabeth I of England which exclusively refers to the same person whenever it is used, with a queen of England or even the Queen of England which on different occasions have different referents. And similarly compare all cats or generic cats, which have exclusive reference to the same class of objects every time they are used, with some cats, three cats, or even these cats which on different occasions of employment have different referents. Thus the speaker can assume that NP making universal reference make reference that is known to his audience; such NP are therefore implicitly definite. Because there is no occasion on which these NP may be indefinite, marking for definiteness is unnecessary. Those readers who noticed that in (2.86) and (2.90) the repeated NP can be marked as definite, now have an explanation to hand: they are marked definite just where the speaker does not take for granted the scope of the universal; thus in (2.85) the speaker cannot have any doubt about the universal application of "all gorillas", and definite marking of this NP is impossible.

Presumably the fact that NP making universal reference are implicitly definite saves them from violating the well formedness condition WFC 2.3

But evidence that their implicit definiteness allows them to slot into other definite contexts is hard to come by, mostly because it is uncertain how exclusively definite contexts are to be identified. For example Postal's (1966, ex.7) framework Adj as NP_z be, S in which "NP_z" is supposedly definite, allows all sorts of indefinites in, cf.

2.94) Broken as some pots were, the find was in exceedingly good condition.

Interesting as several lectures were, we felt the conference a waste of time.

Expensive as a pound of fish is, we eat it every Friday.

Etc.

Even though NP making universal reference slot into the construction, it is no proof of definiteness.

2.95) Tough as all mafiosi are, Milquetoast is undaunted.

Ugly as each girl was, Casanova had to lay her.

Strong as gorillas are, Tarzan can handle them.

Etc.

Similarly flawed is Postal's trial by possessive predication (op. cit. ex.8); according to Postal in the construction NP_y be Possessive "NP_y" is definite. Not necessarily so, cf.

2.96) Those books are mine.

Several books are mine.

Two books are mine.

Some books are mine.

Etc.

Right Dislocation applies to definite and generic NP, but not to indefinite NP and, unfortunately, not to NP quantified by all, every, each

and both:

- 2.97) He's a nut, that guy.
 They're lost, those six books.
 He's a goner, Jake.
 They are ungulates, buffaloes.
 They are sweet, passion fruit.
 It's a nasty thing, a cold.
 It hurts, a punch in the eye.
 It's dangerous, a viper.

- 2.98)²² *He's a nut, a guy.
 *They are lost, six books.
 *It's in the storecupboard, a mouse.
 *They are vicious, all crocodiles.
 *She has high hopes, every starlet.
 *He's a hero, each man.
 *They are cute, both children.

I do not believe this proves it true that generic NP are definite, and NP containing universal quantifiers are not. It puts rather a heavy weight on a constraint governing the input to Right Dislocation to use it as the sole witness in the case. And after all, the fact that NP with universal quantifiers can be subject to a possessive predication, but generic NP cannot, has nothing to do with definiticity (though it may have something to do with specificity).

22. The sequence in (2.98) will occur from time to time when the speaker has uttered the first clause and then realises his audience has too little information to interpret the pronoun correctly; on such occasions the final NP is introduced as a corrective after thought, and is not a product of Right Dislocation. The string that results is, of course, dissimilar from (2.97) where the sequence is planned, and executed through Right Dislocation. Not surprisingly the acceptable version of (2.98) has a different prosodic structure from (2.97).

- 2.99) Every trick is mine.
 Each trick is mine.
 Both tricks are mine.
 All tricks are mine.
 *Cats are mine.
 *A cat is mine.
 *The cat [sc. generic] is God's.

There is only one, rather creaky test, which may serve our purpose. Sentences consisting of a classificatory predication in which the semantics of the predicate head constituent are necessarily entailed by the semantics of the subject NP head (on a reading), are constrained by a well formedness condition requiring the subject NP to make universal reference, or else to be a definite NP with tonic stress laid on its head constituent. Indefinite subjects are inadmissible.

- 2.100) An albatross is a rare bird.
 The whale is an animal.
 Cats are animals.
 Every mouse is a rodent.
 All horses are quadrupeds.
- 2.101) My cat is an animal.
 This cow is an ungulate.
 Each toad is an amphibian.
 Both mice are rodents.
- 2.102) *One cat is an animal.
 *Sixty blue tits are birds.
 *Some leopards are feline.
 *A few ants are insects.
 *A mink Fluzy Suzy wore was a coat.

I have to admit that none of the sentences in (2.101) is topnotch, but they seem to be quite acceptable as instructive sentences addressed to a young child, say. Perhaps at last we have found an environment which can identify definite NP, and if so NP making universal reference are shown to be definite - which was argued on logical grounds earlier.

The fact that generic NP with the 'indefinite' article seem to be definite should well and truly upset the apple-cart; but I do not believe that it does. The defense^c lies in the fact that NP like a cat, the cat, cats, and sugar may be either generic or nongeneric: there is no surface indication by constituent or configuration of genericness. What determines whether such NP are generic or not is the prediction on them. It follows that any grammatical representation of genericness must be a projection onto the NP and not a part of their intrinsic structure. In consequence we should not find the semantic element THE in the internal structure of generic NP other than the intensional generic, such as the cat. Since three of the four NP configurations which may function as generics are intrinsically indefinite, it is grossly misleading to describe them as definite. At best they might be labelled definitised but a transparently accurate description would be WFC 2.4:

Where an NP of a certain configuration is predicated as generic,
it may occur in contexts otherwise restricted to definite NP.

The significance of this for the present thesis is that generic NP do not contain any representation of genericness or of definiteness within NP structure.

NP containing a universal quantifier are attributed with implicit definiteness as a result of the quantifier; thus no definite morph is necessary in their deep structure either. Where a definite does occur,

following all or both, it is required as a restriction on the scope of the universe referred to.

Generic NP only exist within the scope of a generic predication; it is their predication which causes some NP to be generic, and to project on them a definiteness not contained within the NP themselves. I think it is clear from Dahl (1975), though he never proclaims it, that generic predications do not only take for their arguments the kind of NP that have traditionally been regarded as generic. For example it seems to me that the following sentences are generic in that they make law-like statements:

- 2.103) Staring at some people_i makes them_i blush.
 2.104) Tickling many people's_j feet makes them_j writhe.
 2.105) Stroking a cat_k makes it_k purr.

Presumably, then, the NP "some people", "many people's feet", and "a cat" are all generic NP. In fact "a cat" here would traditionally have been called a generic anyway, despite the fact that it is not genus-denoting. If these NP are indeed generic, then they presumably are definitised; so we would predict that inverting the order of the co-referential pronoun and indefinite NP will not violate the well formedness condition WFC 2.3. And we would be right:

- 2.106) Staring at them_i makes some people_i blush.
 2.107) Tickling their_j feet makes many people_j writhe.
 2.108) Stroking it_k makes a cat_k purr.

Finally, consider the following pairs of sentences:

- 2.109) a. If a Lamborghini is what John wants, a Lamborghini is what he'll get.

- b. If a Lamborghini is what John wants, the Lamborghini is what he'll get.
- 2.110) a. If there are lots of mosquitoes there, we'll simply have to put up with lots of mosquitoes.
- b. If there are lots of mosquitoes there, we'll simply have to put up with the lots of mosquitoes.
- 2.111) a. Two lectures are what I was asked to give, and two lectures I shall insist upon giving.
- b. Two lectures are what I was asked to give, and the two lectures I shall insist upon giving.

Either the (a) sentences are in violation of the well formedness condition WFC 2.3, or the NP repeated in them are not coreferential, or these NP are yet further examples of definite indefinite NP. (In every case the second of the repeated NP may be pronominalised; but as we have seen, that proves nothing about their definiteness.) The particular NP we are considering are nonspecific NP, which is to say that the speaker does not presuppose, and is unwilling to guarantee, the existence of any referent for the NP (cf. the section on 'specificity' which follows shortly). Thus in (2.109) John wants some object provided that object satisfies the description "a Lamborghini" but (according to this speaker anyway) no particular Lamborghini has John's emotional deposit on it. Thus, when we come to the second clause relating the car John will get, the Lamborghini may be referred to as exactly the car John wants - which is the sense of (2.109b); or alternatively as some Lamborghini or other but not necessarily exactly what John has in mind (e.g. he may get a red one when he wants a green one). Thus, it seems to me, the repeated NP in the (a) sentences are not coreferential - or not assuredly so; whereas those in the (b) sentences are. So WFC 2.3 is

not violated by examples like (2.109-11), nor do these contain indefinite NP with a hidden definite ingredient.

In this section I have briefly discussed some of the problems arising from the need to represent definiteness in NP structure. For convenience I shall represent definiteness by the semantic element THE, although there is considerable force to Lyons's (1975) arguments that surface the is the spelling of weak nondemonstrative that, which he calls "that₁" on analogy with nondemonstrative existential there₁ (cf. Allan 1971, 1972). Mother of THE is the definiteness node which dominates the semantic composition of the (naturally) and the demonstratives this, that (that₂), these and those. Some such node is a prerequisite for the mapping of the locatives there₂ and here onto NP or Prep P configurations. It is also a prerequisite, in my view, for the mapping of proper names onto NP structures²³. However, I conclude from the discussion above that definiteness is not a precondition for the locating of personal, possessive or relative pronouns in NP.

In the course of this discussion on the composition of the far leftwing in NP structure I have reverted to the traditional view that explicit definiteness and explicit indefiniteness are rivals for the same position - what would traditionally have been called an Article node. I will postpone a more precise description of this node, and its relationship with other nodes on the far left of NP structure until after we have considered specificity.

23. Many people would not agree that proper names can be inserted into NP like other lexical items and I do not have space for a proper defense of my position: but consider that John, like boy is both singular countable and male so that *John are good, and *John is good, isn't she, etc. are normally ill formed sentences; but cf. Appendix A, p. A-3.

SPECIFICITY

Specificity is not unlike definiticity: definiticity indicates the speaker's judgement of whether or not the audience knows the reference of the NP he is uttering; specificity indicates whether or not the speaker knows the reference of the NP he is uttering. Thus the reference of a specific NP is presupposed by the speaker to exist, and therefore guaranteed existence by him in the circumstances expressed by the utterance containing the NP. The specificness of a noun phrase is rarely made explicit, but it can be spelled out by embedding the NP in an existential clause and contingently reorganising the sentence from the structure it would otherwise have had; for example the subject NP of (2.112) is specific, a fact made explicit in the paraphrase (2.113):

2.112) Several linguists were in the corner practising mute vowels.

2.113) There were several linguists in the corner practising mute vowels.

The reference of nonspecific NP is not presupposed by the speaker to exist under the circumstances related in the sentence or its context; either he is unwilling or unable to guarantee its existence. This can often be spelled out by embedding the NP in a non-affirmative existential clause, or, under certain circumstances, by including any within NP structure. For example, the subject NP of (2.114) is nonspecific and may be paraphrased by (2.115):

2.114) Any traitors will be hanged.

2.115) If there are traitors then they will be hanged.

Notice that in (2.115) "if" ranges over "there are traitors", and nothing else, making the existence of traitors hypothetical. To occur as an existential NP in a conditional clause is not sufficient, however, to

guarantee the nonspecificness of the NP; consider:

- 2.116) If there is a meat hook in his arm, shouldn't we do something about it?

Here it is not the existential NP "there is a meat hook" which constitutes the scope of "if", but the proposition 'a meat hook is in his arm'. Thus (2.116) illustrates the structure if S, where specificity is irrelevant, but (2.115) illustrates if NP_q in which "NP_q" is nonspecific.

Another favoured environment for nonspecific NP is the nonfactive context supplied by the direct object of verbs of wanting, wishing, hoping, believing, preferring, etc. E.g.

- 2.117) Mabel Birdwhitt hopes to find a cuttlefish for her budgy in the Mersey Sound; any cuttlefish will do, she says.

Here "a cuttlefish" is nonspecific as the consecutive "any cuttlefish" shows; but NP in this environment are not necessarily nonspecific and in (2.118) "a small busted girl" may be interpreted as either specific or nonspecific - some help is given with these interpretations in (2.119) and (2.120) respectively:

- 2.118) Since he broke with Norma Samory, old Nugent-Wink fancies marrying a small busted girl.

- 2.119) There is a small busted girl that old Nugent-Wink fancies marrying since he broke with Norma Samory.

- 2.120) Since he broke with Norma Samory, old Nugent-Wink fancies marrying a small busted girl; if there is such a girl who will have him.

Although most definite NP are also specific, definiteness does not necessarily entail specificness: recall that definiteness is an assumption

by the speaker that his audience knows the reference of the NP he is uttering; specificity indicates that the speaker presupposes the existence of the NP reference; so the two are in principle independent. Compare the following sentences:

2.121) John's bought a car and $\left\{ \begin{array}{c} \text{John's car} \\ \text{the car John has bought} \\ \text{it} \end{array} \right\}$ is like everything else about John - flashy!

2.122) John wants to buy a car, any car, but $\left\{ \begin{array}{c} \text{it} \\ \text{John's car} \\ \text{the car John buys} \\ \text{any car John buys} \\ \text{any car of John's} \end{array} \right\}$ will be like everything else about John - flashy!

All the underlined NP in (2.121) are specific: the speaker guarantees the existence of their reference²⁴. In (2.122) the existence of a referent for the underlined NP is hypothetical; the speaker cannot guarantee its existence. The definite NP within the braces are justified by the well formedness condition WFC 2.3 which requires that the second mention (and all subsequent ones) of an NP coreferential with another be definite; here, the audience has been made aware of the referent, albeit hypothetical, on its first mention²⁵. Notice that the first of the conjoined sentences of (2.122) can be Swooped into the second when the latter has the form 'the car will be like everything else about John - flashy!', and after Relative Clause Formation and Wh- be Deletion, the result will be

2.123) The car which John wants to buy will be like everything else about $\left\{ \begin{array}{c} \text{John} \\ \text{him} \end{array} \right\}$ - flashy!

24. This can be brought out explicitly in the sentence
There is a car which John has bought and the car that there is that John has bought is like everything else about John - flashy!

A sentence which no one would ever consider uttering outside of a dissertation in grammar or philosophy.

25. Recall the discussion of (2.109)

"The car ..." is nonspecific.

Every NP is either specific or nonspecific, and whether or not specificity is marked by surface forms it will have to be represented somehow in the model in order to account for the grammar of sentences like

2.124) * S_1 [NP_1 [Two boys here] want NP_2 [coffee] S_1], only S_2 [there are no boys S_2]

2.125) S_1 [NP_1 [Two boys here] want NP_2 [coffee] S_1], only S_2 [there is no coffee S_2]

In both sentences the NP_1 of S_1 , "two boys here", is specific; the speaker presupposes the existence of the boys. In (2.124) the speaker contradicts this presupposition in S_2 by denying the existence of the boys and thus making (2.124) anomalous. In both (2.124) and (2.125) the NP_2 of S_1 , "coffee", is nonspecific: viz. the speaker is unable to guarantee the existence of coffee under the circumstances prevailing in the situation of utterance. So that when in (2.125) he goes on to say that there is in fact no coffee, he utters no contradiction of his presupposition - and there is no anomaly. The grammar of (2.126) is to be explained in exactly the same way, the relative order of the NP in a string has no bearing on their specificity:

2.126) *Coffee was being asked for by two boys out there, only there are no boys.

Coffee was being asked for by two boys out there, only there is no coffee.

And it is not only indefinite NP that will have to be marked for specificity, so do definite NP; compare

- 2.127) *The car Max has bought had to have an infra-red grill under the dash, but thanks to Ralph Nader no such car exists.
- 2.128) The car John wants to buy must have an infra-red grill under the dash, but thanks to Ralph Nader there is no such car.
- "The car Max has bought" is a specific NP so the denial of the existence of such a car is anomalous; but in (2.128) "the car John wants to buy" is nonspecific so that the denial of the existence of a referent for this NP is permissible. Whether or not specificity is surface marked, the specificity of each NP has to be represented in the model in order to account for the grammar of (2.124-128). Presumably specificity will be included in presuppositional structure in those cases where it is not spelled out in syntactico-semantic structure; in any event, because even the explicit marking of specificness and nonspecificness involves embedding the NP in an existential clause of one kind or the other, which cannot be accommodated within the regular configuration of NP structures, the representation of specificity mostly lies outside the scope of my thesis. However, we are left with any - a marker of nonspecificness - as the only mark of specificity that assuredly falls within the structure of the noun phrase.

Any NP which does not contain any may occur in either specific or nonspecific contexts, any which contains any, viz. NP[any ...], is prohibited from explicitly specific contexts. That is why NP[any ...] cannot be embedded in an affirmative existential clause to be predicated as an existent -

- 2.129) *There are any featherless turkeys on the market.

*There is any cockroach soup left. Goodie.

In the first of these sentences NP[any ...] indicates the speaker refuses to guarantee the existence of featherless turkeys on the market, but this

In the botanical gardens there is a tree of any kind you
want to see.

2.133') There are these lovely china ducks, yours for only 90p for
any {one
six

There is no constraint against NP[any ...] being embedded in inter-
rogative, negative, or hypothetical existential clauses, all of which
provide nonspecific contexts. As we see from (2.134) any looks to be
in paradigm opposition to the other quantifiers:

2.134)	Are there There aren't I'll eat my hat if there are	}	{ some a few several many thirty any	}	girls basking topless on Morecambe Sands.
--------	---	---	---	---	--

But any does not quantify in the same sense that three or many or some
or no quantify. Compare the following sentences, in all of which the
NP are nonspecific:

2.135) Are there three eggs left?

2.136) Are there many eggs left?

2.137) Are there some eggs left?

2.138) Are there no eggs left?

2.139) Are there eggs left?

2.140) Are there any eggs left?

Although there must be some cause for the quantifying of the eggs in
(2.135-138) such as a prior affirmation of the existence of such a quan-
tity by somebody else, or perhaps a situation requiring the given quan-
tity of eggs, we need not be concerned with this. These sentences have
roughly the sense

2.141) I [the speaker] do not presuppose there to be {three
many
some
no} eggs left,

so I question the supposition that there might be.

(2.139) has the comparable sense,

2.142) I [the speaker] do not presuppose there to be eggs left, so
I question the supposition that there might be.

Now (2.140) has exactly the sense of (2.142), which explains why it can be the preferred form for (2.139) - the latter being the kind of sentence more likely to be spoken than written. This being the case, it would appear that any simply spells out the nonspecificness of an unquantified NP.

Too hasty a conclusion that is, of course, for any is like some in that it may precede numerals, few and little (cf. (2.69)):

2.143) Send me three men immediately; any three men.

2.144) We had to live off any little meat mother could scrounge
from the butcher's boy.

2.145) Any few miles on a flat ^ftype wrecks it, and on a murrum
road the wheel gets ruined too.

But any cannot precede any of the other quantifiers - and nor can some. This suggests that its proper location in the NP configuration is the position otherwise held by a(n), some, or the definites.

There is one use of any which we have yet to consider, though we shall only confirm all that has gone before. Consider the sentence

2.146) I'll take any salami you have.

With tonic stress on "salami" this means

2.147) If there is (any) salami then I'll take it.

With tonic stress on "any" it means

2.148) I'll take some salami but I don't mind which kind.

To get this reading (2.146) can only be used in a situation in which reference to a kind of salami can be construed, and it may be used when the speaker presupposes the existence of some salami but is uncommitted about the existence of a specific reference, viz. a kind of salami, for him to take; a reading, it will be noted, similar to those given for the [NP of NP] phrases in (2.131-133). This was to be expected since we found that nearly all quantifiers express a 'partitive' sense when the tonic falls on them, cf. (2.62-65). I shall discuss the grammar of partitives and like structures in Chapter 4.

The sole representative of specificity in NP structure is the word any. It is not the negative supplement to some as many people aver²⁶, but a modal operator which indicates that the speaker does not presuppose the existence of the reference of NP[any ...].

RELATIONS BETWEEN CONSTITUENTS ON THE FAR LEFT

I shall take a very restricted view of the far leftwing in NP structure and discuss only the constituency and relationship of the two nodes necessary to account for those constituents of the far left introduced during the preceding discussion. These two nodes, the Article node and the Num node, are what I mean in this thesis by the term 'determiner'. Thus a determined noun is a noun predicated by one or both of them, and an undetermined noun is one not predicated by either²⁷. The Article is the leftmost determiner node, and the Num node is the rightmost. In a less fragmentary grammar of the noun phrase than this is

26. See Stockwell et al. (1973) for a survey of such views.

27. Similarly, a 'determined NP' is one containing one or both of Article and Noun; and an 'undetermined NP' is one containing neither.

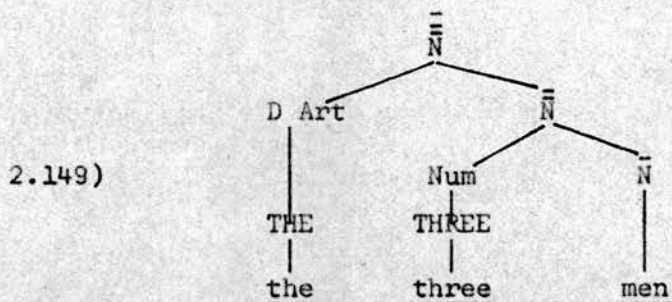
there should be provision for at least one intervening node to dominate nouns of sameness and difference (e.g. other), and ordinals such as first or forty-ninth; but these I shall ignore. Neither at this juncture shall I take account of well formedness conditions governing countability and number concords, important though these should be, because there has been no proper discussion of these topics so far. And having drastically restricted the scope of the ensuing discussion in these ways it would be frivolous to write well formedness conditions in any way other than very informally.

The Article node dominates articles of two major types. Determinative Articles consist of the, demonstratives this, that, these, those, and the possessive pronouns my, your, her, his, its, our, their²⁸. Quantifying Articles comprise the nonspecific article any, the explicit indefinites a(n) and some, and the universal quantifiers each, every, both and all.

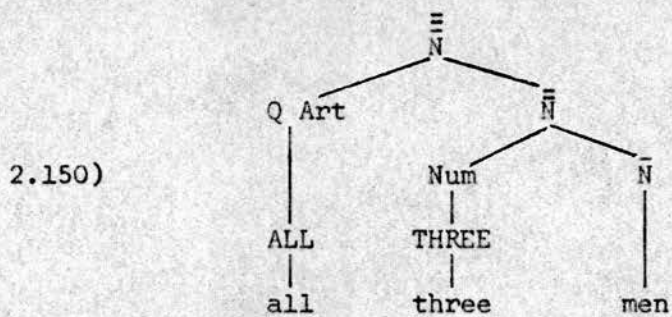
The Num node controls the appearance and constituency of the Article node. It dominates three classes of quantifiers each type imposing a different kind of co-occurrence constraint on any accompanying Article node. Free quantifiers comprise all numerals, and fractions, few and little, and may combine with any article, subject to constraints of number and countability concord. Restrictive quantifiers many and several may only fall within the scope of a Determinative Article, never a Quantifying Article. Finally, the exclusive quantifiers much, enough, and either cannot co-occur with any article, and so block the appearance of the Article node.

28. I earlier argued that possessive pronouns, like personal and relative pronouns, may be formed on indefinite NP; but whether definite or indefinite they pattern like definites. This needs further investigation.

Thus, the string the three men will have the structure



The string all three men will have the structure



The following NP seem to belie the claim that the Article node is the leftmost within NP structure:

2.151) all the three men

2.152) both those avocados

2.153) half my knitting

Either "all", "both" and "half" are prearticles, or the NP in (2.151-153) are complex. In favour of the latter explanation is the fact that these NP are in all ways semantically equivalent to

2.154) all of the three men

2.155) both of those avocados

2.156) half of my knitting

There is no doubt that (2.154-156) are complex NP generated by the same principles as a very large number of partitive and partitive-like constructions, from which, it seems reasonable to propose, the comparatively

rare strings like (2.151-153) are derived. The bracketting for (2.151-153) will be

2.151') NP[QP[all] NP[the three men]]

2.152') NP[QP[both] NP[those avocados]]

2.153') NP[QP[half] NP[my knitting]]

("QP" is a Quantifying Phrase, which can for the time being be thought of as rather like an NP headed by a quantifier; QP are discussed in detail in Chapter 4.) Thus we can maintain that the Article node is indeed the leftmost node of a simple NP, and so the following well formedness condition obtains: WFC 2.5

The bar-N node which directly dominates an article node is converted into an NP node.

Chapter 3

THE RIGHTWING OF NP

The rightwing of NP is not at all relevant to the grammar of singularity and plurality, and I shall briefly discuss it only to round off the picture of NP structure.

Prepositional phrases, adjective phrases, nonfinite clauses, and restrictive relative clauses¹ are members of the rightwing, and there is evidence of a similar process of derivation for all of them. Should this be true, all the rightwing would be introduced from outside of the NP by a movement transformation, namely Swooping; and it might well account for difference in nature between leftwing and rightwing specification of the head: the NP's leftwing makes a characteristic or typical ascription, whereas its rightwing makes a temporary or contingent ascription (cf. Allan 1973, 384f.).

Nonfinite clauses are tenseless, sometimes aspectless, and restricted as to the modality that can be expressed; ~~In a word~~ ^{therefore} they are generally less explicit than a corresponding relative clause and can only be used when their deficiency - if that is really what it is - is deemed unnecessary to the communicative purpose. Take the sentence

3.1) The girl kissing Jake is to be my wife - said Rocky Frenzy,
 the popstar.

1. Although restrictive and nonrestrictive relative clauses come from the same nest, they Swoop down to trees of different configurations. Both take a perch immediately to the right of the NP_a which is identical with one of their own NP_r; but whereas nonrestrictives are fostered by the S closest ancestor^r of NP_a, restrictives are Chomsky-adjoined to NP_a.

One can imagine contexts in which "the girl kissing Jake" would be equivalent to one or another of the following,

- 3.2) a. the girl who was kissing Jake
 b. the girl who is kissing Jake
 c. the girl who kisses Jake
 d. the girl who will kiss Jake
 e. the girl who can kiss Jake
 f. the girl who dares to kiss Jake
 etc.

I do not propose that (3.1) is actually derived from any of (3.2): it neither can nor should be - any more than you should be represented as a pronominal form for Ali, Benjamin, Comfort, Grace, or whomever the speaker is addressing. The interpretation given to (3.1) on some occasion of use cannot and should not be captured by the syntactico-semantic source for the phrase "the girl kissing Jake"; which should contain no more semantic material than can be gleaned from the denotation of the phrase. I suggest therefore that the grammar generates nonfinite clauses directly. Those which end up in the rightwing of NP start off in apposition to the sentence dominating that NP and swoop down like any relative clause. Thus the starting point for (3.3) is (3.4), which swooping converts into (3.5):

3.3) The girl sitting there is my sister.

3.4) $S_1 [NP_1 [\text{the girl}] \text{ is my sister } S_1]$, $S_2 [NP_2 [\text{the girl}] \text{ sitting there } S_2]$
 = The girl is my sister, the girl sitting there.

3.5) By swooping

$S_1 [NP_0 [NP_1 [\text{the girl}] S_2 [NP_2 [\text{the girl}] \text{ sitting there } S_2] NP_0]$
 is my sister $S_1]$

Instead of Relative Clause Formation following Swooping, as it does when a finite clause is Swooped, nonfinite Swooped clauses suffer obligatory Equi-NP Deletion. This once and for all disposes of the problems presented by the misnamed Wh- be Deletion transformation (cf. n.3 of Chapter 2) by dispensing with the need for it. Equi-NP Deletion knocks NP₂ out of (3.5) leaving

3.6) $S_1 \left[NP_0 \left[NP_1 \left[\text{the girl} \right] S_2 \left[\text{sitting there} \right] NP_0 \right] \text{ is my sister } S_1 \right]$

Which is a rudimentary structural description for (3.3).

Various modalities can be represented explicitly in nonfinite sentences, e.g.

3.7) The girl able to kiss Jake must be senseless.

3.8) The girl having to dash off is Thea Ugo.

3.9) The girl to kiss Jake is Fluzy Suzy.

The last can be used to mean either of

3.10) a. The girl who ought to kiss Jake is Fluzy Suzy.

b. The girl who will kiss Jake is Fluzy Suzy.

Note that the infinitive clause is aspect carrying; compare (3.9) with

3.11) The girl to be kissing Jake is Fluzy Suzy.

3.12) The girl to have kissed Jake is Fluzy Suzy.

3.13) The girl to have been kissing Jake is Fluzy Suzy.

The participial nonfinite is always passive, cf.

3.14) a. The story is not even fiction, the story told by those liars.

b. The story told by those liars is not even fiction.

3.15) a. The lecture is on roundworms, the lecture being given in

theatre A.

- b. The lecture being given in theatre A is on roundworms.
- 3.16) a. The story was written by Nicodemus, the story to be read
this morning.
- b. The story to be read this morning was written by Nicodemus
Etc.

The repetition of the identical NP in the (a) sentences of (3.14-16) can be avoided by pronominalising the NP in the finite clause. The order of clauses may then be inverted, cf.

- 3.17) It is not even faction, the story told by those liars.
- 3.18) The story told by those liars, it is not even faction.
- 3.19) ??The story told by those liars, the story is not even faction.
- I do not know why (3.19) is bad and why it can be made acceptable by replacing the second "the" with that.

If predicative adjectives are like participial verb forms in that they cannot function as the main predicate in finite clauses without supportive auxiliaries, then the rightwing adjectives are surely just like nonfinite clauses on the rightwing. Take the sentences

- 3.20) My father is the man, the man responsible.
My father is the one, the man responsible.
- 3.21) He is my father, the man responsible.
The man is my father, the one responsible.
- 3.22) She is an asset, the girl loyal to the firm.

Underlying these sentences are, roughly speaking, the following;

- 3.20') S_1 [My father is NP_1 [the man] S_1], S_2 [NP_2 [the man] responsible S_2]
- 3.21') S_1 [NP_1 [the man] is my father S_1], S_2 [NP_2 [the man] responsible S_2]

- 3.22') S_1 [NP₁ [the girl] is an asset S_1], S_2 [NP₂ [the girl] loyal to
the firm S_2]

By applying Swooping and then Equi-NP Deletion to these structures we get

- 3.20") My father is the man responsible.
3.21") The man responsible is my father.
3.22") The girl loyal to the firm is an asset.

So I conclude that all nonfinite clauses on the rightwing of NP, including rightwing adjectives, begin their existence in very much the same position as relative clauses, with the difference that they are nonfinite. Like relative clauses they are introduced into NP structure by Swooping down from a position outside the clause in which they are finally embedded.

In Allan (1973) it was argued that complement prepositional phrases predicate their subject NP just as well as adjectives do. In that case they too are like participial verb forms in requiring a supportive auxiliary if they are to occur as the main predicate of a finite clause; and they too can be generated as the predicates of nonfinite clauses.

- 3.23) The cupboard in the hall, it's got mice in it.
The cupboard in the hall's got mice in it.
3.24) It's frightfully boring, his treatise on circumcision rites.
His treatise on circumcision rites is frightfully boring.
3.25) The road has too many traffic lights on it, the road to Wigan
Pier.

The road to Wigan Pier has too many traffic lights on it.

The nonfinite "the road to Wigan Pier" corresponds to the finite clause

the road goes to Wigan Pier; illustrating an asymmetry in morphological structure which is surprising in view of the similarity in meaning. This observation applies equally to the correspondence between the nonfinite the girl with green eyes and the finite the girl has green eyes; and also to the finite correspondences to NP of NP phrases, e.g. the basket of woven cane and the basket consists of woven cane; the basket of mine and the basket belongs to me; that book of John's and that book was written by John; that table of John's and that table was made by John; a sister of Max's and *a person sisters Max²; the Mayor of London and *the person mayors London³. On the other hand there are morphological correspondences between semantically similar nonfinite prepositional (phrase) predications and finite predications with verbs and adjectives, cf. the absence of an explanation and an explanation is absent; the existence of another Miró and another Miró exists; the cost of paint and what paint costs; a need of it and it is needed; the taste of honey and what honey tastes like, etc. see exx.(4.63). There is no derivational connection between the nonfinite prepositional (phrase) predicates and the predicates of the corresponding finite clauses; on the contrary, the grammar must generate rightwing prepositional phrases directly just as it must generate nonfinite participial clauses directly.

My argument is that rightwing prepositional phrases have a similar origin to nonfinite clauses with participial or adjectival predicates and to finite relative clauses, such that all rightwing constituents of NP are introduced into NP structure by Swooping. This surely accounts for the fact that rightwing constituents as a rule make temporary or contingent ascriptions to the NP reference compared to the characteristic or typical ascriptions made by leftwing constituents, which originate in NP structure. This is the very justification for invoking Swooping

2. Cf. McCawley (1973)

3. Cf. Lakoff (1965)

instead of generating the various kinds of nonfinite clauses in situ. Furthermore such clauses do appear in apposition to the finite clauses in which Swooping embeds them, even if they do not look too good there (but then, neither do the finite clauses before Swooping down to be relatives); so they are going to have to be generated in such positions irrespective of their derivation in NP. In which case the Swooping argument for the rightwing of NP adds no extra rules, yet it explains the similarity in rightwing specification of the head by the different kinds of constituents as well as accounting for its peculiar nature compared with the leftwing. I regret that shortage of space, which forbids exhaustive exposition, leaves the argument in this section as leaky as a cobbled kettle. But I see no harm in stretching the scope of 'nonfinite clause' in the way I have. Nor is there any reason for supposing that nonfinite clauses should be derived from finite clauses, even when correspondences exist: there can be no justification for imputing tenses which were never there only to delete them - all for the sake of methodological convenience. And if the approach to the grammar of the NP's rightwing outlined above can be accepted, the horrors of Wh- be Deletion can finally be nailed away in its coffin - without ceremony.

Chapter 4

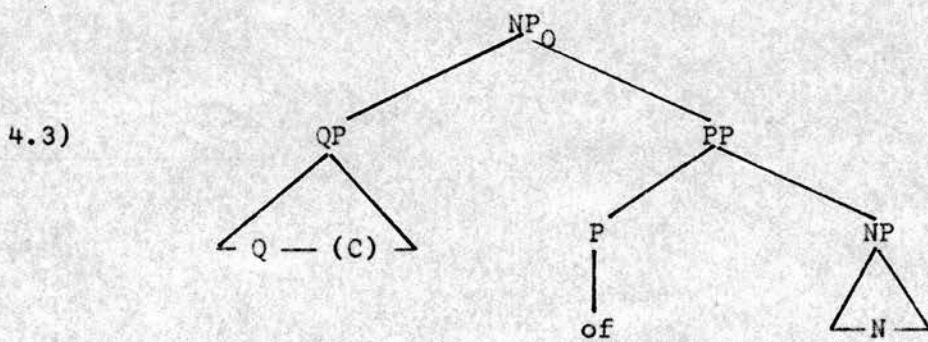
CLASSIFIER CONSTRUCTIONS IN ENGLISH¹AN INTRODUCTORY SKETCH OF THE CLASSIFIER
CONSTRUCTION

The underlined part of the NP listed in (4.1) quantify the part not underlined; furthermore they supply the head for the whole NP, as a rule, as can be seen from (4.2), where concords are underlined.

- 4.1) two head of cattle
 four pounds of potatoes
 some good ones of the tomatoes
 hundreds of pebbles
 some of the cream

- 4.2) One of these tomatoes is bad, is it?
 A few litres of the wine were drunk, weren't they?

I shall call the underlined portion of (4.1) Quantifying Phrases, abbreviated to QP. QP are simply NP having either a classifier or a quantifier as head. Thus the classifier construction is described in the following phrase marker:



1. What I am here calling a classifier might, in English grammar, be more appropriately called a 'quantifying adjunct'; however, I have already used the term classifier for similar components of other languages (cf. Allan 1977) and the term 'classifier' has a wide currency.

In this phrase marker the classifier is represented by the letter "C" for convenient reference in the discussion that follows; nevertheless, it is a noun. QP is a noun phrase quantifying the NP mother of "N", which I shall refer to as the classified noun. In my view quantification is a kind of predication in which the property of quantity is predicated on some nominocentric argument. Whereas nouns refer to independent phenomena, quantifiers - like those typical predicates, adjectives and verbs - have reference dependent on some noun or nominocentric construction. This is as true of QP as of simple quantifiers. The functional relationship between the QP and PP of (4.3) is identical to that between Q and N in (4.4):

4.3) NP[QP[some] PP[of the cream] NP]

4.4) NP[QArt[some] N[cream] NP]

One can ask of the quantifier scope

4.3') How much of the cream?

4.4') How much cream?

and in both cases expect the answer some. Or one can ask Some what? and be answered by either of (4.3-4). The similarity of function between QP and quantifiers within simple NP seems to be confirmed by the fact that where nouns cannot be directly quantified, they may be quantified by QP. For instance, it is impossible to directly denumerate equipment or scissors as in

4.5) *two equipments

*two scissors

But such nouns may be denumerated by QP as in

4.6) two pieces of equipment

two pairs of scissors

"pieces" and "pairs" are classifiers.

The term 'classifier' or 'numeral classifier' has usually been associated with formatives in quantifying expressions in exotic languages like Yurok, Tzeltal, Kiriwina, Burmese or Thai; but it serves very well for English, not least because what I am here calling classifiers will often translate the classifiers from these and other numeral classifier languages; having similar semantics, and an identical function. There are seven kinds of classifier in English, each of which has parallels in established numeral classifier languages; and there are many individual classifiers with identical, or very similar, meaning to classifiers in such languages. There is, furthermore, a universal structural constraint on numeral classifier constructions, which English abides by: UWFC 1 is that

The classified noun cannot be interposed between the quantifier and the classifier.

Thus the only possible constituent orders are $Q \widehat{C} \widehat{N}$, $C \widehat{Q} \widehat{N}$, $N \widehat{Q} \widehat{C}$, and $N \widehat{C} \widehat{Q}$; but never $*Q \widehat{N} \widehat{C}$, nor $*C \widehat{N} \widehat{Q}$. The English order is $Q \widehat{C} \widehat{N}$ as in

4.7) Q [two] C [pieces] of N [equipment]

In *two equipment pieces "pieces" is not a classifier, and in any case the NP is ungrammatical. In numeral classifier languages the co-occurrence constraint between the classifier and the classified noun varies between being completely restricted to being almost completely unrestricted: e.g. Thai chýag is used exclusively with the noun chá·ng 'elephant', Chinese chù is used only with chessboards, and Kiriwina sa only with bunches of betel nuts; Thai muan is used only with cigarettes and cigars; and at the other end of the scale Burmese khù is used with almost any

noun². In English there is a unique association between the collective classifier pride and the noun lions, and similarly between gaggle and geese; the classifier head is restricted to use with cattle, sheep and goats³; but pieces can be used to classify an enormous variety of nouns. There are therefore remarkable functional, semantic, and syntactic similarities between what I am calling classifiers in English, and classifiers in established numeral classifier languages; and so I believe my terminology is justified.

THE SEVEN KINDS OF CLASSIFIERS

There are seven kinds of classifiers in English: unit counters as in a piece of equipment; fractional classifiers as in three quarters of the cake; number set classifiers as in many hundreds of people, collective classifiers as in two clumps of grass; varietal classifiers as in two species of wheat; measure classifiers as in two pounds of cabbage; and arrangement classifiers as in two rows of beans. All seven kinds of classifiers can be found in established classifier languages.

A unit counter defines an instance of some phenomenon, often seen in some particular aspect as in a flash of lightning versus a streak of lightning. It categorises the phenomenon denoted as being discrete and self-contained. Piece, and the more colloquial bit, are used with a wide variety of nouns both concrete and abstract; but none denoting liquids - which are always classified by measure classifiers. Pair is used with pluralia tantum nouns which denote objects consisting of two

2. For information on classifiers in Thai cf. Haas (1942, 1951), Lanyon-Orgill (1955); in Chinese cf. Schafer (1948); in Kiriwina cf. Malinowski (1920); in Burmese cf. Becker (1975), Burling (1965), Hla Pe (1965).

3. It is never used as a classifier of people, although we do talk of counting heads, and making a head count.

leglike members bridged at some point, e.g. scissors, pliers, tweezers, glasses/spectacles, trousers. Its use with these nouns as a unit counter is not to be confused with its use as a number set classifier in e.g. two pairs of socks; almost certainly this is the primary use, and pair only classifies scissors and the like because of the two leglike members of their referents. It is common for unit counters to denote some characteristic perceived of the referents of the nouns they classify, and thus quite usual for all nouns classified by a particular classifier to have some semantic characteristic in common; in short, they typically form a semantic class identified by the classifier - which accounts for this name⁴. Other unit classifiers for uncountable NP are exemplified in

- 4.8) three head of cattle
 two claps of thunder
 two flashes of {light
 lightning
 inspiration
 two streaks of {light
 lightning
 two rays of {light
 inspiration
 hope
 an attack of {malaria
 dysentery
 several bouts of disease
 two sheets of paper
 two slices of bread

In each of these examples instances of the denotatum of the classified noun are denumerated. This is not the case with the formally identical NP in

4. See Chapter 10 for extensive discussion of this.

- 4.9) two rings of the bell
 two jabs of the needle
 two colours of roses
 two rattles of the door

If we maintain that classifiers, at least in English, must occur in QP, and that QP must quantify the following NP (the classified NP), then the examples of (4.9) do not contain classifiers. Whereas we can ask How much NP? or How many NP? of the classified NP in (4.8), and expect (4.8) in answer, comparable queries cannot be made in respect of (4.9):

- 4.8') How many cattle? Two head (of cattle).
 How much thunder? Two claps (of thunder).
 How much bread? Two slices (of bread).
 4.9') *How much bell? Two rings (of the bell).
 *How much of the bell? Two rings (of the bell).
 *How many roses? Two colours (of roses).

The of phrases in (4.9) are not classifier constructions. Nor are the following:

- 4.10) these two lampshades of woven cane
 the smell of onions
 a book of mine
 the knowledge of her indiscretion
 the two owners of the shop
 some orders of the general's
 three pictures of Camelia

None of these examples involve classifiers⁵.

Unit counters are auxiliary elements in the denumeration of non-denumerable nouns; so that, to no one's surprise, they are not usable for denumerating denumerable ones. Apparent exceptions to this rule are

- 4.11) two pieces of a cake she made
 two bits of a torch
 two branches of a tree
 two ends of a rope

But the classifiers here do not denumerate instances of the classified NP's denotation; they identify parts of it. The number of such ^{it}partitive classifiers is very large, and their form infinitely variable; they are recognisably partitive only because the reference of QP is properly contained in the reference of the classified NP. Numerical fraction partitives are entirely predictable in form and number. Examples are

- 4.12) a half of the cake
 three quarters of the cattle
 a fifth of an orange

The classified NP invariably contains a determiner.

I have already mentioned number set classifiers in respect of pair in two pairs of socks. Pair is, of course, a set of two, and many

5. Because language is a creative medium there are circumstances in which some of these constructions might qualify as irregular classifier constructions; for example, my imagination will permit the following in acceptable scenarios:
- i) How much of the bell can you stand before you throw a fit? Two rings.
 - ii) How much woven cane are you importing, madam? These two lampshades.
 - iii) How many roses caused a civil war in England? Two colours.
- But people will say anything (as Hilary Putnam demonstrated - if it needed demonstrating), and the examples of (4.9-10) do not normally contain classifiers.

oriental languages contain one or more such classifiers. As well as pair in English there is brace, almost entirely restricted to classifying sets of gamebirds as in three brace of pheasants. Couple also denotes a set of two but is defective as a classifier because it cannot be used with quantifiers dominated by Num, only with Articles:

- 4.13) a couple of minutes
 every couple of hours
 *one couple of minutes
 *two couples of years

In many numeral classifier languages there are number set words which double as quantifiers and classifiers; for example the Burmese

- 4.14) nwâ tá kaun 'cow one animal' one cow
 4.15) nwâ tá shé 'cow one ten' ten cows
 4.16) nwâ shé kaun 'cow ten animal' ten cows

In (4.15) "shé" is a number set classifier (in contrast with kaun), in (4.16) it is a quantifier in contrast with tá. In English the number set classifiers are dozens, scores⁶, hundreds, thousands, etc. all of which are plural in form and thus morphologically distinguished from the similar words used as quantifiers: dozen, score, hundred, thousand, etc. One nice piece of evidence for the difference is the paradigm in (4.17)

- | | | | | | | | |
|-------|---|-------|----------|---|---|-----------|------------------|
| 4.17) | Q | N | | Q | C | <u>of</u> | NP |
| | | some | eggs | | * | some | of eggs |
| | | two | hundred | | * | two | hundred of eggs |
| | | *many | hundreds | | | many | hundreds of eggs |
| | | *two | pieces | | | many | pieces of paper |

6. Score is almost an archaism although it occasionally turns up in sentences like There were scores of people there or We sold several score of them. Gross has only the one form and is apparently used only as a quantifier.

It seems clear that hundred patterns like the quantifier some, and hundreds like the classifier pieces. There is also a semantic difference between the number set word used as a quantifier, and the corresponding classifier; which is the cause of the following difference in grammaticality:

- 4.18) We saw two hundred.
 We saw several hundred
 We saw several hundreds.

4.19) ??We saw two hundreds.

The relative unacceptability of (4.19) results from a clash between the precise quantifier five and the vague number hundreds: the classifying number set words in this plural form all denote vague numbers; thus dozens of people, for instance, can mean anything from twenty to a hundred (not allowing for gross minimisation or exaggeration); hundreds of people anything from about a hundred to a few thousand⁷. When a numeral is concatenated with these words there is a clash between the precision of the numeral and the vagueness of the classifier; but no such conflict arises when quantifiers like many, several or a few range over them, because these quantifiers themselves denote imprecise numbers. But there is possibly an acceptable reading for (4.19) analogous to that of the underlined NP in (4.20) - which could be contrasted with (4.21):

4.20) We sold five dozens of them on Saturday afternoon alone.

4.21) We sold five dozen of them on Saturday afternoon alone.

It is immediately clear that the scope of "five" differs in the two underlined NP: in (4.20) the NP means roughly 'five sets of a dozen of

7. In many languages closely related to English there is a rather more marked distinction between the translation equivalents of the precise quantifier and the corresponding vague number: compare French cent against centaine, mille versus millier, Danish hundrede as against the vague hundredevis.

them' whereas in (4.21) the NP means something close to 'sixty of them'. There may be no arithmetical difference, but there is a semantic difference, marked in speech by the relative elongation of the diphthong in "five" in (4.20) and a brief pause after this word; neither of which will normally occur in the corresponding NP of (4.21). In terms of Abercrombie (1964), "five" in (4.20) is a strong syllable followed by a word boundary, and in (4.21) "five" is a medium syllable followed by an enclitic (which in other examples, e.g. eight dozen, permits assimilation of the final segment of the medium syllable with the onset segment of the enclitic; no such assimilation characterises eight dozens⁸). The reason why I judged ??two hundreds to be very doubtful but two dozens to be fully acceptable has nothing to do with grammar, but with pragmatic considerations, so that the "??" evaluation might be objected to. It is meaningful to talk about sets of a dozen because many goods have long been, and still are, sold by the dozen; but it is not - from a pragmatic point of view - meaningful to talk about sets of a hundred in everyday circumstances, because they are simply not a feature of normal life. There is, I conclude, a correct reading for (4.19), viz. 'We saw two sets of a hundred'.

Collective classifiers, which denote a grouping of individuals into spatio-temporal contiguity, occur in many established classifier languages. They differ from number set words in giving no clue to the number of individuals forming the collection. They probably combine with numerals rather less frequently than other classifiers. Examples are

- 4.22) bunch of {grapes
 Flowers
 clump of {grass
 weeds

8. I am grateful to Jim Davy for pointing this out to me.

bundle of { firewood
clothes

flock of { birds
sheep
goats [Fluffy coated animals]

herd of large vegetarian mammals

gaggle of geese

pride of lions

litter of young animals

clutch of eggs

crowd of people

company of actors

collection of objets d'art

Classifiers for weight, dimension and volume I call measure classifiers. There are two subtypes: fixed measures and irregular measures. Examples of fixed measure classifiers are

- 4.23) two pounds of potatoes
 two tons of scrap iron
 two miles of bush
 two hundred fathoms of rope
 two hectares of pasture
 two cubic foot of helium
 two litres of milk
 a thousand barrels of oil
 two cups of flour
 a teaspoon of baking powder
 two packs of cigarettes

Irregular measures include

- 4.24) two cups of tea

a mouthful of food
 two handfuls of dirt
 a thimbleful of whiskey
 a lorryload of gravel
 a bucket of water
 a packet of detergent
 a pot of marmite
 a heap of groundnuts

The number of fixed measures is relatively small, a closed set; but the number of irregular measures is almost limitless. For example compare the use of puddle, pool and lake as measures in

4.25) It wasn't a puddle of water, but a pool; more of a lake really.

There is no necessity for a classifier to belong to only one of the various kinds of classifiers that I have been describing. Heap, for instance, is used as a measure in many African and Oriental markets; it is also a collective classifier; and further, it denotes an arrangement of things lying on top of one another. Arrangement classifiers are found in many languages; Tzeltal⁹, for example, contains some which translate almost word for word into English:

4.26) $\overset{v}{ca}?\overset{v}{soht}$ laso 'two+coil rope' two coils of rope

Other arrangement classifiers in English are

4.27) two balls of wool
 a row of trees
 two lines of washing
 two squares of chocolate

9. Cf. Berlin (1968).

Lastly there are varietal classifiers such as occur in

- 4.28) seven kinds of classifiers
 two species of wheat
 two brands of coffee
 two types of valve
 two varieties of sweet-pea

In the unmarked instances of these constructions the classified noun heads an uncountable NP; if the NP it heads is countable the construction is marked in so far as special attention is being drawn to the constituency of its reference. For example compare

- 4.29) two types of valve
 4.30) two types of valves
 4.31) two types of two valves

(4.30) draws attention to the fact that there is a plurality of instances of each type of valve, whereas (4.29) is neutral on this point. (4.31) has a meaning something like 'two types each of the two types of valve' or 'two types of each of the two types of valve'; compare this with (4.29) and I think the point is adequately illustrated.

This concludes my brief survey of the various types of classifiers in English; each type, and many individual classifiers, have correlates in established numeral classifier languages. It was argued in the last section of Chapter 2 that of phrases derive by Swooping nonfinite appositive clauses into NP structure; but that is not the derivation of classifier constructions. Other kinds of of phrases have the structure of nonfinite clauses, but the quantificational structure of classifier constructions is not that of a clause. The prepositional phrase in these two lampshades of woven cane has been Swooped into place, and there

is a correspondence between this NP and the finite clause these two lampshades are of woven cane. There can be no such correspondence between classifier constructions and finite clauses.

4.32) these ten head of cattle
 *these ten head are of cattle

4.33) these three quarters of the tomatoes
 *these three quarters are of the tomatoes

4.34) these two kinds of wheat
 (*)these two kinds are of wheat

[can only be understood as 'these two kinds of NP are of wheat' which does not correspond in meaning with the preceding NP]

There is no verb that can properly be inserted between QP and PP, or even QP and the NP dominated by PP; furthermore it is impossible to imagine one. By way of contrast recall my earlier suggestion (p.91) that the nonfinite that sister of Max's corresponds to the nonexistent finite clause *that person sisters Max: although this finite clause does not actually exist in English, it is easy to imagine that a verb *to sister is a possible verb. There is no possibility of creating chimerical verbs between QP and PP in classifier constructions, because the proper kind of relationship does not exist between them; classifier constructions are not at all clausy, so there can be no application of Swooping in their history.

The clausy structure of these two lampshades of woven cane yokes together into a particular relationship two distinct phenomena, 'two lampshades' and 'woven cane'. The two can be separated by various linguistic phenomena without rupturing their relationship because neither is dependent for its interpretation on the other. The quantificational

structure of a classifier construction entails that the quantifying phrase does depend for its interpretation on the prepositional phrase within its scope; so there are strong constraints against splitting the two. Compare (4.35) with (4.36):

- 4.35) These two lampshades I have bought are of woven cane
 Of woven cane these two lampshades are made.
 Those two new lampshades of woven cane cost a fortune.
- 4.36) *These two pounds I have bought are of potatoes.
 *The ten head I bought were of cattle.
 *Of potatoes these two pounds are.
 *Of cattle the ten head are.
 *The shop won't replace those two bad pounds of potatoes.
 *The ten angry head of cattle were trapped in a cul-de-sac.

The inseparability of the QP and PP confirm that there can have been no application of Swooping in the history of classifier constructions.

The English classifier construction entails a prepositional phrase where many languages have nothing similar but to all appearances contain the classifier, or classifier-like word, within the same simple NP as the classified noun. For example we might compare the form of classifier construction in Burmese, Thai, Tzeltal, and a comparable Dutch expression, with the corresponding form in English:

- 4.37) Burmese nwâ shé kaun 'cow ten animal'
 English ten head of cattle
- 4.38) Thai bûrì sɔŋ sɔŋ 'cigarette two pack'
 English two packs of cigarettes
- 4.39) Tzeltal ^vca2b'eh^v laso 'two loop rope'
 English two loops of rope

- 4.40) Dutch drie sorten mais
English three sorts of maize

The English construction is superficially similar to that of French, cf.

- 4.38') deux paquets de cigarettes
4.39') deux brides de corde
4.40') trois sortes de maïs

Thus it might be conjectured that the form of the classifier construction is the result of Norman influence; but although French may well have been influential on the survival of the form, the form also existed in Old English. The quantified noun in Old English was regularly in the genitive case, e.g.

- 4.41) ccl hund scipa '250 of ships'
mænig hund mila 'many hundred of miles'
þusend manna 'thousand of men'

The genitive inflexion on the quantified noun seems to have been replaced by the preposition of, as in the glosses of (4.41), because even as late as the seventeenth century there were quantifying expressions like

- 4.42) 1700 of biscuit (1588, Navy Records Society)
9 dozen of hearing (1612, Surtees Society No.68, 26)

This use has not quite died out in all dialects of English, and I can attest two dozen of eggs in Irish English, for example (see Appendix B). The preposition no longer appears on the surface unless either the QP contains a noun head, or the quantified (classified) noun is predicated by a determiner to the right of QP. The use of of predated the loss of genitive inflexions in Old English, and such phrases as þusenda of slægenra 'thousands of slain' are to be found, in exactly the form of

the modern equivalent (except that the quantified noun has the genitive plural inflexion). The question arises why NP like (4.42) no longer contain of in standard English; is it deleted during the derivation, or has all semantic trace of the genitive gone? In the instance we have been considering, nothing but a purely speculative answer can be offered; but the case of partitive NP is more transparent.

One might argue that just as "some" in

4.43) some of the eggs

quantifies a number from among "the eggs", so logically, does "some" in

4.44) some eggs

quantify a number from among "eggs"; we could base this on an assumption that some is always partitive in standard English, just as its logical equivalent is taken to be. But this assumption will put us in a bind: should the semantic structure of both (4.43-44) contain the semantic item SOURCE, lexicalised to of in the former, but nonsurfacing in the latter; or should SOURCE only occur in the semantic structure of (4.43); or should it not occur in the deep structure of either of these NP? We could take the latter view if some, or rather SOME, is understood to be intrinsically partitive. Such a view would generalise to some quantifiers better than others; it would not work in the case of the partitive

4.45) two of the three men

The well formedness condition on the structure underlying the partitive NP requires that the quantified (or classified) NP contains the quantity

denoted by the QP. cf.

- 4.46) four of the six apples
 all six of the six apples
 *nine of the six apples

This well formedness condition entails that the NP is partitive, thus no semantic item such as SOURCE is necessary to mark the fact, and to postulate it is very probably incorrect. Since SOURCE is unnecessary to the deep structure of (4.43), and - if present - deleted from that of (4.44), it is extremely unlikely that it should exist in the semantic structure of partitives; in which case the preposition in partitive NP, of, has no semantic content.

THE SEMANTIC EMPTINESS OF OF

There is quite a lot of circumstantial evidence that of either has no meaning, or else it is very polysemous indeed. We can discern this if we consider all the various kinds of of phrases. In order to discuss them I will take it that of phrases have the structure

- 4.47) NP₁ of NP₂

where "NP₁" may, of course, be a Quantifying Phrase. There are three major types of of phrases: those in which NP₁ is locative, those in which NP₂ is locative, and those in which neither is necessarily locative, but NP₁ contains a head noun which contains a verb or adjective in its derivation. "Locative" is here understood in its broadest sense as comprehending spatial, temporal, and abstract location: paraphrases and necessary entailments of of phrases, which contain overt locative prepositions, will be counted as evidence that NP in those phrases are covertly locative; and I shall assume that the possessive is an abstract

Assuming that the possessive is locative consider

- 4.50) a. the basket of mine b. the basket which I have
 the basket of John's the basket which John has

In addition to the superficial possessives there are of phrases which are partitive constructions expressing the inherent possession of NP₁ by NP₂:

- 4.51) a. the smell of onions b. the smell which onions have
 the taste of honey the taste which honey has
- 4.52) a. the end of the road ?the end which the road has
 the top of the mountain ?the top which the mountain has
 the bottom of the hill etc.
 the beginning of the song
 the head of the man

The phrases of (4.51a) fall within the third major class as well as this one, cf. (4.63). The paraphrases in (4.52b) are of dubious acceptability, but this was to be expected from earlier discussions of inherent possession, such as Fillmore's (1968, 61ff.); their meaning is clear enough and obviously interprets the meaning of the corresponding phrases in (4.52a). Some of the partitive constructions in the latter involve overtly locative nouns at NP₂, but others do not; like them, are partitive constructions containing quantifiers, such as were discussed above, e.g.

- 4.53) a. half of the eggs b. half from among the eggs
- 4.54) a. all of the eggs b. every one from among the eggs

The evidence for including in this class constructions containing measure and number set classifiers is very tenuous; but I would argue that the of phrases in (4.55) are partitive constructions because NP₂

- 4.58) a. the star of the show b. the star from the show
 4.59) a. the vicar of the local church the vicar from the local church.

Both a man of the people and the star of the show could be regarded as partitives, or even possessives: the people's man, the show's star.

(4.59a) may fall into the third major class of of phrases, cf. (4.62).

I have been illustrating the second major class of of phrases in which NP_2 is locative: it may be possessive, a universe to which a partitive expression applies, a temporal expression, or a source for NP_1 (in the nonpartitive sense).

The third major class of of phrases can be introduced by a counterexample to the second major class,

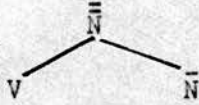
- 4.60) the owner of the shop

Undoubtedly the possessor here is NP_1 and not NP_2 . It might be possible to propose that (4.60) exemplifies a new subclass of the first major class I set up, but in fact there is a preferable explanation: that there exists a third major class of of phrases in which NP_1 is headed by a noun that entails a verb or an adjective in its derivation, and there is not necessarily any locative in the construction. Consider*

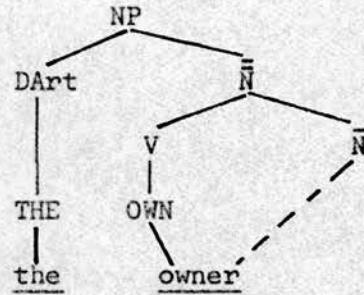
- 4.61) a. the owner of the shop b. the one who owns the shop
 the driver of the car the one who drives the car
 the designer of the church the one who designed the church
 the purchaser of the cloth the one who purchased the cloth

The NP_1 of (4.61a) are sometimes miscalled 'agentive nominals'; they derive not directly from the (b) examples but from roughly the configuration

4.61a')



e.g.



The (b) examples derive from a configuration in which "V" is directly dominated by an S node and not a bar-N node. A number of nouns appear in NP₁ rather like those of (4.61a), which either have a semantic correlation with a morphologically distinct verb, or which do not correlate with any existing verb, and apparently owe their existence to analogy, e.g.

- | | | | |
|----------|-------------------------------|----|--------------------------------|
| 4.62) a. | the author of the book | b. | the one who wrote the book |
| | the king of England | | the man who reigns in England |
| | the mayor of the city | | the one who ? the city |
| | the vicar of the local church | | the one who ? the local church |

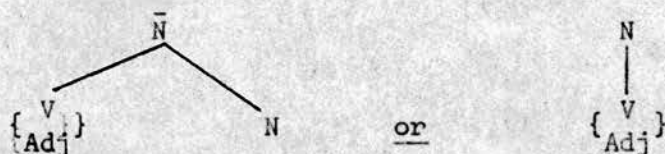
There are also of phrases in which the NP₁ contains a deverbal or deadjectival nominal that cannot even loosely be called 'agentive', cf.

- | | | | |
|----------|-----------------------------------|----|---------------------------------|
| 4.63) a. | the absence of an explanation | b. | an explanation is absent |
| | the existence of another Miró | | another Miró exists |
| | the cost of paint | | paint costs ... |
| | the price of butter | | butter is priced ... |
| | the death of a salesman | | a salesman dies |
| | the beauty of her features | | her features are beautiful |
| | the need of it | | it is needed |
| | the knowledge of her indiscretion | | her indiscretion is known about |
| | the taste of honey | | honey tastes ... |

I cannot yet commit myself to a proper description of the difference in

semantic structure between the NP_1 of (4.63a) and that of (4.61a); they have very similar semantic structures, but the scope of the verb in (4.61a') is more complex than that in (4.63a'):

4.63a')



I will elaborate on this towards the end of Chapter 5.

Falling into this third major class of of phrases are those in which NP_1 is a gerund and NP_2 the direct object of the underlying verb, cf.

4.64) Albert's killing ^{of}~~the~~ the cat upset me

Kate's knowing of it annoyed me

John's giving to George of the watch I coveted enraged me

By restricting the discussion of of to phrases that consist of NP_1 of NP_2 , I have excluded consideration of of as a verbal or adjectival particle as in

4.65) They tell me of a new motorway to run through Buckingham Palace.

Jamie is fond of whiskey.

Notice that the verb or adjective holds more or less the position of NP_1 , a fact reminiscent of the third major class of of phrases.

There are two kinds of of phrases not yet assigned to any major class:

4.66) three pictures of the lion

4.67) Harry is worth ten of him.

Both these appear to fit best into the first major class in which NP_1

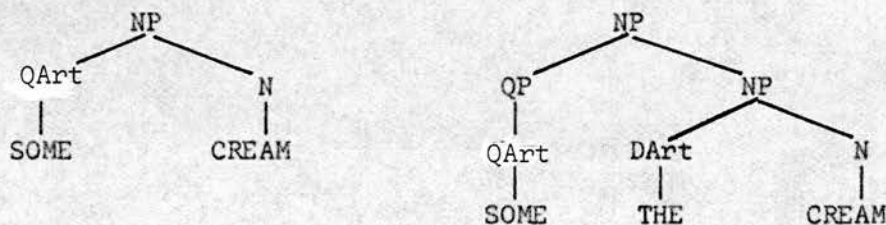
contains or consists of NP₂; however, the arguments for it are scarcely convincing. (4.66) has the meaning something like '*three pictures containing the lion' or '*three pictures consisting of the lion'; or better 'three pictures on which the lion appears'. It would seem that the three pictures identify the location of the lion, and so (4.66) seems to be in the first class of of phrases we considered. The meaning of (4.67) is really 'Harry is worth ten like him', which is nearly '*Harry is worth ten consisting of him'. This appears to be the best argument available for the assignation of such evaluative phrases to one of the major classes of of phrases.

I have identified three major classes of of phrases, those in which NP₁ is locative, and where this locative is a concrete or abstract container; those in which NP₂ is locative and either a possessive, a temporal expression, a source for NP₁, or it represents a universe which a partitive NP partitions; and finally, a class in which the head noun of NP₁ entails a verb or adjective in its derivation. We have seen a multiplicity of meanings for the preposition of - or perhaps that it really has no meaning at all, and any apparent meaning is induced by its context. Suppose that of is in fact an empty link between NP: in English it is possible to juxtapose NP which are related as arguments to the same sentence predicate, but it is not possible to juxtapose NP in a direct relationship with each other. Of exists, then, to mark the conjoining of NP in a direct relationship, the nature of which is interpretable from either the semantics or the pragmatics of the NP involved. This is as much as to say that there is no semantic item underlying of.

THE SCOPE OF QP IN DEEP STRUCTURE

In a classifier construction, therefore, QP has the same sort of

deep structure relation to the classified NP as a quantifier has to the quantified noun when they both occur within the same simple NP; and of is introduced into surface structure by Chomsky-adjunction to the rightmost NP where QP contains a noun head, or where the classified noun is predicated by a determiner. Thus the deep structures of some cream and some of the cream are as shown below:



It will be noticed that QArt ranges over a bar-N node; only QP can range over an NP node. In fact, there is a well formedness condition WFC 4.2 that

A bar-N node which is the right sister to QP
invariably becomes NP.

The most significant difference between QP and a simple quantifier is that QP contains the head constituent of the NP which mothers it - as was seen in (4.2) - whereas a quantifier on a bar-N node is never the head of any NP containing it.

APPOSITIVE QUANTIFIERS

For classifier constructions whose QP is headed by one of the universal quantifiers all, both, each or every, there is a paraphrase with a different source. For example (4.69) are synonymous with (4.70) provided correspondence between the quantifiers is maintained:

4.69) All }
 Both } of the students got a diploma.
 Each }
 Every one }

4.70) The students $\left\{ \begin{array}{l} \text{all} \\ \text{both} \\ \text{each} \\ \text{every one} \end{array} \right\}$ got a diploma.

Other quantifiers in QP cannot be paraphrased in the same way; compare (4.71-72):

4.71) $\left. \begin{array}{l} \text{Several} \\ \text{A few} \\ \text{Some} \\ \text{Many} \\ \text{One} \\ \text{Four} \end{array} \right\}$ of the students got a diploma.

4.72) *The students $\left\{ \begin{array}{l} \text{several} \\ \text{a few} \\ \text{some} \\ \text{many} \\ \text{one} \\ \text{four} \end{array} \right\}$ got a diploma.

The PP of the partitive-like construction can be fronted whether the quantifier of QP is universal or not,

4.73) Of the students $\left\{ \begin{array}{l} \text{all} \\ \text{both} \\ \text{each} \\ \text{every one} \\ \text{several} \\ \text{some} \\ \text{many} \\ \text{a few} \\ \text{one} \\ \text{four} \end{array} \right\}$ got a diploma.

This surely indicates that fronting PP and ensuing of deletion cannot account for (4.70), for which there must be another source. Confirmation for this view comes from the fact that a floating universal quantifier need not be juxtaposed to the governing NP; for example

4.74) Each of them will be being carefully watched.
 They each will be being carefully watched.
 They will each be being carefully watched.
 They will be each being carefully watched.

They will be being each carefully watched.

?They will be being carefully each watched.

Any of the other universal quantifiers could be substituted for "each" in (4.74). The only feasible explanation for the multiplicity of locations for the floating universal quantifier is that it is originally introduced from outside the rest of the clause in which it surfaces; and its peculiar prosodic characteristics confirm this. So does the fact that we can push "each" one constituent further to the right in (4.74) with the resulting

4.74') They will be being carefully watched, each of them.

This makes it clear that although I have been talking about the "floating universal quantifier" it is not just a quantifier we have been considering but QP. It is also clear that the floating QP is appositional. This is nicely shown by

4.75) Men in our family all are tall.

Men in our family, all of them, are tall.

Men in our family are all tall.

Men in our family are, all of them, tall.

Men in our family are tall, all of them.

Quite obviously "them" pronominalises 'the men in our family' and the PP of the appositional classifier construction is deleted under an identity condition leaving the universal quantifier as the only constituent of it to surface. Any quantifier can occur in the appositional NP,

4.76) Several of them will be being carefully watched.

They, several of them, will be being carefully watched.

They will, several of them, be being carefully watched.

They will be, several of them, being carefully watched.

Etc.

Any quantifier, universal or non-universal, can be substituted for "several". But as (4.72) showed, there is no deletion of PP where the quantifier ranging over it is non-universal. The reason is clear; compare

4.77) We all of us went to the ruins.

4.78) We some of us went to the ruins.

In (4.77) the scope of the universal quantifiers "all" is "us", which has identical reference to the governing NP "we"; thus there is an identity condition under which PP can be deleted to give

4.77') We all went to the ruins.

In (4.78) the scope of the quantifier "some" is also "us", but this does not have the same reference as the governing NP "we", because "us" constitutes a universe from which "we" forms a proper subset. Thus in (4.78) there is no identity condition under which PP, or more precisely the quantified NP, can be deleted; therefore (4.78') is an ill formed structure,

4.78') *We some went to the ruins.

So we see that the only reason universal quantifiers float and other quantifiers do not, directly results from their semantic differences.

The identity condition which apparently leads to the deletion of PP in the scope of a floating quantifier, in fact affects only the quantified NP. Take for example

4.79) The girls in our office, all of them_(,) are helpful.

A bowdlerisation of the underlying form of (4.79), but a good enough representation for this purpose, is

4.79') The girls in our office, all of the girls in our office_(,)
are helpful.

To such a string the application of either Pronominalisation or Equi-NP Deletion is obligatory so that the repetition of "the girls in our office" is reduced either to them or to nothing - though there is constraint on deletion. If we assume that Equi-NP Deletion chops out the classified NP before Of Insertion can apply, we nicely account for the nonappearance of PP in the surface structure, E.g.

4.80) NP₁[the girls in our office] ... NP₂[QP[all] NP[the girls
in our office]]

by Equi-NP Deletion becomes

=====>

NP₁[the girls in our office] ... NP₂[QP[all]]

There is a constraint on the application of Equi-NP Deletion, but not Pronominalisation, to the quantified NP in the appositional partitive-like classifier constructions we have been discussing; its effect can be seen by comparing (4.74') with the rest of (4.74), and the final example of (4.75) with those preceding it. Equi-NP Deletion can only apply if the governing NP and the quantified NP are on the same side of the (content word of) the clause predicate, cf.

4.81) Our girls are both fond of them all.

Our girls are fond, both of them, of them all.

*Our girls are fond, both, of them all.

Them all, our girls are both fond of.

All of them, our girls are both fond of them.

*All, our girls are both fond of them.

! All of them, our girls are fond, both of them, of them.¹⁰

10. Prescript "!" marks a verbal gymnastic.

In case it should be objected that floating quantifiers cannot have an appositional origin because they are ^{not} bounded by 'comma' juncture, i.e. tone group boundaries, let me point out that although these are characteristic of the prosody of some appositional constructions they are not normal for single word apposition. The norm for single word apposition is no onset tone group boundary, but a higher pitch than other constituents in the foster clause, and a following foot boundary. Appositional reflexives, which have similar locations to floating quantifiers, show just such characteristics - and so, of course, do floating quantifiers. Compare

4.82) ²We ³went ²to the ³ruins¹.

²We ⁴all ³went ²to the ³ruins¹.

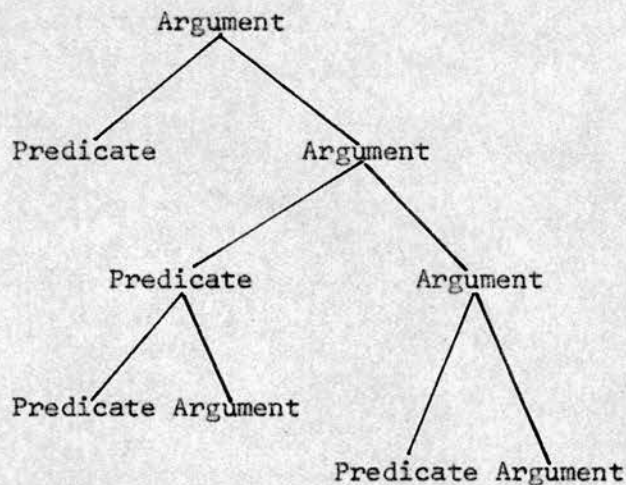
²We our ⁴selves ³went ²to the ³ruins¹.

There is no reason on grounds of prosody to object to the claims that floating quantifiers are appositional; and there are no other grounds for objection either. So I conclude that floating quantifiers are appositional; in which case it would be appropriate to rename them appositive quantifiers.

EPILOGUE

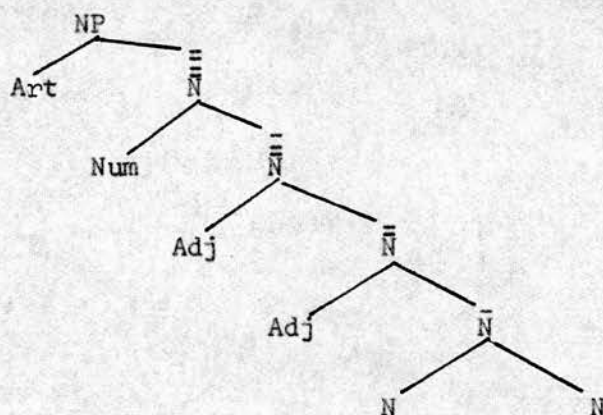
In Part II I have described and justified a particular model of NP structure to provide an established framework in which to examine the grammar of singularity and plurality in English NP. In the model all leftwing constituents, that is all NP constituents to the left of the head - including attributive adjectives, are directly generated (Chapter 2). By contrast all rightwing NP constituents (other than the scope of QP) are introduced into the NP by Swooping down appositive clause aunts; such appositive clauses may be either finite or nonfinite - the latter being directly generated and not derived from finite clauses (Chapter 3).

The leftwing of NP consists of a set of predicate-on-argument relations as illustrated in the following tree:



Such a set of constituent relations would underlie, for example, the NP this very old stone wall. Relations of this kind are not particularly interesting and they occupy good labelling space; I have therefore maintained a convention (adequate to our present purposes) that right sisters form the scope of their left sister predicates, and trees are

labelled with category symbols instead of relational symbols. The bar-X notation has been used as a useful means of indicating endocentricity. Nodes endocentric on N are bar-N nodes; but I have found it necessary to separate out the topmost bar-N node (whose mother is not, of course, endocentric on N) and use the traditional label 'NP' for it. Well formedness conditions WFC 2.1, WFC 2.3, WFC 2.5, and WFC 4.2¹ state circumstances under which a bar-N node becomes NP. A typical leftwing structure is illustrated below:



This is the deep representation of the surface string Art Num Adj Adj N N.

It was argued that attributive adjectives are directly generated in leftwing structure, and not introduced by a transformation which lifts them out of NP complements. One reason for rejecting the complement source hypothesis is that there is not always a complement similar in form and meaning to the attributive; and so, no source for it. Another is that the puny Wh- be Deletion transformation, which was required in the turning of complements into attributives, has been shown in Chapter 3 to be completely superfluous - largely because nonfinite clauses have to be directly generated in the grammar and are not derived by trans-

1. A summary of well formedness conditions is given in Appendix C.

-formation from finite clauses. But the most serious reason for rejecting the complement source hypothesis is the difference in scope between attributives and complements.

I have used 'determiner' as a convenient term to refer to both the Article and Num nodes; but it has no formal status within NP structure. Furthest left on NP's leftwing, and therefore the constituent with the widest scope, given it is present, is the Article node. There are two kinds of articles; Quantifying Articles (QArt) comprise the universal quantifiers all, both, each and every; the nonspecific article any; and the explicit indefinites a(n) and some. The Determinative Articles (DArt) include the definites the, this, that, these, those; and the possessive pronouns my, your, his, etc. Definites represent an assumption by the speaker that his audience knows (is aware of) the reference of the NP in which the definite occurs. An indefinite indicates the contrary assumption. It was noted that all NP of the form $NP[\# \overset{\frown}{\text{Num}} \overset{\frown}{\dots}]$ are intrinsically indefinite, but that a(n) and some - despite having the semantics of quantifiers - are used as explicit markers of indefiniteness. Proper names and generics are intrinsically definite, but personal pronouns, including those which function as Determinative Articles, are not necessarily definite.

Specificity accounts for whether a speaker knows (and so can guarantee) the reference of NP in the circumstances expressed by the utterance containing the NP. And although an NP's specificity seems to govern co-occurrence constraints on discourse, the only mark of it in NP structure is the modal operator any, which indicates that the speaker does not presuppose the existence of the reference of $NP[\text{any } \dots]$.

The Num node dominates all other quantifiers in NP's leftwing; i.e.

those that are not Articles. Quantification within (a complex) NP may be effected through the classifier construction in, for instance, denumerating uncountables (e.g. two pieces of equipment). The classifier construction has the surface form $QP \widehat{\text{of}} NP$ in which QP has NP structure and is headed either by one of the seven kinds of English classifiers, or by a quantifier. The seeming Prepositional Phrase "of NP" does not derive through Swooping an appositional nonfinite clause down into the construction. Instead QP is a quantifying predicate ranging over NP (a relationship analogous to a quantifier ranging over a bar-N node in simple NP structure), and of is a semantically empty morph introduced late in the derivation to mark the direct relationship between QP and NP. As with every of phrase, the head of the classifier construction is the head of the first NP in sequence - in this case, QP.

Those universal quantifiers which seem to surface anywhere among sentence constituents turn out to be remnants of appositive classifier constructions from which the classified NP has been deleted under an identity condition; however, such deletion is only permitted when the two identical NP are on the same side of the (content word of) the clause predicate.

In Part II a set of assumptions about the structure and constituency of English noun phrases has been established to provide a framework for the continuing discussion of the grammar of singularity and plurality.

PART III

COUNTABILITY AND THE HEAD OF NP

FOREWORD

The study of countability begins in Chapter 5 with a look at the surface indications of number, beginning with noun morphology and moving on to concord. The supremacy of NP-internal over NP-external concord is established such that, for example, a singular NP is one with singular internal concord, whatever its NP-external concord. The theme continues with a description of the conditions governing a discrepancy between NP-internal and NP-external concord, and the significance of making a difference between them.

Number is indicated by the NP head, and it is argued that the deep structure head of a countable NP is ONE (singular) or ONES (plural), neither of which is present in the deep structure of an uncountable NP. In Chapter 6, after examining the characteristics of English numeral classifiers it is found that certain classifiers may also head countable NP, and this leads to the conclusion that ONE(S) is a classifier. This conclusion entails that a countable NP in English invariably contains a classifier in its deep structure.

Chapter 7 investigates the relative countableness of English nouns. The fact that a noun is acceptable in one countable environment does not guarantee its acceptability in another. By establishing a definitive set of countable environments, and filtering a representative set of English nouns through them, the degree of countableness of a noun can be computed as a factor of the number of environments in which it is acceptable.

Chapter 5

THE GRAMMAR OF COUNTABLENESS

THE FORMAL CHARACTERISTICS OF SINGULAR AND PLURAL NOUNS

In English the singular form of the noun is an unmarked citation form which I have referred to as the k-form. The plural noun is morphologically distinguished by the addition of a plural morpheme which typically surfaces as a graphemic suffix -(e)s on the k-form, or one of the allomorphic phonological suffixes /-iz/, /-z/ or /-s/. The particular allomorph of the regular plural is determined by the final segment of the noun's k-form: if this includes both the features $\left[\begin{array}{l} +\text{strident} \\ +\text{coronal} \end{array} \right]$ then the plural will be /-iz/; in the absence of this particular combination of features a voiced segment takes /-z/ and a voiceless one /-s/. Even within this regular plural system there are irregularities: in most dialects a few nouns with k-form final segments of voiceless anterior continuants voice them in plural contexts before the plural allomorph is assigned, cf. calf /ka:f/ - calves /ka:vz/, path /pa:θ/ - paths /pa:θz/, house /haus/ - houses /hauziz/. Irregular plural forms comprehend a zero morph in, e.g. sheep; internal vowel change, e.g. mouse - mice, foot - feet, man - men; and a number of foreign plurals such as Germanic ox - oxen; Greek phenomenon - phenomena; Latin formula - formulae, fungus - fungi, impedimentum - impedimenta, crisis - crises, index - indices; and Semitic seraph - seraphim, fellah - fellahin.

These few remarks constitute the sum of what I have to say about the phonology of the various superficial realisations of the plural

morpheme and almost all I have to say about the derivational morphology of the plural. My major morphological concern henceforth is with the presence or absence of the plural morpheme, and not with its surface form.

SINGULARITY AND PLURALITY INDICATED BY NOUN CONCORDS

Although the best indication of the plural morpheme is one of the surface morphs given above, there are other indications too. For example in the sentence

5.1) Those sheep are losing their wool

we know that "sheep" is plural, although the morphology of the surface noun shows nothing, because "those", "are" and "their" are all in plural concord with it. Such concordial indications of number fall into three types exemplified by these three words. There is NP-internal concord between the head of NP and demonstratives (this-these, that-those) and quantifiers (e.g. each, one, two, several); and there are two kinds of NP-external concord: subject-verb concord, between the finite verb and the head of its subject NP; and pronominal concord between a pronoun coreferential¹ with it, and the NP whose head noun governs the concord. But of these concordial indications of number only NP-internal concord invariably agrees with the number of the governing noun. In some non-standard dialects of English the standard subject-verb concord is violated but neither pronominal concord nor NP-internal concord can be. Thus sentences like (5.2) occur in West County dialects, and sentences like (5.3) occur in East Midland dialects (cf. Wakelin 1972, 119); but

1. I will use 'coreferential' on the understanding that it will include the sense 'codenotational' where the latter would be applicable and the former would not. See Appendix A for a discussion of denotation and reference.

sentences like (5.4) are not regular in any dialect:

- 5.2) This dog eat potatoes, don't {^{he?}
*they?
- 5.3) These dogs eats potatoes, doesn't {^{they?}
*he?
- 5.4) *This dogs eat potatoes, } {doesn't it?
*This dogs eats potatoes, } {don't it?
*These dog eat potatoes, } {doesn't they?
*These dog eats potatoes, } {don't they?

It is hardly surprising that subject-verb concord can be violated without destroying meaning because it does not generally occur in the past tense anyway. Having no semantic or pragmatic value except in a handful of cases involving 'unchanged plural' nouns, the subject-verb discord such as that illustrated in (5.2-3) must be judged in terms of standard English as a superficial grammatical error of comparable status to using the wrong gender for a French noun, cf. (0.2). In a referring NP number is controlled by the characteristics of NP reference; recall the discussion of (0.1) above. This is obviously equally true for a coreferential pronoun. Thus the pronoun will have the same number semantics as the *except in certain circumstances which will be examined shortly.* coreferential NP, _h NP which denote but do not refer are abstractions from formally identical NP which do refer, and reflect their grammaticality: thus the NP the fifty foot high human being denotes an entity that is only absurd because a referring NP of identical form would be palpably false. Thus number is semantic not only in NP which refer but also in NP which denote. NP constituents like demonstrative, quantifier, and noun all indicate characteristics of the reference, though none of them on its own defines the reference completely (see Appendix A). It follows that for two of these NP constituents to indicate conflicting number characteristics would be contradictory; thus (5.4) are contradictory.

THE SUPREMACY OF NP-INTERNAL NUMBER CONCORD

Let us get back to standard English. Within any one simple NP (i.e. an NP which does not contain an embedded NP) reference characteristics require that grammatical number be constant. However, the same phenomenon can be looked at from different points of view and in the relevant area this is demonstrated by collective NP that refer to humans, animals, and perhaps plants (i.e. living things) headed by nouns like admiralty, aristocracy, army, assembly, association, audience, board, class, clergy, committee, crowd, flock, government, herd, honey-suckle, apple blossom, etc. Cf.

- 5.5) The herd is getting restless.
 5.6) The herd are getting restless.
 5.7) *The herds is roaming the plains once more.
 5.8) The herds are roaming the plains once more.

The last two sentences show that the plural collective noun invariably has plural concord in standard English. But the singular 'living' collective noun can have either singular or plural verb concord as we see from (5.5-6)²; furthermore it may have singular or plural pronominal concord, as in

- 5.9) The herd $\left\{ \begin{array}{l} \text{is} \\ \text{are} \end{array} \right\}$ getting restless and $\left\{ \begin{array}{l} \text{it is} \\ \text{they are} \end{array} \right\}$ beginning
 to move off.³

2. This is not true for all speakers of standard English: although fairly common in Britain, it is rare in the USA (see Appendix B). Visser (1963, 62) says that it seems more common in Old English than in Middle or Modern English, though this may be due to the loss of number concord in the preterit (except for was-were).
3. Differences in the acceptability of the possible combinations of elements in this example are referred to below on p.139f.

Thus the singular 'living' collective noun can take plural NP-external concords, but never plural NP-internal concords. It is therefore NP-internal concord which definitively indicates the number of the head noun. It follows from this that number is as much a characteristic of the NP as of its head noun, though this might simply be a consequence of the fact that the head noun is embedded in it and governs its characteristics.

NP-EXTERNAL CONCORD AND THE CATEGORIES OF REFERENCE

There is an explanation for the variable concord possibilities illustrated in (5.5,6,9):

NP headed by 'living' collective nouns may manifest one of two categories of reference: with singular NP-external concord they make intensional reference, i.e. refer to the collection as a whole, or as a unity; and where the NP is singular but has plural NP-external concord relations it makes extensional reference, i.e. refers to every member within the collection.⁴

4. 'Nonliving' collective nouns are limited to intensional reference and only 'living' collective nouns may make extensional reference; with institution nouns like the BBC, the university, the library, the company I work for, the local authority, reference to the institution as a building, location or physical object of some kind must be intensional, whereas reference to the people associated with the institution can be either intensional or extensional, cf.

i) The library { ^{is} _{are} } situated in the new civic centre.

ii) The library { ^{charges} _{charge} } a heavy fine on overdue books.

It is a matter for speculation why there should be this difference between 'living' and 'nonliving' collective nouns. I would suggest it may reflect a perception of salient individuality in the living organism by contrast with an inanimate object: the higher the organism in folk taxonomy, the more likely is the linguistic representation of it to show a contrast with the linguistic representation of lowly organisms and inanimate objects - typically by means of separate noun class markers, pronouns and other concordial elements. Hence the distinction between 'living' and 'nonliving' collective nouns is perhaps explicable in terms of an almost universal characteristic of languages.

Sometimes contextual conditions impose constraints on the choice of category of reference. For example, where such an NP has a(n) as its determiner or one as its quantifier, plural concord with the verb is unlikely, cf.

- 5.10) a. A committee was asked to investigate the problem.
 b. One herd was seen near the water-hole.
- 5.11) a. ?A committee were asked to investigate the problem.
 b. ?One herd were seen on the horizon.

Presumably the fact that the semantic of both a(n) and one is ONE (cf. 36ff.) causes such NP to be predisposed to the unity of intensional reference, indicated by singular NP-external concord: in (5.11) this predisposition has been violated. However the weakness of the predisposition, revealed by the strangeness rather than the unacceptability of (5.11), results in it being defeated by the presence of a subordinate clause between the NP and its external concords, cf.

- 5.12) A committee (,) looking into the connection between absenteeism and the raising of the school leaving age (,) have themselves not reported for work.

Presumably the predisposition is simply lost sight of because of interference from the information carried by the intervening subordinate clause; in other words its defeat may be a similar kind of phenomenon to that of number-attraction, where verb concord is not with the head noun of the subject NP but with some noun closer to the verb which interferes with the regular concord relations as in Neither of them were remarkable for their perspicacity or There's an old man and woman come to live next door.

Given a pair of coreferential collective NP, the category of reference

made by one may differ from the category of reference made by the other provided that they are not clause mates, c.f. (5.9) and also (5.13-15) where the relevant clause boundaries are marked off:

5.13) S_1 [A committee (,) S_2 [who were set up to report on tax evasion] S_2 (,) is being questioned by Inland Revenue Inspectors. S_1]

S_1 [You suggested hiring a group] S_1 ; S_2 [they are to be asked to play until what time?] S_2

5.14) [The committee itself {^{is}/_{*are}} reporting ...]

[The committee themselves {^{*is}/_{are}} reporting ...]

[The committee is sustaining {^{itself}/_{*themselves}} ...]

[The committee are sustaining {^{*itself}/_{themselves}} ...]

5.15) a. [^{*The committee is pleased with themselves.}]

b. S_1 [It is themselves] S_1 S_2 [that the committee is pleased with.] S_2

(5.13) shows no awkwardness when a collective NP introduced by "a", and therefore having a predisposition to making intensional reference, is juxtaposed to a coreferential NP making extensional reference: but they are located in different clauses. (5.14) shows that no change in the category of reference is possible within a clause; and (5.15) emphasises

5. With collective nouns that refer to a body of human beings there is a correlation between the relative which and intensional reference, and one between relative who and extensional reference, cf.

(i) The committee which {^{was}/_{*were}} appointed

(ii) The committee who {^{*was}/_{were}} appointed

the significance of the condition as it affects a pair of transformationally related sentences. The grammatical condition on changing the category of reference⁶ is that the coreferential collective NP be cousins; that is, they are dominated by different S nodes. But at what level? In (5.9) and (5.13) the relevant NP are cousins in both deep and surface structure; but, assuming (5.15b) derives by Clefting from (5.15a) the surface cousins began life as clause mates; and so the cousin condition apparently operates at surface level. However, it turns out that the Cousin Condition is a global condition, because it also reads deep structure configurations. Thus, although the two underlined parts of (5.16-18) are clause mates in surface structure, they make different categories of reference; this is only permissible because the second in sequence of the coreferential NP has been moved by transformation from being a deep cousin of the first: in (5.16-17) the circled phrases have been Swooped down from appositive clauses; in (5.18) the circled phrase has been Raised from a complement sentence.

- 5.16) The pop group is ecstatic over the tv film of themselves.
The Cabinet hasn't yet heard the tape of themselves which
Tricky Dick sneaked while visiting.
- The Seminary Social Club has destroyed the picture of
themselves with Fluzy Suzy in the Daysabee.
- The gang has successfully fabricated a legend about themselves.
- 5.17) The board₁ was furious about the shareholders' criticism
of them₁.

6. According to Visser (1963, 69) a change in the category of reference "was of frequent occurrence in Old, Middle and Early Modern English. In Present Day English it is, however, avoided."

The group_j is anxious about the adverse effect for them_j.

The Cabinet_k was tickled pink by Dick's opinion of them_k.

The herd₁ is frightened by the lion's attack on them₁.

5.18) The committee believes themselves to have been misrepresented.

The government has made themselves unpopular by taking too many bribes.

Without proposing a derivational relationship between them, we might compare (5.16) with (5.19), (5.17) with (5.20), and (5.18) with (5.21), noting that the NP underlined in the following are not only deep but also superficial cousins:

5.19) S_1 [The pop group is ecstatic over the tv film S_2 [made of themselves S_2] S_1]

S_1 [The Cabinet hasn't yet heard the tape S_2 [made of themselves S_2] which Tricky Dick sneaked while visiting S_1]

S_1 [The Seminary Social Club has destroyed the picture S_2 [taken of themselves with Fluzy Suzy in the Daysabee S_2] S_1]

S_1 [The gang has successfully fabricated a legend S_2 [which is about themselves S_2] S_1]

S_1 [The shareholders' criticism of them_i made S_2 [the board_i furious S_2] S_1]

S_1 [The adverse effect for them_j is making S_2 [the group_j anxious S_2] S_1]

s_1 [Dick's opinion of them_k caused s_2 [the Cabinet_k
be tickled pink s_2] s_1]⁷

s_1 [The lion's attack on them₁ has caused s_2 [the herd₁
be frightened s_2] s_1]⁷

5.21) s_1 [The committee_a believes s_2 [they_a have been mis-
represented s_2] s_1]

s_1 [The government_b has caused s_2 [they_b be unpopular s_2]
by taking too many bribes. s_1]⁷

In summary, then, the Cousin Condition on a Change in the Category of Reference is that: A pair of coreferential collective NP (headed by a 'living' collective noun) can make different categories of reference only if they are cousins (i.e. dominated by different S nodes) at some level of the derivation.

One mystifying fact about changing the category of reference: where subject-verb concord reveals intensional reference, provided the Cousin Condition is satisfied pronominal concord may make extensional reference; however, if subject-verb concord reveals extensional reference, pronominal concord has also to make extensional reference -- in other words the category of reference cannot be changed, cf.

5.22) a. It is themselves that the committee is pleased with.

b. *It is itself that the committee are pleased with.

5.23) a. The herd is migrating to their summer feeding grounds.

b. *The herd are migrating to its summer feeding grounds.

5.24) a. The pop group is ecstatic over the tv film of themselves.

7. The subject of the embedded sentence must be Raised to turn this example into an acceptable surface form.

- b. *The pop group are ecstatic over the tv film of itself.
- 5.25) a. The herd is getting restless and they are beginning to move off.
 b. ? The herd are getting restless and it is beginning to move off.
- 5.26) a. The board was furious about the shareholders' criticism of them.
 b. ? The board were furious about the shareholders' criticism of it.

Why (5.25b, 26b) are not so bad as the other (b) sentences will have to remain a matter of speculation; but the answer may lie in the consideration of degrees of clause-matiness: the less clause-maty the coreferential items are, the more acceptable is the combination of subject-verb extensional reference with pronominal intensional reference.

Another mystifying fact is exemplified in (5.27):

- 5.27) The government isn't taken in by their own propaganda.
The Wages Committee hasn't yet discussed their own salary claim.
The herd is migrating to their summer feeding grounds.

Since all these sentences are grammatical we should conclude that the possessive pronoun "their" is a cousin to its precursor, the sentence subject. But such a conclusion would entail the possessive pronoun being moved into the leftwing of NP structure by transformation, and in Chapter 2 I claimed that all leftwing NP constituents are directly generated. At present I can see no satisfactory solution to this problem.

The category of reference of a collective NP can be determined by the sentence predicate ranging over the NP, for example

- 5.28) The committee { ^{is} / _{*are} } composed of scholars.
 The committee { consists / _{*consist} } of both men and women.
 The committee { contains / _{*contain} } many men of distinction.

The data speaks for itself.

The reason for distinguishing the two categories of reference is that a set of phenomena may be perceived either in terms of the set as a whole - which I have named 'making intensional reference' - or they may be perceived as a plurality of members of the set - and I have called this 'making extensional reference'. Collective nouns are the most obvious linguistic representation of sets of phenomena, and that is why I have concentrated on them in the discussion so far. However, there are other plural quantities that may be perceived either as a plural extension or as a single quantity; and, conversely, a single phenomenon can be regarded as an assembly of parts. Such perceived characteristics of phenomena can be linguistically indicated by the means I have been discussing throughout this section: singular NP-external concords indicate intensional reference, and plural NP-external concords indicate extensional reference. Consider, for example

5.29) The heap of logs is piled against the wall.

5.30) The heap of logs are piled against the wall.

The head of the underlined NP is the classifier "heap" — head of QP; the intensional reference in (5.29) focuses on the unitary phenomenon "heap", whereas the extensional reference in (5.30) focuses on the members of the heap, namely "logs". Notice, incidentally, that no extensional reference is possible when there is no plurality of phenomena to refer to, as in

5.31) The heap{^{is}/_{*are}} piled against the wall.

 The heap of sugar {^{was}/_{*were}} soon carried off by ants.

The plurality of phenomena referred to in such classifier constructions can be indicated in either the NP or the QP of the construction, cf.

5.32) a. A half pound of sweets was all she got.

b. A half pound of sweets were given to the kids.

5.33) a. Two pounds of flour was found in the cupboard.

b. Two pounds of flour were what I wanted.

The (a) sentences focus on the quantity; (5.32b) focuses on the sweets; (5.33b) either does not focus on anything in particular, or it could refer to two separate pound packets of flour (cf. 187ff.).

A classifier construction consists of the quantification of the classified NP by QP. A simple plural NP in which a bar-N constituent is quantified by a numeral can also make the two categories of reference; normally, of course, it will have plural concord, but when there is focus on the quantity, as a quantity, singular concord, and therefore intensional reference to the quantity, may be found:

5.34) Three lions is too many to let roam free, even in the
Blue Peter studio.

Two men isn't enough to lift a fifty foot girder, is it?

Five courses is sufficient for anyone but a glutton.

Verbs like gather, assemble, crowd, disperse, etc. generally take a plural object NP, cf.

5.35) He gathered the chairs together.

But they may regularly take a singular collective NP object, as in

5.36) He gathered the crowd together.

In addition it is possible to find such sentences as

5.37) He gathered the chair together.

which is interpreted in some such way as 'he gathered the bits of the chair together', and in which "chair" is treated rather as if it were a collective noun.

It is abnormal (or 'marked') for NP-external concord to differ from NP-internal concord; thus the significance of the categories of reference is their abnormality, and under normal circumstances they can be ignored. For example, in (5.36), the category of reference made by "the crowd" is not only indeterminable but non-existent. Even where one or the other category must be indicated, as in

5.38) The herd {^{was}_{were}} gathered together by him.

the speaker will not necessarily have one category firmly in mind; and on such occasions the choice of concords and categories of reference is probably not in free variation but tends to the norm of making NP-external concord actually concord with NP-internal concord.

WHY THE NP HEAD MUST BE THE SOURCE FOR NUMBER

Because NP-internal number concord is inviolable it is conceivable for number to be located anywhere in NP structure provided that it can effect concord between demonstrative, quantifier and head noun constituents of the simple NP. In other words there are grounds for questioning the traditional association of number with the head noun, and therefore for considering alternative locations for it. The flaw in such a hypothesis is that every countable NP has number, and whatever node is the source for number will be an obligatory constituent of the countable NP. The only obligatory constituent of any NP is its head, and so the head must be the source of number. The only alternative to ^{is} this/ to allow some node X to be the source for number in NP and have a condition that when it is not realised in surface structure its phantom presence is felt. Because I do not believe in phantoms I will not explore this hypothesis; and if I did, the exposition of countableness

that follows would exorcise the ghost.

ONE(S) AS A HEAD NOUN

Stockwell et al. (1973, 141) would analyse partitive constructions like (5.39) in terms of (5.40):

5.39) two of the tomatoes

5.40) two tomatoes of the tomatoes

A problem with (5.40) is that it would have to be specially protected from pronominalisation so as to block

5.41) *two tomatoes of them

*two tomatoes of themselves

This problem disappears if instead of (5.40) we postulate an underlying structure for (5.39) along the lines suggested by Bach (1968). In particular I am in favour of applying Bach's proposal that the quantifier ranges over the word one(s) representing the NP reference; for reasons that will become clear, I reject Bach's preference later in his paper (ibid. 105ff.) for an alphabet of variables in place of this lexical item. Thus I propose that underlying (5.39) is something like

5.42) two ones of the tomatoes

Since English grammar is in any case going to require a rule to delete one(s) whenever it is juxtaposed to a quantifier, such that *one one becomes one, *two ones becomes two, and so on, the reduction of (5.42) to (5.39) involves no new rule for English.

In traditional TG analysis the explanation for the occurrence of one(s) is that it is introduced transformationally by Pronominalisation;

and a proponent of such an analysis would doubtless claim that if (5.42) were generated at all, it would be through pronominalisation of (5.40). But a strong argument against the substitution hypothesis is that one(s) is not, taken generally, a substitution for any single constituent: one(s) scope extends over one or more concatenated NP constituents to the right of Num, provided they include the NP head. Thus, for example, in (5.43) "one" is a substitute for "house" whereas in (5.44) it is a substitute for "very dilapidated, overgrown, crumbling old grey stone mews house at the end of the lane":

5.43) My aunt lives in the very dilapidated, overgrown, crumbling old grey stone mews house at the end of the lane, and my mother in the new brick one next to it.

5.44) My aunt lives in the very dilapidated, overgrown, crumbling old grey stone mews house at the end of the lane, and my mother in the one next to it.

The scope of one(s) substitution is thus almost impossible to define in general terms. The problem can be avoided by restricting the scope of one(s) substitution to the head noun of the antecedent and then deleting any other repeated material by redundancy reduction rules. This would be an excellent solution were it not for the fact that one(s) does not necessarily substitute for a head noun nor, come to that, any other NP constituent.

Consider the following sentences:

5.45) You took some of the jewels, but which ones?

5.46) You took some of the jewels, but which?

5.47) You took some of the jewels, but which ones of them?

5.48) You took some of the jewels, but which of them?

There will be general agreement that (5.46) derives by deletion of "ones" from (5.45) and that (5.48) derives in a comparable way from (5.47). But the question arises Where does "ones" come from? It is clear from (5.47-48) that it is not a pronominalisation of the head noun "jewels" because "them" is the pro-NP for "the jewels"; it is equally clear from (5.45) that "ones" is not a pronominalisation nor a substitution for "some". If, however, we postulate that underlying "some of the jewels" is a string comparable, mutatis mutandis, with that underlying two of the tomatoes (cf. 5.42), namely

5.49) some ones of the jewels

then the "ones" of the interrogative clause can be thought of as having identity with this underlying "ones". Notice the near identity between (5.49) and the underlying form of the corresponding NP in the interrogative clause

5.50) which ones of the jewels

This parallelism gives ground for predicting that redundancy reduction rules typically wipe out repeated items in the second clause in sequence.

It is clear from the examples just discussed that Pronominalisation is inadequate to account for all instances of one(s), and if we can support an alternative hypothesis that does not have this failing the substitution hypothesis must be rejected. (5.42) and (5.49) show that if one(s) is to be directly generated it must be as NP head in deep structure. Its location is not at issue, I think; so the only question to arise is whether or not one(s) is directly generated. And there are examples where it is, incontrovertably. Suppose someone enters a shop, picks up articles for purchase, and says something like

- 5.51) How much is this one?
 5.52) Can I have these blue ones?

There is no language expression for which "one(s)" substitutes, and such instances of one(s) must be directly generated in deep structure. Thus we must either accept that one(s) is both directly generated and introduced by Pronominalisation; or we must assume that all instances of one(s) are generated in deep structure as ONE(S). I shall make the latter assumption, and in this way reject the substitution hypothesis, though where appropriate I will point to phenomena it could not handle.

ONE(S) AS THE HEAD NOUN

It follows from earlier discussion that (5.53) derives from (5.54):

- 5.53) Some of the tomatoes are good ones.
 5.54) Some ones of the tomatoes are good ones.

I think it will be agreed that "some ones" and "good ones" in (5.54) are coreferential; but in (5.53) the coreferentiality of "some" with "good ones" is only conceivable if "some" is understood as a reduction of "some ones". Thus (5.54) is justified as the underlying form of (5.53) on the grounds that it spells out coreferentiality. It is, of course, the spelling out of coreferentiality in (5.54) that supplies the formal identity between the head nouns of "some ones" and "good ones". The expectation of formal identity between the predicative "ones" and its antecedent gives me to suggest that (5.55) derives from (5.56),

- 5.55) Some boxes of the tomatoes are good ones.
 5.56) Some box ones of the tomatoes are good ones.

But clearly this is not the whole story because there is coreference

between "some boxes" and "good ones", and if this is spelled out then the hypothesised deep structure for (5.55) is not (5.56) but

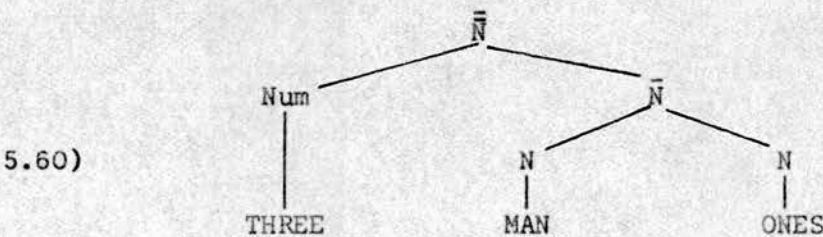
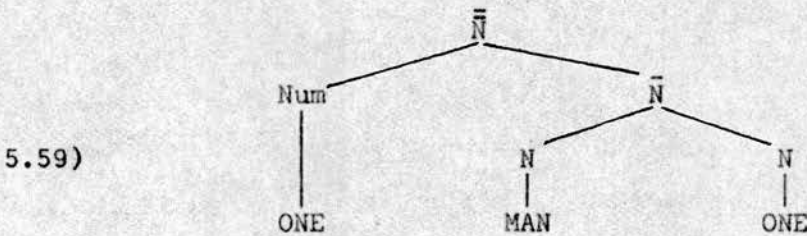
5.57) Some box ones of the tomatoes are good box ones.

Notice that "box ones" is the underlying form for the "boxes" of (5.55). The reader will be wondering why "tomatoes" in (5.57) is not analogously represented as tomato ones, and indeed it should be. Thus the proper underlying string for (5.55) is, finally,

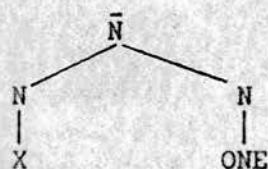
5.58) Some box ones of the tomato ones are good box ones.

Let me now discuss the consequences of postulating such underlying structures.

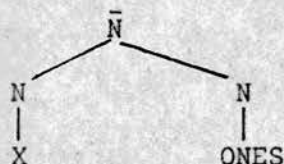
The hypothesis for number placement in NP hinges on the evidence that the best way to account for surface one(s) is to directly generate it in deep structure as ONE(S), which will be head of NP and concomitantly represent the singularity or plurality of the NP reference. The kind of deep structure I envisage is illustrated in (5.59) and (5.60).



There is a rule called Number Absorption which operates during the lexicalisation of nouns whose right sister (or, in functional terms, argument) is ONE(S); such that the configuration



defines the singular (k-form) of noun X, and the configuration



defines the plural noun X in whatever form the plural noun takes. (For what it is worth I would suggest that irregular plural forms are included in the lexical entry, but the regular ones written -(e)s or pronounced /-(i)z/ or /-s/ should probably be supplied by special graphological and phonological rules; this is because regular plural morphs seem to be independent of nouns in so far as they are the only plural forms available to nouns newly coined or newly introduced into English.) As a result of Number Absorption operating during 'lexicalisation MAN ONE becomes man and MAN ONES becomes men; and referring back to (5.58), BOX ONES becomes boxes and TOMATO ONES becomes tomatoes. Note that Number Absorption is restricted to the Noun sister of ONE(S); otherwise the ONE(S) head surfaces, as in these blue ones, or this one (unless it is deleted by the Beheading transformation discussed on p. 170 ff.). Presently I shall also explain how NP like the brick one come about, cf. (5.77).

Number Absorption amalgamates a predicate with its argument; a process which no proponent of the Agentive Nominal transformation will find unnatural. Number Absorption is also rather like the process that amalgamates the tense morpheme PAST with verbs, the main difference being that the latter is effected by Predicate Raising (cf. McCawley, 1971c),

whereas the former is not. Furthermore, there are certain similarities between the grammar of do as Ross (1972a) presents it and the grammar of one(s) as described here. Ross postulates a predicate DO which ranges over propositions containing active verbs, and obviously there is no similarity of any kind here; but his DO like my ONE(S) is often gobbled up by its sister node: at first Ross suggests that it be deleted, but later on (ibid. p.114) he proposes, though in different terms from mine, that DO should be absorbed during lexicalisation. Ross shows that the grammar has to generate do in the postulated position in deep structure irrespective of whether or not his hypothesis is accepted: I have already shown that the same is true for one(s). He shows that the substitution hypothesis cannot account adequately for do: and I have shown that it fails in a similar way with one(s). There is also another similarity which I shall come to later (p.165f.).

Onesing, AN ALTERNATIVE TO ONE(S) PRONOMINALISATION

Take the sentence

5.61) These tomatoes are good ones.

The traditional TG analysis of this would introduce "ones" by Pronominalisation, but I have rejected such an approach and suggest as an alternative that the deep structure for (5.61) (ignoring irrelevancies) is something like

5.62) NP_1 [these TOMATO ONES] are NP_2 [good TOMATO ONES]

The interesting thing about NP_1 and NP_2 is that they are partially identical, and it is significant that the identical parts are "ONES" and its left sister noun "TOMATO". In order to get from (5.62) to (5.61) we require a transformation to delete the noun "TOMATO" from NP_2 under

an identity condition. The minimum specification for such a transformation is

T_i)	NP_1	[W	N	X]	...	NP_2	[Y	N	Z]	
SD		1	2	3		4	5	6		On condition 2 = 5
SC		1	2	3		4	∅	5		

In (5.62) constituents "X" and "Z" of (T_i) are identical instances of ONE(S). Is this also a necessary condition? Suppose instead of ONE(S) "X" and "Z" are filled by relative clauses as in

5.63) The thunder you heard is the thunder which frightened my son.
This sentence fulfills the current SD for (T_i) which could effect a structural change on it to bring about the ungrammatical

5.64) *The thunder you heard is the which frightened my son.
The heteronymy of the relative clauses in (5.63) is not the cause of the grammatical breakdown demonstrated here and an identity condition on "X" and "Z" in (T_i) is of no help, cf.

5.65) The thunder you heard is the thunder you heard.

*The thunder you heard is the you heard.

It seems that "X" and "Z" have to be instances of ONE(S), and that is why I call the transformation we are trying to define Onesing. Onesing converts (5.62) into (5.61) and also (5.66) into (5.67):

5.66) The girl you like best is the girl to marry.

5.67) The girl you like best is the one to marry.

Underlying the NP the girl is THE GIRL ONE, and underlying both (5.66-67) is

5.66') NP_1 [THE GIRL ONE you like best] is NP_2 [THE GIRL ONE to marry]

And the repeated noun "GIRL" is deleted from NP_2 just as "TOMATO" was deleted from (5.62). Hence "X" and "Z" of (T_i) must be instances of ONE(S). But curiously enough they need not be identical instances; that is, one may be singular the other plural, cf.

5.68) There is such a good selection of scarves in all sorts of colours that I'm in a quandary; but I think I'll take this one.

5.69) John had a slow pint of beer while I had two quick ones. It is surely clear that in (5.68) "one" refers not to "scarves in all sorts of colours" but to a single scarf, and one that is very possibly in only one colour; it is one of the instances of one(s) which the substitution hypothesis simply cannot handle. Mutatis mutandis the same kind of observation can be made about (5.69). The relevant pairs of NP in (5.68-69) are respectively.

5.68') NP_1 [SCARF ONES ...] ... NP_2 [this SCARF ONE]

5.69') NP_1 [a slow PINT ONE ...] ... NP_2 [two quick PINT ONES]

Apparently what is crucial to the operation of Onesing is the presence of ONE(S) as NP head and the identity of its sister noun in the two NP. But even this is not quite accurate because there are sentences like

5.70) Harry's very fond of NP_1 [cake], so Hetty made him NP_2 [one].

Here NP_1 is uncountable and it does not contain an instance of ONE(S), so it cannot be a precondition for Onesing that both NP_1 and NP_2 contain ONE(S). Underlying NP_1 and NP_2 in (5.70) are

5.70') NP_1 [CAKE] ... NP_2 [ONE CAKE ONE]

Obviously the identity between the head noun of the uncountable NP_1 and the noun left sister to ONE in NP_2 is a sufficient condition for the application of Onesing. Thus the general input condition to Onesing can be stated on two NP, NP_1 and NP_2 , of which the head of NP_2 must be ONE(S); Onesing deletes the left sister noun to ONE(S) in NP_2 if and only if this node is identical with either the left sister noun to ONE(S) in NP_1 or, should NP_1 be uncountable, with its head.

The scope of deletion by Onesing is not restricted to the noun left sister to ONE(S). It must also cope with the NP_2 in (5.71), a copy of (5.44):

- 5.71) My aunt lives in NP_1 [the very dilapidated, overgrown, crumbling old grey stone mews house at the end of the lane], and my mother in NP_2 [the one next to it].

Onesing deletes from NP_2 "very dilapidated, overgrown, crumbling old grey stone mews house at the end of the lane"; that is Onesing deletes repeated attributive adjectives, nouns and rightwing elements from NP. In those NP to which it applies Onesing never erases repeated determiners; thus (5.72) is not synonymous with (5.73)

- 5.72) The thief stole NP_1 [the two gold rings] and NP_2 [the two platinum ones] but left NP_3 [the two brass ones] behind.
- 5.73) The thief stole NP_1 [the two gold rings] and NP_2 [platinum ones] but left NP_3 [brass ones] behind.

On the leftwing of NP to which Onesing applies it deletes progressively leftwards from ONE(S). Compare

- 5.74) Jeremy had NP_1 [an old grey mare] and I had NP_2 [one] too.

5.75) Hubert had NP_1 [an old grey mare] and I had NP_2 [a brown one].

The NP_2 of (5.74) derives from ONE OLD GREY MARE ONE, i.e. a complete repetition of NP_1 . From its deep structure Onesing deletes the adjectives and the noun leaving ONE ONE as its output; from ONE ONE the second "ONE" is deleted by a transformation yet to be discussed, namely Beheading (p.169ff.). The NP_2 of (5.75) is understood as ONE BROWN MARE ONE and not as ONE OLD BROWN MARE ONE because the latter would have to surface as in

5.76) Hubert had an old grey mare and I had an old brown one.

Thus the introduction of a new adjective blocks deletion by Onesing of any adjective to the left of it, and Onesing must operate from the right, moving leftward from ONE(S). It follows that the NP_2 of

5.77) I live in NP_1 [the crumbling old grey stone house] and
Elspeth lives in NP_2 [the brick one]

should only be interpretable as THE BRICK HOUSE ONE and not as THE CRUMBLING OLD GREY BRICK HOUSE ONE. And indeed it is.

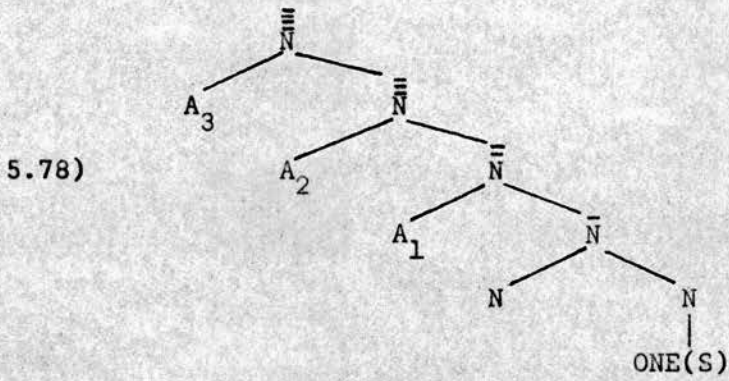
Onesing has to delete progressively leftwards in order to preserve well formedness in NP structure. There is a general well formedness condition, WFC 5.1, that

Any bar-N node must consist of a predication on an argument,
and only unbarred N is free of this condition.

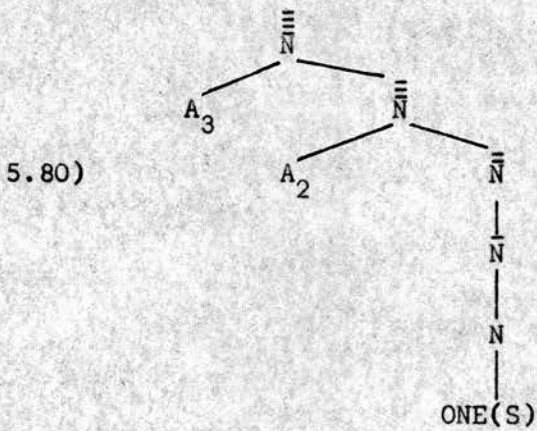
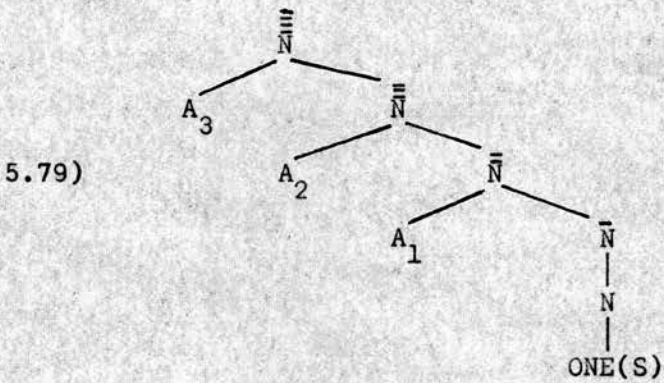
WFC 5.1 applies at all levels of structure and so to comply with it bar-N nodes from which the predicate is deleted have to be Pruned away to be replaced by N. Thus arises WFC 5.2 that

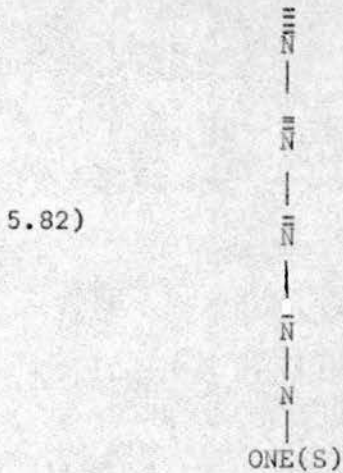
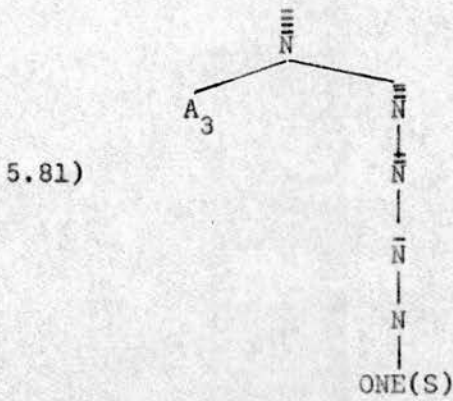
A bar-N node which no longer dominates a predicate may be
Pruned if and only if its remaining daughter is unbarred N.

With these conditions in mind consider the application of Onesing to partial NP structures like



All of the following may be derived by Onesing deletion:



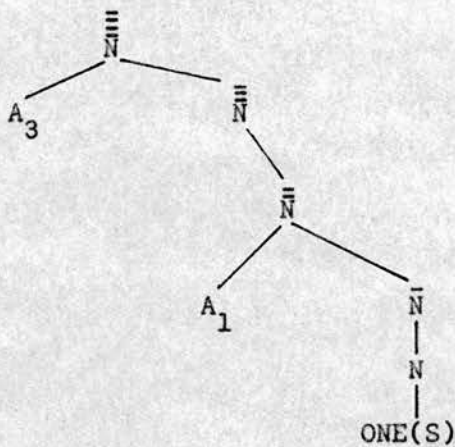


To achieve well formed NP structures the Pruning of bar-N nodes proceeds upwards from the mother of N such that in (5.82) for example $\bar{\text{N}}$ is first Pruned to be succeeded by N as the daughter of $\bar{\text{N}}$; then $\bar{\text{N}}$ is Pruned so that N becomes the daughter of $\bar{\bar{\text{N}}}$; this is then Pruned and finally so is $\bar{\bar{\bar{\text{N}}}}$ to leave (5.82) as (5.83).



But supposing Onesing were so formulated as to permit identity deletion that was not progressive from the left; then it could, for example, delete from (5.78) the Noun sister to ONE(S) and A_2 leaving A_1 in place, viz.

5.84)



Neither \bar{N} nor $\bar{\bar{N}}$ have predicates and unless they can be Pruned both violate the well formedness condition on NP structure; because it is mother to N , \bar{N} can in fact be Pruned, but (5.84) must be thrown out because there is no chance of Pruning $\bar{\bar{N}}$. Thus the progressive leftwards deletion condition exists to maintain well formedness in NP structures. But it is undecidable whether the well formedness conditions on NP structures are the cause or the result of the fact that Onesing deletes progressively leftwards from ONE(S).

Onesing takes account not only of semantic components but of their mother nodes. Thus in (5.85) BLUE is read as a colour adjective and so contrasts with RED; and in (5.86) BRICK is read as an adnominal noun and contrasts with STONE:

5.85) Pong praised his pithy little red book while Ping castigated the blue one.

5.86) Engels was rebuilding the crumbling old stone wall at the front as Marx laboured away building a brick one to the rear.

It is therefore to be expected that adjectival qualifiers like rather, quite, and very are read not as daughters of bar-N nodes, and therefore as independently deletable by Onesing, but as daughters of Adjective

nodes which also dominate the adjective to the right of the adjectival qualifier. Hence we find

5.87) This is NP_1 [an old building] and that is NP_2 [a beautiful one].

in which NP_2 is understood to derive by Onesing from ONE BEAUTIFUL OLD BUILDING ONE by progressive leftwards deletion from "ONE". But the same process will not generate

5.88) *This is NP_1 [an old book] and that is NP_2 [a very one]

where NP_2 is intended to mean 'a very old book', because the input to Onesing of NP_1 and NP_2 is

5.89) NP_1 [QArt [ONE] Adj [OLD] N [BOOK] N [ONE] NP_1] ... NP_2 [QArt [ONE] Adj [VERY OLD] N [BOOK] N [ONE] NP_2]

From which it is obvious that the Adjective node of NP_2 is not identical with that of NP_1 so the deletion of the whole or part of it is precluded. The same holds if the order of these NP were reversed, thus the sentences of (5.90-91) are heteronymous:

5.90) This is NP_1 [a very old book] and that is NP_2 [an old one] too.

5.91) This is NP_1 [a very old book] and that is NP_2 [one] too.

The NP_2 of (5.91) contains VERY OLD, but the NP_2 of (5.90) does not.

That just about winds up my account of the leftwing activities of Onesing, so I will turn to its effects on NP constituents to the right of the head. These are a mirror image of those on the leftwing in that clauses are deleted progressively from ONE(S) rightwards, cf.

5.92) NP_1 [A girl at the disco with long blond hair whom I thought pretty] was outshone by NP_2 [one with curly hair whom I didn't take to at first].

Deleted from NP_2 is the nonfinite Swooped clause at the disco from the immediate right of the NP head. Compare this with

- 5.93) NP_1 [The girl at the disco with long blond hair whom I thought pretty] was not so much fun as NP_2 [the one on the bus home].

In (5.93) there is no suspicion of the deletion from NP_2 of with long blond hair whom I thought pretty. The new element in NP_2 , "on the bus home", which replaces NP_1 's "at the disco", blocks further deletion rightwards.

For further constraints on rightwing deletion by Onesing compare the following examples.

- 5.94) You say Granny is in NP_1 [the pub down the road]; NP_2 [which one]?

- 5.95) NP_1 [The man I was talking to] was NP_2 [the one I was talking to yesterday].

NP_2 in (5.94) is reduced by Onesing from which pub down the road from which constituents have been deleted because of their identity with corresponding constituents in NP_1 . But despite a large measure of identity between the Swooped clauses of NP_1 and NP_2 in (5.95), there is no deletion or partial deletion of the clause from NP_2 . The explanation lies in the fact that the presence of the semantic component YESTERDAY in the relative clause of NP_2 prevents complete identity with the corresponding clause in NP_1 . This being the case it is clear that where Onesing deletes constituent nodes progressively rightward from the NP head, its scope is strictly limited to the deletion of finite or nonfinite S nodes, and it does not apply directly to any of the nodes dominated by a rightwing S. Of course, it only deletes any S under the usual identity condition.

THE RELATIONSHIP BETWEEN NP TO WHICH ONESING APPLIES

In reaching towards a proper definition for Onesing the relationship between the NP to which it applies needs clarifying. Given partially identical NP_i , NP_j , NP_k , NP_1 in sequence, the identity constraint on the application of Onesing does not hold between, say, NP_i and NP_1 , but between any two consecutive NP; viz. in this set between NP_i and NP_j , between NP_j and NP_k , and between NP_k and NP_1 . Thus in the sequence

5.96) NP_1 [The old stone house] was more romantic than NP_2 [this brick one] although this is much nicer than NP_3 [the one next door].

the relevant semantics of the three NP are

NP_1 [the OLD STONE HOUSE ONE]

NP_2 [this BRICK HOUSE ONE]

NP_3 [the BRICK HOUSE ONE]

Because NP_2 differs in meaning from NP_1 there is no way that NP_3 in its present form can have the same meaning as NP_1 .

Hitherto it has been assumed that Onesing applies under the constraints discussed above to the second of two NP in sequence. In fact sequence is not the sole determining factor, as we see from WFC 5.3:

For any pair of NP, say NP_i and NP_j , NP_j is subjected to Onesing under the stated identity conditions provided it does not bear all primacy relations to NP_i .⁸

8. Cf. Langacker (1969) for a description of primacy relations.

Thus the constraints on the relationship of NP_i to NP_j are exactly those applicable in Pronominalisation. In fact Langacker's statement of these is not quite accurate, but it seems to me as good as the alternatives offered by Ross and Postal (cf. Postal 1971, 20ff.) The constraint on Onesing stated above correctly predicts all of the following. (Subscript "i" indicates co-denotation.)

- 5.97) John bought a Mercedes_i and then Mary bought one_i.
- 5.98) *John bought one_i and then Mary bought a Mercedes_i.
- 5.99) When John who can afford one_i decides that he wants to buy a Mercedes_i ...
- 5.100) When John who can afford a Mercedes_i decides that he wants to buy one_i ...
- 5.101) When John can afford a Mercedes_i he will buy one_i; then I'll buy one_i too.
- 5.102) When John can afford one_i he'll buy a Mercedes_i; and then I'll buy one_i too.
- 5.103) John will buy a Mercedes_i when he can afford one_i.
- 5.104) The man who has to try to decide to think about wanting to put a downpayment to buy a Mercedes_i doesn't really want one_i at all.
- 5.105) The man who has to try to decide to think about wanting to put a downpayment to buy one_i doesn't really want a Mercedes_i at all.

In my dialect, at least, the Primacy Relations Constraint can be violated and the sentences protected from ungrammaticality by the Exceptional Intonation Rule, which I confess to being unable to properly describe at the present time. Here are some examples of its effect:

- 5.106) ²John will ⁴buy ¹one_i #, ²when he can af⁴ford ¹a Mercedes_i.
- 5.107) ²One_i will be ⁴bought ¹by John # ²when he can af⁴ford ¹a Mercedes_i.
- 5.108) ²John would just like to ⁴ride ¹in one_i # be²cause he ³can't ²af³ford ²to ⁴buy ¹a Mercedes_i.
- 5.109) ³First ⁴John ¹bought one_i # and ²then ⁴Ma²ry ¹bought a Mercedes_i.
- 5.110) ³First ²one_i was bought by ¹John # ²and ³then ⁴Mar¹y had to have a Mercedes_i.
- 5.111) ²Mary will ³throw a ⁴part¹y for him_i # ²when she finds out what ³John_i has ⁴bought ¹her.
- 5.112) ²Mary'll throw ¹him_i a ³part¹y # ²when she finds out what ³John_i has ⁴bought ²her.
- 5.113) *She_i will throw a party for John when Mary_i finds out what he's bought her.

The first clause invariably ends on a low pitch level and there is a marked break before the onset of the second; the second clause is characterised by a rise to a high fall. The effect is somewhat similar to that of Right Dislocation, but on a grander scale; here, the second clause seems to be a punch line for the scenario set up in the first.

The Exceptional Intonation Rule saves the grammaticality of a sentence containing a Onesed NP that has violated the Primacy Relations Constraint, no matter whether the NP is sentence subject, sentence object or object of a preposition. The same rule protects against banishment pro-NP objects which violate the Primacy Relations Constraint; but, as we see

from (5.113), it is unable to rescue the sentence subject pro-NP from expiating its crime. Why there should be no way of saying (5.113) that makes it acceptable is a mystery.

AN INFORMAL DEFINITION OF ONESING

Let me now terminate this long discussion with a conclusive description of

The Onesing transformation

Given two NP_i, at least one of which must contain ONE(S) predicated by a noun (its left sister) semantically identical to the corresponding node in the other NP - should that NP be countable - or to the head noun - should it be uncountable - then Onesing applies to either one of the NP to delete Noun and Adjective nodes progressively leftwards from ONE(S) and Swooped Sentence nodes progressively rightwards from ONE(S), only provided that these nodes are semantically identical with the corresponding nodes in the unchanged NP, and only until the deletion process is blocked by the first nonidentical element met on that wing. There is a very strong constraint against Onesing applying to that NP of the pair which bears all primacy relations to the other NP; but should this constraint be violated the output of Onesing may be restored to grammaticality by the Exceptional Intonation Rule.

It may be objected that Onesing is a very peculiar transformation because of its progressive deletion and because of its bidirectionality. There

is, however, a plausible explanation for these characteristics. Onesing is a redundancy reduction rule which deletes items under an identity condition on the assumption that the deleted items are recoverable from memory. There are various means by which the location of deleted material is indicated. In the case under discussion the reminder is one(s), but elsewhere it is deformed sentence structure, or a floating auxiliary verb such as do. The natural boundaries on deleted material are utterance boundaries and new (i.e. not repeated) items, neither of which are to be recalled from memory; and these are the boundaries that contain deletion by no matter what transformation. When all the material between two boundaries has been deleted that particular application of the transformation is over and further deletion is only possible by a second application, or more likely another transformation. These general conditions on the scope of deletion by transformations of course bind Onesing, though its peculiar characteristics are largely explained by the fact that the head of an English NP is medial. One(s) is required to be head of NP and therefore it is medial, so the deletion boundaries can lie both to the left and to the right of it; as a result Onesing is bidirectional on just those occasions when the deletion boundaries do lie respectively on the left and right of ONE(S). Were English NP to have the structure of Swahili NP with the NP head to the far left, then Onesing would not be bidirectional. The only way in which Onesing is progressive is in finding the deletion boundaries closest to ONE(S); whether nodes read en route are deleted when found not to be boundary nodes, or whether they are marked for simultaneous deletion when the boundaries are established, is a moot point. In this respect Onesing must be like any other redundancy reduction rule. However, if Onesing does delete progressively from ONE(S) outwards, then it is moving from deleting the more general to deleting the more particular specification of NP reference.

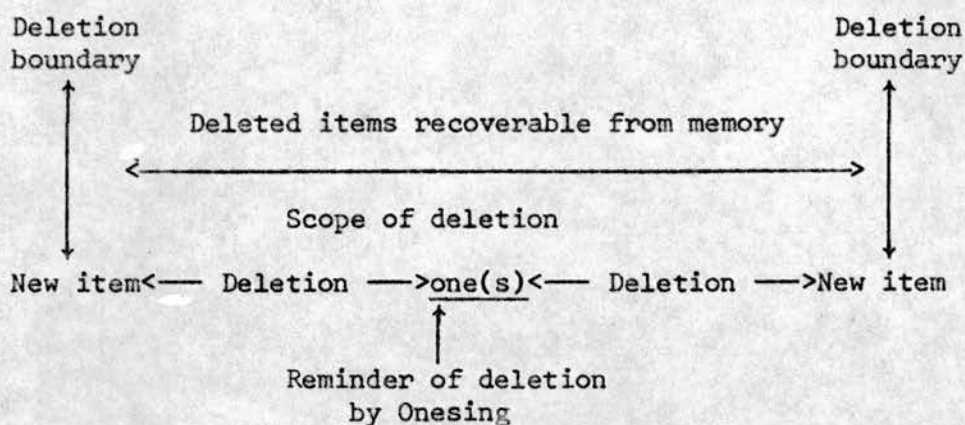


Figure 5.1 Onesing as an example of the scope of redundancy deletion

ONESING AND THE ARTICLE AND NUM NODES

Not accounted for is the fact that Article and Num nodes are never deleted by Onesing. If there is an explanation it must be that these grammatical categories are taken to be essential in ensuring that the reduced phrase refers unambiguously. In this Onesing manifests one of several parallels with VP Deletion. Both transformations are reduction rules operating under an identity condition. Both leave a reminder at the location of deletion: Onesing leaves one(s) and VP Deletion an auxiliary verb. ONE(S) is generated in deep structure but there are many occasions on which it is absorbed into a noun during lexicalisation (cf. p148) unless the NP in which it occurs is operated upon by Onesing, in which case it surfaces; Ross (1972a) has shown that DO is generated in the deep structure of affirmative, non-passive, declarative sentences in the simple aspect to be absorbed by a verb during lexicalisation (cf. p150) unless VP Deletion applies, in which case it surfaces. Finally, VP Deletion deletes a whole VP except for the Auxiliary and the grammat-

-ical categories of tense, mood, and aspect; presumably this is to ensure that the reduced sentence predication is correctly understood. In parallel fashion, when Onesing leaves one(s), definites and quantifiers behind, these are to ensure that reference will be as precisely defined as possible in the reduced circumstances.

DEEP ONE(S) AND COUNTABLENESS

It appears that because deep ONE(S) is the number carrier for NP, countable NP are defined as those which contain this element as their head noun in deep structure; and conversely, uncountable NP do not. An uncountable NP cannot therefore establish the proper conditions for the application of Onesing, so that unless "cream" and "lightning" are - unusually - allowed to be countable, the following sentences fail:

5.114) *You say you ate some of the cream, which {^{one?}
ones?

5.115) *I saw that lightning but not the earlier one.

The grammaticality of the residue of Onesing can be used as a test for the true head of an NP to which the transformation has supposedly applied; in the context of (5.114-115) it is ungrammatical, and shows that the head of neither 'which of the cream' nor 'the earlier lightning' is ONE(S).

Pluralia tantum nouns like scissors, suspenders, trousers, pants, pliers or nutcrackers, all of whose referents are perceived as two moveable leglike members either pinioned to a bridge at one end or so as to cross each other, have uncountable characteristics in that they show no opposition between singular and plural - because there is no singular noun, cf. *this scissor(s); and they are only acceptably denumerable using a classifier construction - cf. *two trousers but two pairs of trousers, and *two lightnings but two flashes of lightning, or *two cattle

CONCORD WITH ONE(S)

NP-internal concord holds between demonstratives, quantifiers, and the NP head, and I have nothing new to say about it. The well formedness condition on demonstratives, WFC 5.4, is very straightforward,

The demonstrative is plural if and only if it ranges over the NP head ONES. Otherwise it is singular.

Quantifiers are spread between Article and Num nodes. Of the quantifying articles SOME ranges over both ONE and ONES; ONE (a, an), EACH and EVERY over ONE, but also over ONES if and only if it is predicated by an intervening FEW; ALL and BOTH (= ALL TWO?) range over ONES. Of the quantifiers under Num, numerals other than ONE, and FEW, MANY, SEVERAL, ENOUGH, all range over ONES, with exceptions when the sister to ONES is a pluralia tantum noun (see below 228). The only Num constituent to range over ONE is its identical twin the numeral ONE. As the representation here proves, the quantifier and the noun ONE are semantically identical - ONE is bifunctional. In this it is not unique among quantifiers: number set words like dozen, hundred, and thousand, and fraction words like quarter, half, fifth, all share the same characteristic of doubling as nouns- and on occasion so do other quantifiers.

normally

All NP headed by ONES/have plural external concord relations; but not all those with singular NP-internal concord have singular external concord. One set of exceptions is governed by well formedness condition WFC 5.5

Any NP which dominates conjoined (i.e. anded) heads has plural external concords.

This applies to both countable and uncountable NP:

5.119) The lion and the unicorn {^{*was}_{were}} fighting for the
crown, {^{*was it?}_{were they?}¹⁰

5.120) The thunder and lightning {^{*is}_{are}} frightening Caspar,
{^{*is it?}_{are they?}¹⁰

However, NP-external number concord may differ from NP-internal number-concord - as was seen earlier in the chapter; for example, when a set is perceived in terms of the extension of its members, or a number of phenomena are perceived as a single quantity, as in:

5.121) The committee were approached separately with the offer
of a year's free petrol for a favourable report.

Five loaves and five fishes is all you need to feed five
thousand when you've got the right connections.

The discord between NP-internal and NP-external number is a pragmatically conditioned abnormality, such as will be further discussed in Chapter 9.

BEHEADING

Onesing can apply to the structure underlying

10. This tag could occur with the meaning 'was that the case?' wherein it proes the sentence, not the subject NP. Then it would be acceptable.

5.122) First we stayed in Jack's villa and then we all went to
my villa.

to turn NP[MY VILLA ONE] into NP[MY ONE], which can be lexicalised in some nonstandard dialects to my one but in standard English becomes mine. Lexicalisation is one way to dispose of underlying ONE(S); another is to delete it by a transformation I shall call Beheading. Beheading only applies in circumstances where ONE(S) gives redundant information; under some conditions it is obligatory, and under others, optional. Where it is optional I suspect it to be proportionately more common in the spoken than in the written language.

Beheading is obligatory where ONE(S) is sister to a quantifier other than either, each or every - it is utterly mysterious why these should be exceptions. Being predicated by a quantifier the information ONE(S) carries, namely countableness and number, is redundant because both these are indicated by the quantifier, cf.

5.123) Could you buy some tomatoes, we don't have many left.

If you could spare me some onions I'd be grateful for a few.

Max offered him a cigar and he took three!

Idi fancied two of the girls and wanted to marry both of them.

As we see from these examples Beheading applies both to directly generated QP consisting of QP[Q ONE(S)] and to Onesed NP with similar structure.

The Beheading of an NP consisting, after Onesing, of NP[QArt[ONE] N[ONE]] leaves NP[QArt[ONE]]. With this acting as regent the extra responsibility placed on the quantifying property of the Quantifying Article causes it to be lexicalised not as a(n) but as one.

Curiously, an NP head is obligatory after every and this quantifier's

presence in NP blocks Beheading. Equally curious is the fact that either and each are optional regents: with either of these as sisters to ONE(S) Beheading is optional.

Although there are certain constraints, which we shall look into presently, Beheading is generally applicable to definite NP which would otherwise have one(s) as their surface head. This is no evidence that Beheading is a postlexical rule, incidentally, because if it were the impossible *NP[a(n)] would be derived instead of NP[one]; so Beheading must be prelexical. The reason for this transformation being restricted to definites (except where the heir-apparent is a quantifier) is probably that the audience is supposed to already know the reference of a definite NP and, in accordance with the principle of least effort (Zipf 1949), if a reduced NP provides sufficient clues to the identity of its reference, a fuller linguistic description is unnecessary.

Of those NP either directly generated or reduced by Onesing such that the Determinative Article is juxtaposed to ONE(S), the latter is deletable after demonstratives, but not after THE or a possessive pronoun. Surely the reason will be that the countability characteristics of ONE(S) are in no way even partially predictable from NP[the], NP[my], NP[your], etc. But number is predictable from the demonstratives - as it is from those other reduced NP, personal pronouns. It is significant that Beheading is almost obligatory in standard English after these or those (more precisely their underlying forms), so that ??these ones and ??those ones border on the unacceptable in that dialect, though not in some nonstandard ones. By contrast there is absolutely nothing to choose between the comparative acceptability of this and this one, or that and that one. I think the reason for the discrepancy must lie in the fact that this and that can be used of uncountables as well as

countables, but these and those are restricted in use to countables and the reference of those fence-sitters, the pluralia tantum nouns; a fact that entails both that the "one" in this one identifies a countable NP where this alone is ambiguous as to countability, and also that "ones" in ??these ones is redundant.

If Onesing leaves an adnominal noun heir-apparent, Beheading is possible in the spoken language but unlikely in written text. For example

5.124) Would you like a plastic drainpipe or a metal one?

*Would you like a plastic drainpipe or a metal?

Would you like the plastic drainpipe or the metal one?

Would you like the plastic drainpipe or the metal?

5.125) Kate always uses a tea strainer and I use a coffee one.

*Kate always uses a tea strainer and I use a coffee.

Kate always uses the tea strainer and I use the coffee one.

?Kate always uses the tea strainer and I use the coffee.

Many examples of Beheaded definite NP with adnominal regents are of dubious acceptability; this, I am certain, derives from the apparent-ambiguity syndrome inherent to such NP whose regent is in danger of being taken as the true head.

After the application of Onesing leaves an adjective juxtaposed to one(s) in a definite NP, Beheading is possible provided that the adjective denotes a property inherent to the phenomenon to which it is attributed, e.g. properties of dimension, extent, weight, consistency, age, or colour, Cf.

5.126) *Give him a dry towel, I'll take a wet.

Give him the dry towel, I'll take the wet.

You take the hot drink and I'll take the cold.

You try this powdery stuff and I'll taste the sticky.

You have the long pole and I'll take the short.

Ernestine will need the wide tunic, the narrow will do for
Grace.

Emily is the fat sister, Brongwen the thin.

These pegs are round ones, let me try the square.

Kikuyu women carry the heavy loads, men the light.

Jane prefers rough chins to smooth. ¹¹

The hard springs don't make you sick like the soft.

Give him the three by two and I'll take the four by three.

Judas gave himself the two hour watch and put Simon on the
four hour.

Can I get you the French mustard or the English?

Do I look better in the black blouse or the white?

Which goes better with the curtains, the red carpet or the
blue?

Which goes better with the curtains, a red carpet or a blue
one?

*Which goes better with the curtains, a red carpet or a blue?

Modal adjectives, which denote properties not inherent in a phenomenon but imputed to it by the speaker, may not serve as regents, perhaps because the speaker's judgement cannot be guaranteed to identify the correct reference for the NP when it is subjective and not objective.

5.127) *John's was the boring lecture and Harry's the interesting.

John's was the boring lecture and Harry's the interesting one.

11. Here is a nice piece of evidence that generics are definite.

*Nicky is the troublesome child and Miles the noisy.

Nicky is the troublesome child and Miles the noisy one.

*That I'll be a millionaire is the impossible dream, that

I'll be a pauper the possible.

That I'll be a millionaire is the impossible dream, that

I'll be a pauper the possible one.

*Purity is the taciturn sister and Charity the cheerful.

Purity is the taciturn sister and Charity the cheerful one.

*Max is the confident brother and Siegfried the nervous.

Max is the confident brother and Siegfried the nervous one.

It is inexplicable why modal adjectives should be allowed to become regents when they are either comparative or superlative; but they may.

5.128) Harriet's dress was the more expensive one.

Harriet's dress was the more expensive.

Martha's jacket was the most expensive one I've ever heard of.

Martha's jacket was the most expensive I've ever heard of.

Of the Goldberg twins Zahava is the prettier one.

Of the Goldberg twins Zahava is the prettier.

Of the Goldberg girls Zahava is the prettiest one.

Of the Goldberg girls Zahava is the prettiest.

Since Onesing can never leave an adjectival qualifier floating without the adjective it qualifies, Beheading can never leave such a word as regent:

5.129) The old film they have on tonight is that very old one.

They screened it two months ago, do you remember?

*The old film they have on tonight is that very old. They

screened it two months ago, do you remember?

*The old film they have on tonight is that very. They

screened it two months ago, do you remember?

Except after determiners, comparatives and superlatives, Beheading is only permissible where there is no rightwing structure to the NP. A clause appositive to the NP (NP's auntie) is no deterrent to Beheading, however. For example, Beheading cannot delete "one" from (5.130) unless "(which is) on the bed" is appositional, as in (5.131):

5.130) Do I look better in this black blouse or the white one
(which is) on the bed?

*Do I look better in this black blouse or the white⁺(which is) on the bed?¹²

5.131) Do I look better in this black blouse or the white,[#] (which is) on the bed?¹³

Further examples are

5.132) Emily is the fat sister and Sue the short one with blond hair.

*Emily is the fat sister and Sue the short⁺with blond hair.

Emily is the fat sister and Sue the short,[#] and she has blond hair.

5.133) Would you like the plain plastic drainpipe or the metal one with ornamental fittings?

*Would you like the plain plastic drainpipe or the metal⁺with ornamental fittings?

Would you like the plain plastic drainpipe or the metal,[#] which has ornamental fittings?

Where a determiner is heir-apparent Beheading NP with a rightwing cohort is permissible, thus

12. Superscript "+" indicates there is no tone group boundary at this location and so the following clause is restrictive not appositional.

13. Superscript "# " indicates, as before, the location of a tone group boundary.

- 5.134) Could you find me that one in the red jar?
 Could you find me that⁺ in the red jar?
 How about these three⁺ in my hand?
 There are some⁺ to go to Scarborough.

And similarly when the heir-apparent is a comparative or superlative,

- 5.135) Zahava is the prettier one of the Goldberg twins.
 Zahava is the prettier of the Goldberg twins.
 This melon is the best one I've ever tasted.
 This melon is the best I've ever tasted.

H Beheading deletes ONE(S) from NP when it has no left sister noun other than possibly an adnominal noun left behind after Onesing. It is controlled by the suitability of ONE(S)' left sister to become the surface head of the NP; the suitability of the various heirs-apparent is summarised in Figure 5.2.

Heir-apparent	Suitability	Beheading is
Quantifiers other than EACH, EITHER, EVERY	Semantics of ONE(S) accounted for	Obligatory
THESE, THOSE	Number accounted for & perhaps countableness	Almost obligatory
EACH, EITHER, THIS, THAT	Singular number but countableness ambiguous	Optional
Comparatives, superlatives	Only in definite NP but nevertheless mysterious	Optional
Non-modal adjectives	"	Less optional
Adnominal nouns	Likely to be taken for NP head	Unhappy
EVERY	As suitable as EACH, etc.	Impossible
THE, personal pronouns modal adjectives, indefinite NP other than those in which the heir-apparent is a quantifier	Number & countability not accounted for	Impossible

Figure 5.2 A summary of conditions on Beheading

BODY SNATCHING

The interpretation of "-one" in someone, everyone, or anyone is 'person'. What is the semantic structure of this personal one? An indication of what it might be is given by the synonymy of the following pairs of sentences:

5.136) Someone is coming.

Somebody is coming.

5.137) Have you met everyone?

Have you met everybody?

5.138) I don't know anyone.

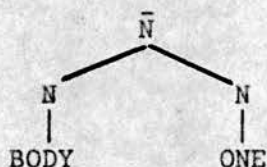
I don't know anybody.

5.139) [Archaic] I met on the train one who knew Monty before the war.

[Archaic] I met on the train a body who kn~~o~~w Monty before the war.

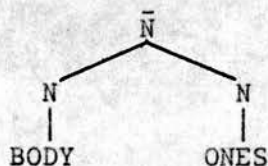
The synonymy of personal one and body leads me to postulate that underlying personal one is the configuration

5.140)

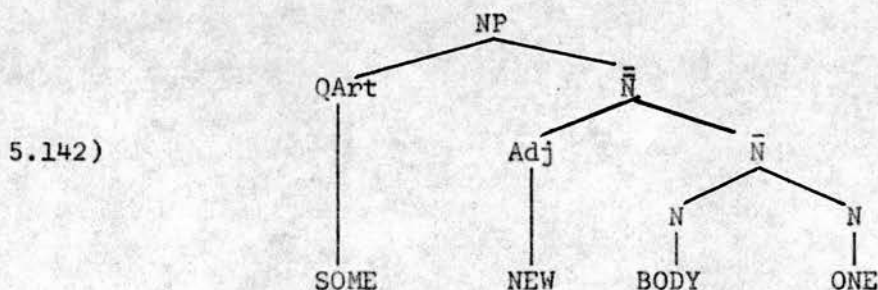


There is no plural for the relevant NP on (5.137-38); the plural for someone and somebody (5.136) is some people; that for the archaic one and a body (5.139) is also some people. The semantic structure of such instances of people is presumably

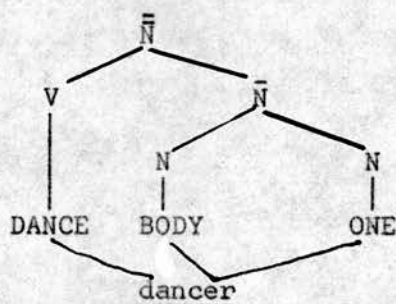
5.141)



I suggest that this subtree is lexicalised to people, or in some dialects to folk; except in generic NP, where it can alternatively be lexicalised to men¹⁴ - which we shall see is the required lexicalisation in certain environments¹⁵. The lexicalisation of (5.140) can be regular, to give body, or by some means develop one. It would be simple, if counterintuitive, to map the latter onto the subtree as it stands in (5.140); but if we consider that the configuration in (5.142),

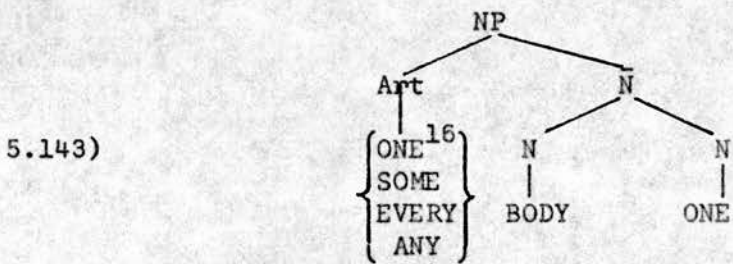


14. Nowadays there are rather weak egalitarian constraints against such 'male chauvinism'.
15. The configurations in (5.140-141) will occur in the semantic structure of such agentive nominals as dancer(s), worker(s), employer(s), where they are lexicalised as the suffix -er(s) under a constraint requiring their predication by an active verb under a bar-N node, e.g.

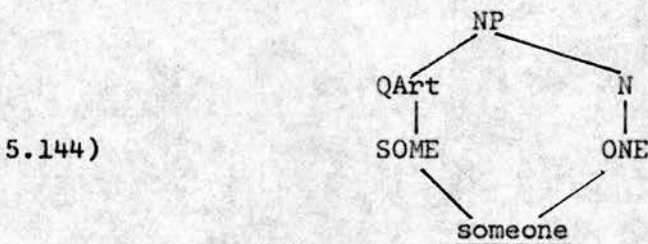


This would explain the occasional use of dance people as an alternative to dancers. Nouns like employee and absentee might have a somewhat similar origin, with BODY ONE(S) becoming -ee(s) when predicated by a particular kind of Adjective. There are all sorts of difficulties in specifying the conditions on the semantic structure of such nouns, which I shall not begin to try to solve here.

can only be lexicalised to some new person and not some new one, we must conclude that subtrees like (5.140) cannot optionally be lexicalised to one. Taking into account other facts which we shall discuss in just a moment, it would seem there is a rule of BODY Snatching which will delete the semantic item BODY and its mother node from a structure, under certain specified conditions. For instance, it will delete N|BODY| from a tree like the following:



Following BODY Snatching, the "N" node will be Pruned (cf. WFC 5.2) so that the tree on which lexicalisation takes place will be, for example

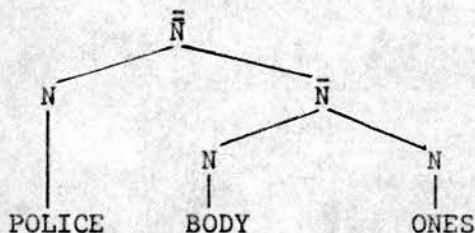


Personal one is enclitic on the Article constituent.

BODY Snatching does not apply to configurations like (5.143) but which contain ONES in place of ONE. It does, however, apply to certain other configurations containing ONES. For example, the noun police can mean either 'police force' or it is a pluralia tantum meaning 'policemen' (and never, therefore, 'policeman'). In the latter sense police presumably derives from the same deep structure as policemen; that is from (5.145):

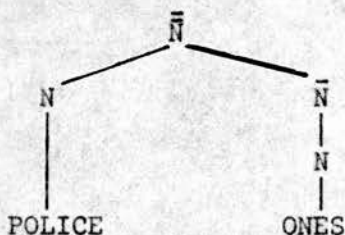
16. This is archaic. Formerly, Beheading followed BODY Snatching from ONE BODY ONE.

5.145)



The process of surfacing involves BODY Snatching and the subsequent obligatory application of Beheading. Thus, BODY Snatching reduces (5.145) to (5.146):

5.146)



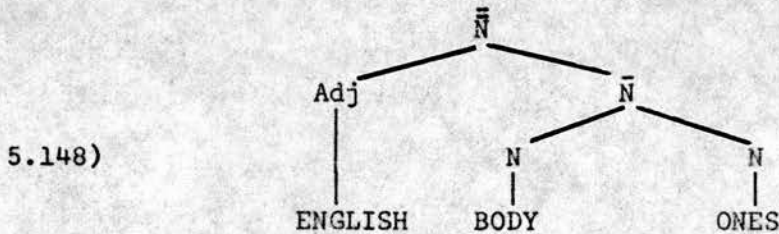
Pruning deletes the "N̄" node from (5.146) and Beheading chops out the head constituent leaving (5.147) to be lexicalised as shown:

5.147)

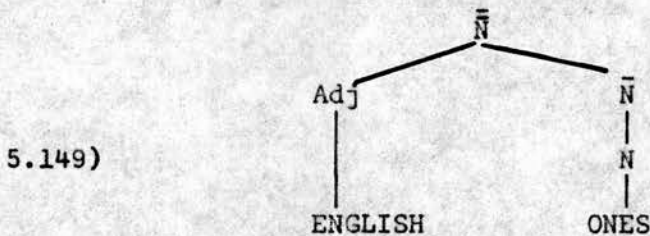


The surfacing process is inaugurated by BODY Snatching under certain configurational conditions which I shall only describe informally. The first precondition is that the Noun predicating \bar{N} [BODY ONES] must be either CAVALRY or POLICE, neither of which can be directly predicated on ONE(S); then it is required that the NP head be ONES and not ONE. The application of BODY Snatching is preferred in NP containing the definite article THE; but otherwise, although not grammatically necessary, it is preferred to lexicalise (5.145) directly, and obligatory to do so if there is a low denominator ranging over this subtree (cf. p.222 ff. for details).

Similar in their derivation, and the constraints upon their derivation, are nouns for nationalities such as English, Irish, Welsh, denoting respectively 'Englishmen' (or 'English people' or 'English folk'), 'Irishmen' (etc.), and 'Welshmen'. Again these nouns are plur-
alia tantum. The underlying semantic structure for this sense of, for example, English is closely similar to (5.145); and the surfacing process is identical:

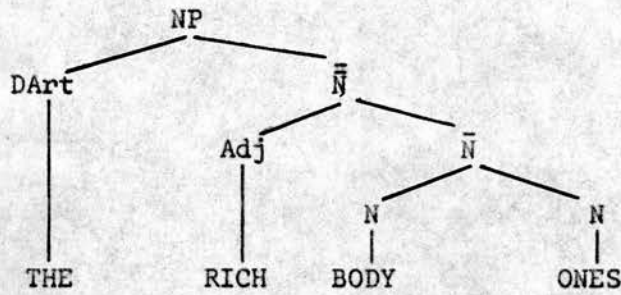


BODY Snatching may reduce (5.148) to (5.149), which Pruning and Beheading further reduce to (5.150):



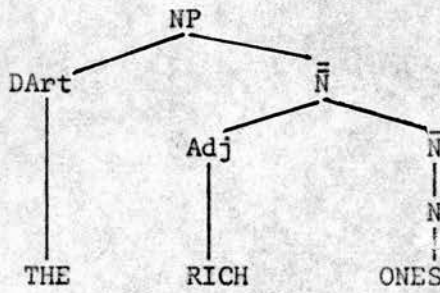
A similar process accounts for the grammar of such NP as the rich, the workshy, the dead, in which an Adjective predicated by the definite article is left as the surface head of NP. The semantic structure of the rich is given in (5.151):

5.151)

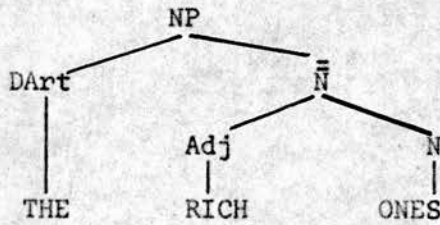


BODY Snatching can only apply where the NP is determined by THE ranging directly over an Adjective; thus *the two rich is impossible, though the two rich people is fine; *some rich is impossible, but some rich people or some of the rich are both good; etc. The application of BODY Snatching to (5.151) is followed by obligatory Pruning and Beheading with the result that (5.151) becomes in turn (5.152), (5.153) and (5.154):

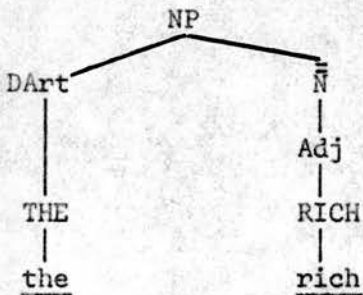
5.152)



5.153)



5.154)



It is difficult to see how all these human denoting NP can be successfully accounted for without the rule of BODY Snatching. It is a rule conditioned by the constituents in the configuration containing BODY: in general by the content of the Article node, and the form of ONE(S). Generally, too, the absence of Num is required; but it may be present under sufferance in those cases where part of the triggering mechanism for BODY Snatching is the semantic item immediately predicating \bar{N} [BODY ONES].

Chapter 6

THE GRAMMAR OF ENGLISH NUMERAL CLASSIFIERS

INTRODUCTION

In Chapter 4 it was discovered that classifiers are invariably the head nouns of QP, and that there are seven semantic classes of them, with few - if any - syntactic distinctions between them. In this chapter I shall consider the grammar of classifiers in much more detail; discussing their surface forms, their relationship with predicative quantifiers, and their semantic representation.

THE K-FORM PLURAL CLASSIFIERS

There is a handful of classifiers that some, but by no means all, speakers of English can use in the k-form (i.e. unchanged) plural¹.

Examples are

- 6.1) two pound of flour
 two stone of potatoes
 two hundredweight of coal
 two ton of scrap iron
 two foot of dowelling
 ?two mile of bad road
 two pair of trousers
 ?*two kind of apples

In each of these NP the classifier may be plurally marked, and indeed, it would be more correct to say that the classifier is usually plural

1. An informal survey of native speaker response to these constructions is reported in Appendix B.

marked. I find the classifier constructions of (6.1) colloquial, even dialectal, with a tendency towards being archaic². This impression is borne out by the recorded history of the words: although instances of plural marking on all these classifiers are to be found in the earlier examples listed in the Oxford English Dictionary, plural marking has been on the increase in recent years.

There are some peculiar constraints on the use of these k-form plural classifiers. Plural denominators other than few and many can occur with them quite happily, a few and not many included:

6.2) He brought me { three } { several } { a few } { pound of potatoes.
stone of flour.
hundredweight of coal.
foot of staircarpet he'd nicked.
pair of trousers.

6.3) ?Few ton of scrap iron will not make the collector rich.
?Few hundredweight of coal are stolen each year from this yard.
?Few pound of potatoes doesn't have some bad ones, after the
frost.
?The timber merchant who can't cut straight will sell few
foot of timber to the canny customer.

The main problem with few is stylistic: the k-form plural classifier is a colloquial form more common in spoken than in written language, but few seems to be a formal quantifier, and realistic colloquial contexts

2. K-form plurals of measurement nouns occur₁ in scientific registers in oral reading of formulae such as 3ms⁻¹ as three metre per second: but these words are very unlikely to be written. Similarly foot pound per second per second or kilogram metre per second per second, in which the expressions *feet pounds or *kilograms metres would be impossible, are written in symbolic form. Thus the k-form plural classifiers are virtually restricted to the spoken language nowadays; and it is this which leads me to say their use is colloquial, even dialectal.

for it do not occur; this is what makes the sentences of (6.3) so dubious. The grammatical judgements on (6.3) do not result from semantic incompatibility, as we can see from (6.4), where not many is used in place of few:

6.4) Not many ton of scrap iron can fail to make the collector rich.

Not many hundredweight of coal are stolen from this yard each year.

Not many pound of potatoes doesn't have some bad ones in it after that frost.

The timber merchant who can't cut straight won't sell many feet of timber to the canny customer.

Although not many predicates k-form plural classifiers, many alone does not:

6.5) *The bakery uses many pound of flour each day.

*He's sold me many foot of dowelling in our time.

*Many hundred weight of coal have fallen off that lorry this month.

I cannot believe many is too formal a quantifier, and that not many, or too many (which can also predicate the k-form plural classifier) are sufficiently colloquial! The unacceptability of (6.5) seems to be the consequence of idiomatic preference: the preferred mode of expression for all of (6.5) uses the idiom many a + classifier.

6.6) The bakery uses many a pound of flour each day.

He's sold me many a foot of dowelling in our time.

Many a hundredweight of coal has fallen off that lorry this month.

But (as we see from the final example) the many a + classifier formula is singular, not plural; and so it is irrelevant to our discussion.

No Quantifying Articles may predicate a k-form plural classifier unless there is an intervening Num; (the bracketted asterisks in the following indicate that the classifier is impossible as a plural, although it may be possible as a singular):

- 6.7) (*) All hundredweight of coal in stock { ^{has} / _{have} } been sold.
 All three hundredweight of coal in stock { ^{has} / _{?have} } been sold.
- 6.8) (*) Some pound of flour { ^{was} / _{were} } found in a box in the pantry.
 Some two pound of flour { ^{was} / _{?were} } found in a box in the pantry.
- 6.9) (*) Buy any pair of trousers you fancy.
 Buy any two pair of trousers you fancy.

In (6.7-9) singular external concord is preferred to plural concord. The only explanation is that with the classifier in this form, yet plural, the QP is regarded as primarily denoting a quantity, not a number of pairs, pounds, or hundredweights. Without a Num node in the underlying configuration this would be impossible: thus there is a special relationship between the k-form plural classifier and the Num constituent ranging over it.

Compare the asterisked sentences of (6.7-8) with the following:

- 6.10) [✓] Some pounds of flour disappeared through a hole in the wall.
 All hundredweights of coal that fall off lorries will be
 paid for by the driver.

It is very clear that in these sentences the classifier constructions denote respectively 'some one-pound bags of flour' and 'all one-hundredweight

bags of coal'. These are reminiscent of the many a + classifier formula, and indeed, 'many a pound of flour' is one reading of (6.11):

6.11) many pounds of flour

(6.11), with a denumerated plural marked classifier, exemplifies an ambiguity in many such QP where the classifier is a measure noun; the corresponding QP with a k-form plural classifier is unambiguous. Contrast

6.12) two pounds of flour

6.13) two pound of flour

(6.13) gives one reading for (6.12); but it cannot be given the other reading, 'two one-pound units of flour'. Notice that there is a phonetic difference between the pronounced forms of the different senses of (6.12): in the quantum sense, where it means the same as (6.13), there is no phonological word boundary between "two" and "pounds", the latter being enclitic (in the sense of Abercrombie 1964); also, both of these monosyllables are of medium strength. By contrast, in the number-of-units sense of (6.12), "two" is a strong syllable followed by a phonological word boundary - a slight pause. As one would expect, these are just the same phonological conditions which apply to the pronunciation of five dozen, and five dozens, respectively (cf. p.102). Is dozen in five dozen an k-form plural classifier? Certainly there is a close similarity between this number set word and the unchanged plural classifiers: both five dozen and five pound primarily denote a quantity, and not a number of dozens, or a number of pounds. Furthermore in the phrases

6.14) five dozen eggs

6.15) five pound of plums

The sole scope of "five" in (6.14) is "dozen", and in (6.15) it is "pound". Perhaps number set words were once more nouny than they are today; that would explain such constructions as (6.16) occurring:

6.16) 9 dozen of hearing (1612, Surtees Soc. No.68, 26)

The close similarity between number set words like dozen and k-form plural classifiers is found in established numeral classifiers, cf. (4. 14-16), as well as English. And it makes the special relationship between quantifier and classifier more explicable. The existence of such a relationship explains why QP may occur alone without the classified NP, as in (6.17), whereas there is no construction consisting of an unquantified k-form plural classifier combined with the classified NP, cf. (6.18).

6.17) She weighs two stone more than me.
 I lost both stone through illness not dieting.
 The rift measured many foot across.
 The fish that got away must have weighed many more pound
 than the one we caught.
 I always buy two pair at a time during the sales.

6.18) *Foot of picture frame were left over.
 Feet of picture frame were left over.
 *There were pound of flour in the store.
 There were pounds of flour in the store.
 *Hundredweight of coal is washed ashore with every tide.
 Hundredweights of coal are washed ashore with every tide.
 *Not many merchants sell potatoes in stone any more.
 Not many merchants sell potatoes in stones any more.

It may be that the particularly close relationship between the

quantifier and the k-form plural classifier is the reason why the plural meaning remains morphologically unmarked on the latter. Although in present day standard English the quantifier is not as a rule so influential as to make plural marking redundant, there are many languages, and even earlier stages of English, where the quantified noun is either optionally or obligatorily in k-form - given that the quantifier is plural. For instance in Thai neither the classifier nor the classified noun is marked for plural:

6.19) bŭrì s^v·ŋ muan 'cigarette two stick' two cigarettes

In Yucatec the classified noun is optionally marked for plural:

6.20) oš^v tul maak '3 animate person' three people

oš^v tul maakooob 'three animate persons' three people

In Yurok the plural is marked on the classifier, but not on the noun:

6.21) nahksemit noʒoy 'three+pairs shoe' three pairs of shoes

In Zanzibar (Omani) Arabic, in formal speech and in writing, the plural noun is not used with numbers above ten, e.g.

6.22) ithna'shara faras 'twelve horse' twelve horses

But with numbers from 2 to 10, the plural noun is formally correct, although in colloquial speech it is rarely used, e.g.

6.23) thalatha afras 'three horses' [Formal]

thalatha faras 'three horse' [Informal]

Thus in colloquial Zanzibar Arabic the quantified noun is not normally marked for plural. Nor was it in seventeenth century Welsh: nouns heading NP containing denominators are all in k-form, those heading NP not containing a denominator, but within the scope of a denominator

greater than one, have marked plural form. For example

- 6.24) ddengwr a deugain a dau cant (Numbers 26.10)³
 'ten+man & 2[x]20 & 2[x]100' two hundred and fifty men
- pedwar ugain sicl (II Kings 6.25)
 '4 [x] 20 shekel' eighty shekels
- 6.25) bump a phedwar ugain o wŷr (I Samuel 22.18)
 '5 & 4 [x] 20 of men' eightyfive men
- pump a thri ugain a thri chant a mil o siclau (Numbers 3.50)
 '5 & 3 [x] 20 & 3 [x] 100 & 1000 of shekels' one thousand three hundred and sixtyfive shekels

It is not only foreign languages that have quantified nouns in the k-form plural: in the accounts rolls of late mediaeval and early modern England many nouns are used both in the regular marked plural and also in the k-form plural. There is no satisfactory etymological explanation, and the alternation of the two synonymous forms over a period of centuries in the same geographical area would make an attempted etymological explanation very hard to swallow. The vast majority of the unchanged plurals are instances of quantified nouns and there is at least one gem of an example which shows that this k-form plural was normally restricted to the scope of a quantifier:

- 6.26) In latthes c hert latthe (1426, EETS 1905)
 The plural reference of (the second instance of) the noun "latthe"(meaning 'laths') is indicated by the accompanying quantifier "c", 'a hundred';

3. From the Standard Edition of the Welsh Bible, 1620. Quoted from Hurford (1975, 192f.)

but there is nothing to indicate the plural reference of the preceding instance of the noun, "latthes", other than the plural suffix. Plural marking is only necessary for the purpose of unambiguously indicating the plural, but this logical necessity is counteracted by the regularising principle, which tends to render plural marking obligatory to all nouns with plural reference whatever their environment. The only disadvantage of (6.26) compared with (6.27) is that the unchanged plural is irregular.

6.27) In latthes c hert latthes

The quantified noun in late Middle English is to be found in both the marked and the k-form plural; the demise of the latter can, I think, be put down to the regularising principle. The tendency to regularise grammar is motivated because an irregular form has the disadvantage of being an extra learning load on the speaker, and the motivation is particularly strong when there is no corresponding advantage to offset this; thus it is particularly strong where there are regular and irregular forms in free variation. So we find that the plurals crocuses and syllabuses are preferred to croci and syllabi; ain't contracted from are not has given way in standard English to aren't; and in English phonology /hw/ for wh- has almost completely given way to /w/⁴. Similarly, the k-form plural of the quantified noun has been regularised. Perhaps the reason that certain nouns predominantly used as classifiers have remained optional k-form plurals for some speakers is that they usually concatenate with quantifiers and are not so frequent in other

4. The result of this has been eleven homophones whale-wail, what-watt, wheel-weal, when-wen, where-wear, whether-wether, which-witch, while-wile, whither-wither, whole-hole, why-Wye; syntactic differences will normally distinguish the members of all but two of these pairs, whose disambiguation is not so important as to necessitate the retention of /hw/.

	3 Pfund Kartoffel	(German)
	3 pund kartofler	(Danish & Norwegian)
6.29)	3 ton of coal	
	3 ton steenkool	(Dutch)
	3 Ton Steinkohle	(German)
	3 ton kull	(Danish & Norwegian)
6.30)	3 pair of shoes	
	3 paar shoenen	(Dutch)
	3 Paar Schuhe	(German)
	3 par sko	(Danish & Norwegian)

These examples could be augmented: measurements like foot are no longer in common use in continental Europe or Scandinavia (it is not easy, for example, for a Dutchman to remember that inch is duin; but having recalled the word, he has no hesitation telling you that in quantifying expressions it has an unchanged plural). Metric measures, and units like decibel, farad, volt, etc. have been patterned on the older measurement nouns and in all of the (Northern) Germanic languages except English⁷ they occur as k-form plurals in quantifying expressions, even when plural forms are used elsewhere. This syntactic characteristic of Germanic languages has been edged out of standard English by the regularising of plural forms: a process which, in the case of classifiers, has probably been encouraged by the Romance heritage of English; because none of the Romance languages has k-form plurals within quantifying expressions.

In Germanic languages quantified nouns denoting dimension, volume, weight and amounts of money, together with some number set nouns, are

7. But see footnote 2 above (p.185).

typically in the k-form plural: the k-form plural classifiers of English are cognate with them. I noted in (6.1) that the k-form of the varietal classifier kind is almost completely ungrammatical, cf.

6.31) ?*three kind of maize

 ?*three type of maize

 ?*three sort of maize

6.32) three kinds of maize

 three types of maize

 three sorts of maize

It is no surprise that the corresponding words in Germanic languages also require plural marking:

6.33) drie sorten mais (Dutch)

(The -en suffix marks the plural)

 drei Sorten Mais (German)

 dre slags mais (Danish)

(The -s suffix marks the plural)

 dre types mais (Norwegian)

And again, with the unit classifiers piece and bit, no k-form plural is possible:

6.34) *three piece of wood

 *three bit of wood

 three pieces of wood

 three bits of wood

The same holds for Germanic languages, cf. Dutch drie stuken hout.

In English, as in other Germanic languages, amounts of money can be stated using an unchanged plural noun, but counting denominations of money (like counting one-pound bags of flour) requires the marked plural:

- 6.35) He gave me two pound for it.
 He thought he had two fivers but he only had two {(*)pound.
 pounds.
- 6.36) Er hat mir fünf Pfennig gegeben. 'He gave me fivepence'
 Er hat mir fünf Pfennige gegeben. 'He gave me five pennies'
- 6.37) Dit boek kost 15 {gulden. 'This book cost fifteen guilders'⁸
 *guldens.
 Ik betaalde de melkboer één gulden. 'I paid the milkman
 [the sum of] a guilder'
 Ik betaalde de melkboer met één gulden 'I paid the milkman
 with [a] one guilder [coin]'

There can be no doubt that the k-form plural classifiers of English are part of its Germanic inheritance. In which case the k-form plural is the consequence of the noun's position in a quantifying expression.

There is nothing comparable in either Germanic or Romance languages to the unit classifier head as in three head of cattle. Its k-form plural is undoubtedly a consequence of its being a numeral classifier, and the fact that it has no marked plural form is almost certainly to distinguish this particular use of the word from its use in the fuller sense to denote that upper part of the body bearing mouth, eyes, ears and brain (or some comparable set of sense organs). Several other nouns also have a k-form plural and a marked plural which correlate with different senses of the word, and are used as disambiguating forms; they include the archaic classifier sail, cf.

- 6.38) Ten sail of ships went up the sound.
- 6.39) Fifteen hundred Foot, fiue hundred Horse / Are march'd vp
 (Shakespeare 2H.IV II.ii.186)

8. Examples from Klooster (1971)

6.40) A ring of pikes, mingled with shot and horse

(Marlowe 2Tam III.ii)

6.41) These days there are so many craft on the Thames, we can
hardly move.

We might compare

6.42) a.	ten head of cattle	b.	ten heads of cattle
	1500 foot		1500 feet
	500 horse		500 horses
	five shot		five shots
	there are so many craft		there are so many crafts
	on the Thames		on the Thames

The (a) and (b) examples of (6.42) have different meanings, but the k-form plural nouns in (a) are metonymous and indisputably derived from the corresponding nouns in (b)⁹. In every case the two plural forms disambiguate two senses. It is no accident that the classifiers head and sail are among the k-form plural nouns, but how are the other k-form plurals in (6.42a) to be explained away? Historically, they derive from expressions like

6.43) men of foot
men of horse
men of shot
vessels of (small) craft

in which the final noun is uncountable. If 1500 foot, say, was an abbreviation of 1500 men of foot, as the Oxford English Dictionary suggests,

9. This is self-evident in all but the last examples, but historically craft as in (6.42a) was metonymous, cf. Harris (1704): "Craft is a Sea word signifying all manner of Lines, Nets, Hooks, &c. which serve for Fishing; and because those that use the Fishing Trade use Small Vessels ... they call all such little Vessels, Small Craft." From which the adjective "small" was dropped.

then we need no further explanation for the lack of plural form for "foot". The k-form plurals of (6.42a) are therefore subject to rational explanation; the classifiers having k-form plurals just because they form the scope of a quantifier on nearly every occasion of use.

THE SEMANTIC REPRESENTATION OF CLASSIFIERS

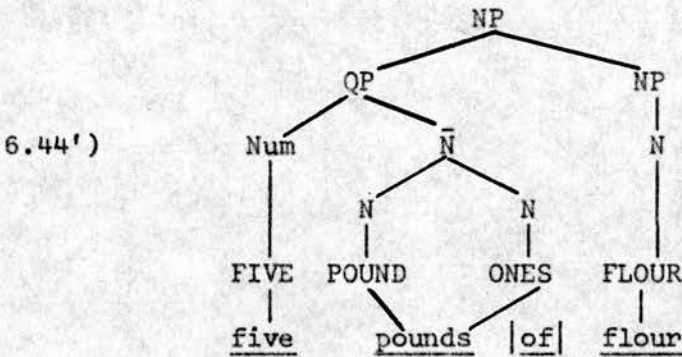
Earlier I compared classifier constructions like the following,

6.44) five pounds of flour

6.45) five pound of flour

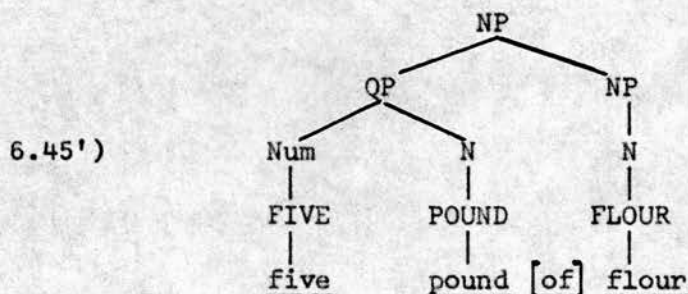
and remarked that (6.44) may be given the same interpretation as (6.45), or alternatively the interpretation 'five (one-)pound units of flour'.

The word "units" used in this gloss will be rendered in the semantic structure by ONES, and the semantic configuration underlying (6.44) is



Consider the possible derivation for the k-form plural classifier of (6.45). In view of all that has been said about the influence of the (plural) quantifier on the use and retention of this form, it is likely that the semantics of the plural are induced in QP by the Quantifier: this would make the usual plural (deep) head noun ONES redundant. ONES denotes a number of individuals, and because the k-form plural classifier is known not to denote a number of individuals, there is a prima facie argument for taking the k-form plural classifier to derive directly from

the deep semantic form, and not through the deletion of ONES, nor the deletion of the plural morph on the lexical item. Inexorably we are drawn to propose the following configuration as the semantic structure for (6.45):



Further support for these differing analyses of the plural marked classifier and the k-form plural classifier comes from the following set of facts.

In a sentence like (6.46) "pounds" unequivocally means '(one-) pound units'; "the ones" denotes 'pound units of tomatoes', and therefore "pounds" must contain ONES:

6.46) Usually the pounds of tomatoes we sell are overweight, but
the ones we've been selling today are under.

We might compare this with

6.47) *The four pound of tomatoes I bought were the ones I was
diddled over.

6.48) The tomatoes I bought were the ones I was diddled over.

Clearly in (6.48) "the ones" denotes 'the tomatoes I bought' and, of course, tomatoes contains underlying ONES. By analogy, in (6.47) "the ones" ought to denote 'the four pound of tomatoes I bought', but this is impossible because pound does not contain underlying ONES. Similarly, we might compare

- 6.49) a. These four pounds of sugar are ones I refined myself.
 b. These four pounds of sugar I refined myself.
- 6.50) a. *This four pound of sugar {^{is one}_{are ones} } I refined myself.
 b. This four pound of sugar I refined myself.

In (6.49a) "ones" is coreferential with "these four pounds of sugar", which denotes not the quantity, but 'four (one-)pound units of sugar': "pounds" contains ONES. By contrast with the plural subject NP of (6.49) the subject NP of (6.50) is singular, and it denotes a quantity of sugar; coreferentiality between "one" or "ones" and "this four pound of sugar" is impossible, because "pound" does not contain ONES.

In case it be thought that we may have lighted on a characteristic peculiar to measurement classifiers, consider the case of the unit classifier head. A classifier like this, whose function is to count units, is par excellence expected to contain ONES: yet all evidence is to the contrary. Compare

- 6.51) a. Those two flashes of lightning were ones such as I have never seen before.
 b. Those two flashes of lightning were such as I have never seen before.
- 6.52) a. *Those ten head of cattle were ones such as I have never seen before.
 b. Those ten head of cattle were such as I have never seen before.
- 6.53) Those cattle were ones such as I have never seen before.

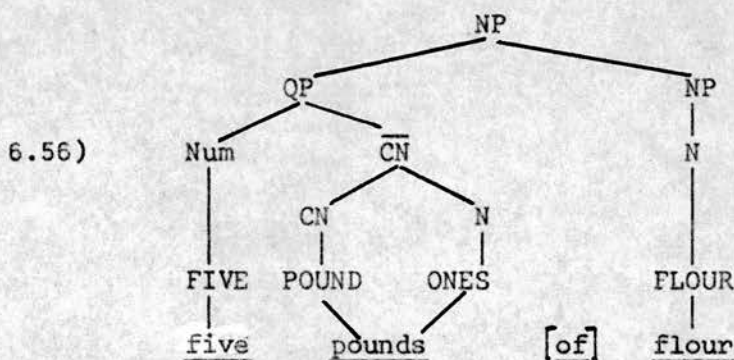
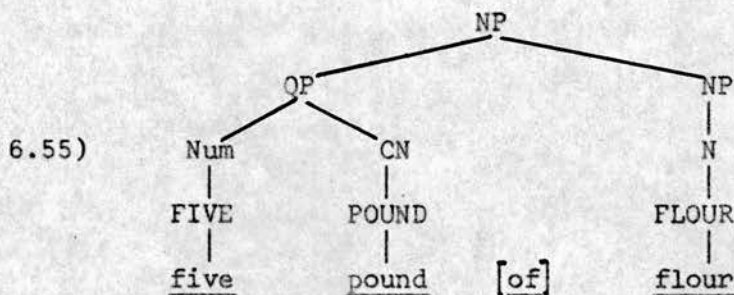
Comparing (6.51-52) in the now familiar way reveals that flashes contains ONES but head does not. The fact that head is not plural marked is irrelevant to the argument, because, as we see from (6.53), the unmarked cattle does contain ONES. In fact, were (6.52a) to be attested in utterance,

the "ones" it contains would be understood to refer not to "head", but to "cattle". Something analogous would be understood from

6.54) ??These two brace of pheasant are ones I shot myself.

Certainly "ones" here would not be understood to denote 'brace' but 'pheasants'; but I am doubtful about the grammaticality of this sentence.

All the evidence points to the correctness of the respective analyses made of the plural marked classifier and the k-form plural classifier. But now there is a difficulty. (6.44), five pounds of flour, is ambiguous between the reading for (6.45) and the number-of-units meaning described in the semantic structure (6.44'). These different readings are marked phonologically in exactly the way that five dozen is phonologically distinguished from five dozens; that is, in the quantum reading both "five" and "pounds" are medium strength syllables, and "pounds" is enclitic on "five" (as per Abercrombie 1964); in the number-of-units meaning "five" is a strong syllable followed by a brief pause marking a word boundary between it and "pounds". The phonological difference between the two readings confirms the significance in their difference, which therefore needs to be marked in semantic structure. But how? The solution I shall propose has very interesting consequences for the grammar of countability. To begin with I suggest that the grammar contains a class of Classifier Nouns, CN, which have a lot in common with other nouns, and may sometimes function in exactly the same way as other nouns; but which also have certain peculiar characteristics: one of these characteristics is that some of them occur in phrases where a plural denominator ranges over their k-form. A consequence of this innovation is that (6.45') needs to be replaced by (6.55):



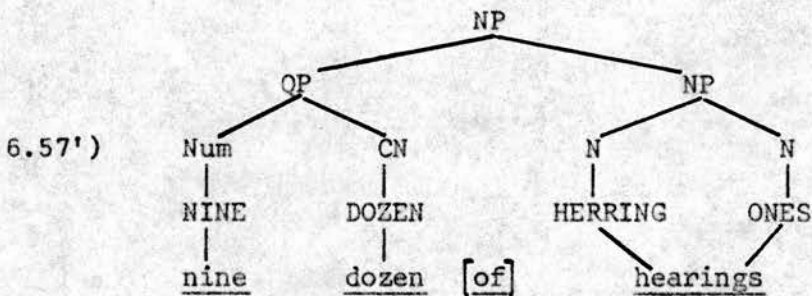
We shall shortly see reason to make a slight adjustment to the labeling of this tree; and I shall also further justify the introduction of a bar-CN node, but for now I shall say only that in the concatenation Num $\bar{\text{CN}}$, "bar-CN" is enclitic, whereas in Num $\bar{\text{N}}$, "bar-N" is a separate phonological word from "Num".

It seems likely from the evidence presented above that Classifier Nouns were not plural marked because of their special association with a quantifier; the fact that the ancestors of many were neuter nouns may, or may not, have had some bearing on this. In all other respects the classifier nouns are like other nouns, and they may head phrases ^{the} with/internal structure of NP. Outside of the classifier construction, nouns of identical form and meaning to the CN have all the usual characteristics of countable nouns, including reference to discrete phenomena with spatio-temporal extension, though admittedly no constancy of form or material. Their nounlike characteristics will surely have encouraged

regular plural marking even when they were used as classifiers, unless, as with head, this might have led to ambiguity. Thus did semantic structures like (6.56) come about from those like (6.55). Notice that in (6.56) the classifier function of CN is retained through the bar-CN node, and so the semantic structure distinguished from that in (6.44').

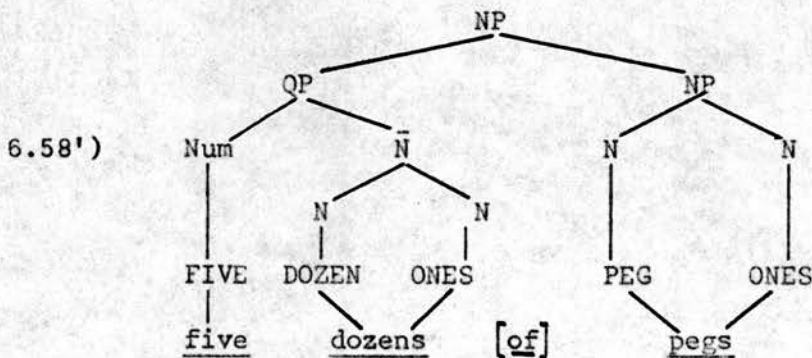
Number set words like dozen and hundred were, and in some respects still are, included among CN. The semantic structure for our seventeenth century example (6.57), will be (6.57') - which has exactly the same configuration as (6.55):

6.57) 9 dozen of hearings



By contrast, (6.58) will have the deep structure (6.58') comparable with that of (6.44'):

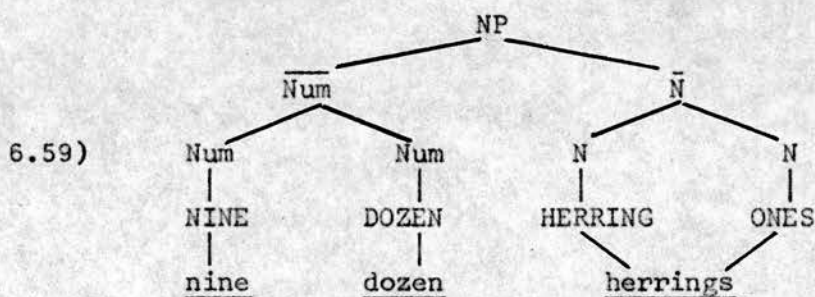
6.58) five dozens of pegs



We cannot get a quantum reading for (6.58), one that parallels the

semantics of (6.56), because it is nonsense to postulate DOZEN[~] ONES as the semantics of dozens. The anomaly is explicable because dozen and hundred and one are all in contrast with each other, with one being the set of one. In consequence dozens must be a lexicalisation of the semantic item DOZENS, a deep structure plural in direct contrast with ONES. In which case ONE(S), DOZEN(S), HUNDRED(S), etc. must all be in contrast, and ONE(S) must be a classifier: the unit classifier in English. The more closely one considers this idea, the more obviously it seems to accord with the function of this semantic item which is contained in every NP that counts individual phenomena. Interestingly ONE(S) would seem to be more or less the translation equivalent of the Burmese classifier khù, of which Burling (1965, 262) writes: "Burmese speakers sometimes include -khù in the same series as the classifiers for the powers of ten: shé, "ten", yá, "hundred", tháum, "thousand," etc. ... They differ from each other primarily in the size of the group indicated, -khù indicating only one individual object (units), shé, "groups of ten," etc." Although ONE(S) is logically a good candidate for a unit classifier, it does not pattern in quite the same way as the other number set words (which all pattern alike); however, the differences can, I think, be satisfactorily explained away. Both one and dozen function as Num constituents (cf. (6.59) below) and then they are precise denominators, cf. one herring and nine dozen herrings. The corresponding plurals ones and dozens are both Classifier Nouns, and both denote vague numbers: ones 'a number of individuals' and dozens 'a number of dozens of individuals'. The dissimilarities wholly result from the peculiar status of ONE(S) as the head of countable NP; ONE(S) is the only classifier that can be predicated by anything other than Num or a numeral adjective (like in single one, or round dozen, or whole pound); the other number set words cannot, cf. (6.71) below. In

complementary fashion, the various grammatical constraints on the surfacing of ones described in Chapter 5 do not allow a phrase like *ones of apples to be well formed, although dozens of apples, and the like, are quite all right. ONE(S) is more nouny than other number set words so that whereas ONE still functions as a CN, DOZEN is nowadays a constituent of Num: thus nine dozen herrings has the structure



The fact that dozens, hundreds, etc. have remained CN is only explicable as a consequence of their being vague and not precise numbers; vague numbers in other languages have also remained outside the numeral system, cf. Danish dre hundre mennsker 'three hundred people' as against hundrevis av folk 'hundreds of people'. Thus it is not surprising to find ONES syntactically comparable to DOZENS, HUNDREDS, etc. except that it can be Number Absorbed. This can largely be explained by its relative lack of semantic content compared with DOZENS and the other number set words; a difference clearly brought out in the denotational glosses quoted above, where ones was said to denote 'a number of individuals', whereas dozens denotes 'a number of dozens of individuals'. There is no theoretical reason why DOZENS and HUNDREDS should not be Number Absorbed, but any language which did so would have to be extremely 'polysynthetic' in its morphology. English, to the contrary, tends towards the 'analytic'. So far as I know there are no languages which incorporate such number sets as DOZENS or HUNDREDS into the morphology of their nouns; but there are languages which have dual and trial

number. The almost 'analytic' morphology of English militates against more than the semantics of ONE and ONES being incorporated into noun forms; resulting in a simple binary system. Thus it is not an especially remarkable phenomenon that ONE(S) should be Number Absorbed, but that DOZENS and HUNDREDS should not; and there are no serious contraindications here to ONE(S) being analysed as a classifier.

The general function of classifiers in human languages is to identify certain salient characteristics of the reference; sometimes according to immutable convention, and sometimes according to the speaker's peculiar perception at the time of utterance: characteristics such as material composition, shape, consistency, arrangement, or quantity, may - either separately, or in certain combinations - furnish the content of a classifier; cf. Chapter 10 for full details. English ONE(S) classifies only the characteristics of number: singularity or plurality. It was remarked in Chapter 4 that there is nearly always a co-occurrence constraint, though of variable restrictiveness, between classifiers and the nouns they classify. The constraint varies from the biunique correlation between the Burmese classifier gein and the noun gein ('house'), or that between Thai chÿag and the noun chá·ŋ ('elephant'); through the severely limited class of nouns that can be classified by English head, or Burmese ú (for nouns referring to people of status, scholars or teachers); to class classifiers like Burmese kaun (for animals, corpses, or children); or the more expansive Yucatec tul, which classifies all animate creatures; to the general classifiers like Burmese khù or Vietnamese cái, which may occur with a very large number of nouns; down to Cebuano buʔok¹⁰ or

10. Sources for information on Burmese and Thai have already been given. Ramón Arzápalo gave me data on his mother tongue Yucatec; for Vietnamese cf. Emeneau (1951), Thompson (1965); for Cebuano, Greenberg (1972).

English ONE(S), which can be used with any countable noun. The fact that ONE(S) does not distinguish human from nonhuman, animate from inanimate, or long from round, is no disproof to its being a classifier. What it does is indicate a discrete phenomenon, or a number of such phenomena, as distinct from each other and all other kinds of phenomena.

Denumeration in English presupposes the occurrence of either a classifier such as POUND, or ONE(S), as the NP head: if ONE(S) is a classifier, this is as much as to say that a necessary condition for denumeration in English is the existence of a classifier in the deep structure of the NP; and so English is a numeral classifier language. The fact that ONE(S) does not only co-occur with quantifiers is not counterevidence to this conclusion, because in such established numeral classifier languages as Thai or Kiriwina, the classifier will also occur in nounless phrases like demonstrative or possessive NP, and adjectival phrases: cf. Chapter 10; Haas (1951); Malinowski (1920). Again, the fact that the putative classifier ONE(S) is NP head confirms rather than disproves its being a classifier. Lanyon-Orgill (1955, 36) wrote of Thai: "basically the classifiers play the same part as do the nouns in European tongues, and ... the "nouns" are in fact adjectives being used to describe or restrict the significance of classificatory particles." These remarks appear to be based on the writer's intuitive response to Thai classifier constructions, rather than rigorous grammatical analyses; but if we substitute for Lanyon-Orgill's "adjectives" my term 'predicates', his observation corresponds almost exactly to my analysis of the deep structure of countable NP in English; though it does not accord with the analysis of configurations containing classifiers other than ONE(S). Peter Denny, in a private communication dated August 1975, mentions a paper by F.K. Lehman of the University of Illinois which argues

at length "that classifiers lexicalise arguments not predicates;" with which Denny, who has been deeply interested in classifiers¹¹, says he agrees. Lehman's analysis would entail the classifier being the deep head of the NP in which it occurs: the position ONE(S), which is invariably an argument, must hold.

The strongest argument against viewing ONE(S) as a classifier is that a deep string such as (6.60) has the forbidden constituent order *Q[^]N[^]C, cf. UWFC 1 (p.95).

6.60) FIVE HERRING ONES

No other English classifier violates what seemed to be a universal well formedness condition, and we must therefore question whether ONE(S) can really be a numeral classifier. However, in defense of my analysis it should be noted that UWFC 1 applies only to the surface structures of classifier constructions; it is at present unknown whether it also applies to their deep structures. In the surface realisation of (6.60), viz.

6.61) five herrings

there is no classifier at all; and what is more, it is impossible for one(s) ever to surface in the presence of the noun it classifies, although it can surface elsewhere; and so UWFC 1 cannot apply to the classifier ONE(S). This is quite a strong defense, but there is an objection to it; namely that the plural morph on "herrings" is the surface realisation of the underlying classifier, and it is unequivocally separated from the quantifier by the intervening k-form noun "herring". There is no satisfactory counter to this objection. It flies in the

11. See the References.

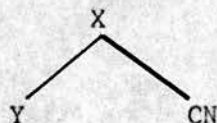
face of the facts, and also of customary grammatical practice, to argue that lexicalisation imposes an indivisible form on herrings such that the prelexical elements from which it is derived are not recoverable from the lexical items in (6.61); this would deny the accessibility of morphology. There is no doubt that unless we maintain that the plural morph does not count as the surface form of the classifier ONES, the universal condition on the order of constituents in numeral classifier constructions is violated by English NP containing ONE(S). As a last resort, there is the old saw about the exception which proves the rule! It should be said that there is nothing intrinsically unnatural about $Q \hat{N} C$ or a $C \hat{N} Q$ constituent order, provided co-occurrence constraints exist between Q and C - as they do in well formed English NP, between any quantifier and ONE(S). In Swahili, for instance, which is not a numeral classifier language but a concordial classifier language (cf. Chapter 10 and Allan (1977)), there are $C \hat{N} Q$ structures, the mirror image of (6.60), with constraints between C and Q comparable with those in English:

6.62)	C	N	Q	
	*m-tu	kumi	'singular+being-person ten'	*ten person
	wa-tu	kumi	'plural+being-person ten'	ten people

It should be remembered that there are several characteristic differences between ONE(S) and the rest of the Classifier Nouns (e.g. dozens, half, pound, head), none of which occur in structures violating UWFC 1, but conversely, can none of them be predicated by a Noun or Adjective. It is therefore conceivable that they are, by the terms of UWFC 1, numeral classifiers and ONE(S) is not. But on balance the evidence that ONE(S) is a Classifier Noun, whether numeral classifier or not, outweighs the serious objection to this analysis.

We find that the CN node mother to ONE(S) may be the daughter of either bar-CN or bar-N; but it is only directly dominated by bar-CN in the case that it is predicated by another CN constituent: thus, bar-CN can only mother CN nodes, and never another node. In consequence bar-CN nodes never contain Adjectives or Nouns. Furthermore, CN other than ONE(S) cannot be predicated by any node other than Num. Thus we can state the following well formedness condition, WFC 6.1:

Given the NP subtree



- i) Iff CN is ONE(S), then either (a) Y may be N or Adj, and X is \bar{N} ; or (b) Y may be CN, and X is $\overline{\text{CN}}$; otherwise the structure is ill formed.
- ii) Iff CN is a classifier other than ONE(S), then Y is Num, and X is \bar{N} , otherwise the structure is ill formed.

With these restrictions on CN it is obvious that their number is much smaller than the number of classifiers identified in Chapter 4. And in addition it is clear that if ONE(S) is a classifier, CN do not only occur as the heads of QP. We are now in a position to define QP:

QP is a functional label for either a quantifier ranging over an NP (viz. a determined bar-N node), or a quantifying phrase headed by CN (either ONE(S) or some other).

And we can be quite clear that the presence of QP within NP structure triggers Of Insertion between it and the NP it quantifies. The set of Classifier Nouns, CN, can be discovered by testing for those surface heads of QP which cannot be predicated by an Adj constituent. Of unit counters other than ONE(S), only head cannot be predicated by an

Adjective (6.63); all collective classifiers can be, (6.64); so can irregular measures (6.65), arrangement classifiers (6.66), varietal classifiers (6.67), and nonfractional partitives (6.68):

- 6.63) two nice pieces of cake
 two brilliant flashes of ~~thunder~~ ^{lightening}
 two painful jabs of the needle
- *two { angry } head of cattle
 { dangerous }
 { quiet }
- 6.64) two valuable collections of paintings
 three large herds of elephants
 two scholarly committees of experts
- 6.65) two large lorryloads of gravel
 two piping hot cups of punch
 two size 9 left shoefuls of champagne
- 6.66) two heavy coils of rope
 two small balls of wool
 two distant rows of trees
- 6.67) two rare kinds of weed
 two new brands of coffee
- 6.68) two nice pieces of a cake she made
 the two ragged ends of a piece of rope

Other classifiers can be predicated by Adjectives if they are given a number-of-units reading (6.69a-72a), but not if they are given a quantum reading (6.69b-72b). In the quantum reading for these classifiers they are necessarily CN. Thus fractional partitives:

- 6.69) a. the nice half of the cake
 a tasty three quarters of the orange
 three tasty quarters of the orange
 b. *nice half of the cake
 *tasty three-quarters of the orange
 (*)three tasty quarters of the orange

The bracketted asterisk of (6.69b) indicates that a quantum reading for the juxtaposed phrase is impossible. Number set classifiers:

- 6.70) a. two new pairs of trousers
 b. *two new pair of trousers

It is noticeable that there is no ambiguity in two pairs as there is in two pounds: pair has become more nouny than pound. Other examples:

- 6.71) a. two new dozens of pegs
 new dozens of pegs
 b. *two new dozen pegs
 (*)two new dozens of pegs

Again the bracketted asterisk indicates that a quantum reading is impossible. In truth "dozen" in (6.71b) is nowadays not a classifier but a numeral, and it cannot be predicated by any adjective other than a numeral adjective; it is significant that CN other than ONE(S) have this same characteristic, which perhaps should be put down to their peculiar numeral quality. Notice the lack of this particular quality in ONE(S) - again. The last set of classifiers that turn out to be CN are regular measures; cf.

- 6.72) a. two underweight pounds of tea
 two warm pints of milk
 b. *two underweight pound of tea
 *two warm pint of milk

In summary, then, the class of Classifier Nouns comprises regular measure classifiers, fractional classifiers, number set classifiers, and the unit counter head¹². These represent a fairly small set of words; only some of which can be used in the k-form with plural denominators in modern dialects of English. But the only CN to occur in plural form in deep structure, are the number set classifiers ONES, DOZENS, SCORES, HUNDREDS, THOUSANDS, etc. All other surface plurals derive by predication on ONES.

CONCLUSIONS

In this chapter I have examined the grammar of English classifiers, and offered an explanation for the fact that some of them occur in the k-form when a plural denominator ranges over them. The explanation hinges on the fact that there is a class of Classifier Nouns which, with the exception of ONE(S), only occur within the scope of a quantifier. There are many languages in which the redundant plural marking on nouns within the scope of a plural denominator is omitted; it seems that this was the practice with some nouns in earlier forms of English. Plural marking has become the norm for all English semantic plurals irrespective of position, with the exception, in some dialects, of those CN very rarely found outside the scope of a denominator.

Perhaps the most significant discovery has been that ONE(S), earlier shown to be the deep head of every countable NP, is a Classifier Noun with the function of unit counter: that is, it classifies singularity or plurality in the reference of the noun. Analysing ONE(S) as a number set classifier accounts for its similarity to DOZEN(S), HUNDRED(S),

12. And formerly sail, too.

THOUSAND(S), etc.; and so, by analogy with them, for its otherwise inexplicable relationship to the numeral ONE. The argument of Chapter 5 that ONE(S) heads every countable NP, seemed at the time a peculiarity of English, shared perhaps by some closely related languages. But with the discovery that ONE(S) is a classifier, this analysis of countable NP might be expected to accord with deep structure descriptions of denumerable NP in many languages quite unrelated to English. That is, it might indicate the language universal characteristics of such NP; but unfortunately I have neither the time, nor the space here, to investigate this tantalizing hypothesis.

Chapter 7

COMPUTING COUNTABILITY

In Chapter 5 countable NP were defined as those which contain ONE(S) as their deep structure head. Characteristically, uncountable NP do not contain ONE(S), and so the conditions for Onesing to apply to them do not exist and there are no sentences like

- 7.1) *Zap stole coffee and Eric one.
 *Effie bought the Scottish beef and Monica the Argentinian one.
 *I saw that lightning but not the earlier one.

Therefore we can test for the countability of an NP by judging whether it can be reduced by Onesing.

Should Onesing not apply to a countable NP, ONE(S) is Number Absorbed into its left sister noun during lexicalisation; the resulting lexical noun will be in the k-form if the singular ONE was the deep head of NP, and the plural form if ONES was Number Absorbed. Because ONE(S) does not exist in its deep structure, the lexical head of an uncountable NP can only ever take the k-form. In consequence uncountable NP have singular internal and external concord. This formal characteristic of singularity is not unconnected with the fact that uncountable NP typically denote phenomena which are not regarded as existing in denumerable parts (of which more anon); we might go so far as to say that the formal singularity of uncountable NP represents the unitary nature of their denotation. Certainly the nondenumerability of their denotata entails that uncountable NP cannot include denumerators - namely the quantifiers few, several, many, both, each, either, every

and the numerals including a(n), providing the latter does not range over little. By contrast the denotation of countables is regarded as existing in discrete units which are denumerable: hence any NP which contains a denominator is countable. Any single unit must be in the nature of things picked out as an individual; and this is represented formally in singular countable NP by the obligatory presence of a determiner. It follows that any singular NP which does not contain a determiner must be uncountable, which is confirmed by the underlined NP of

7.2) Water is good to drink

This old-timer says sex isn't what it used to be.

Very old and fibrous, half-cooked and over salted Basque
turnip is not my cup of tea.

Any singular NP which contains a quantifier other than a denominator or some will be uncountable, cf. the underlined NP in

7.3) He could save much trouble by using a little tact.

Enough shit hit the fan to make us all suffer.

All lightning frightens Milquetoast.

A singular NP containing some may be either countable or uncountable; in (7.4) the uncountable examples are underlined:

7.4) Somebody stole some sugar.

Some animal or other ate some rice.

Some logician I spoke to kept saying 'Some x such that ...'

Some water is leaking from the standpipe.

Any and the Determinative Article also reveal nothing of the countability of the NP in which they are embedded; the only exception is the definite generic NP which are invariably countable, cf. (7.6) - once again

uncountable NP are underlined:

7.5) Anybody seen any lightning?

My aunt is famous for her bread.

This cochineal will turn that icing pink.

This pound note was hidden in that drawer.

The lightning has frightened the little girl.

7.6) The cat is an animal. (generic)

The English are a funny race. (generic)

Lightning frightens Milquetoast. (generic)

The lightning frightens Milquetoast. (nongeneric)

Countability is a feature of noun phrases and not strictly speaking of nouns, but many nouns have a preference for occurring in either countable or uncountable NP, and the preference of a particular noun can typically be related to the nature of the phenomenon which ~~they~~ ^{it} denotes; a point which will be discussed in some detail in later Chapters. A phenomenon might be regarded as a nondenumerable substance from one viewpoint, or as a denumerable object from a different viewpoint. For example one may see a stone as an instance of the substance stone and say

7.7) This is $_{NP_6}$ [stone]

or one may view it as an object constituent of stone and say

7.8) This is $_{NP_8}$ [a stone].

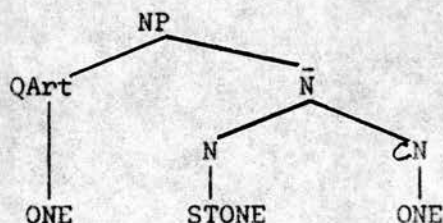
It would not be strictly accurate to say that every countable contains an uncountable, but it is a fact that the semantics of the noun left sister to ONE(S) in the deep structure of a countable NP can always be

the head of an uncountable NP. Thus NP₇ in (7.7) has the deep structure of (7.7') below, and NP₈ in (7.8) has the deep structure of (7.8').

7.7')



7.8')



Even typical countable nouns like car can occur in uncountable NP as we see in (7.9):

7.9)

The scrapyard was full of smashed car.

There must be a million pounds worth of car in that car park.

That jalopy doesn't look much, but it's all car.

Although these examples of uncountable car strike one as a bit peculiar, they are acceptable in standard English which does not permit such NP as

7.10)

*a lightning

*these lightnings

in which a typically uncountable noun is located in a countable NP.

There does not seem to be any semantic anomaly that prevents the ready interpretation of (7.10) in terms of 'flashes of lightning' and the block against these NP seems to be entirely syntactic and arbitrary.

Lest it be objected that this comment is based on a hypothetical case

let me substantiate it with an example from nonstandard English. There

are uncountable nouns in standard English that are widely used in count-

able NP where English is a second language; one of the commonest examples

is equipment as in

7.11) At great expense we have bought a new equipment for the lab.

7.12) Some equipments have been removed from the laboratory by
unauthorised persons.

Such instances of the countable use of equipment are correctly interpreted in terms of the standard English 'pieces of equipment' - which is, of course, the denotation of the word in these nonstandard dialects. Because no semantic anomaly results from the countable use of this noun and others like it, it is difficult to convince the ESL speaker that he should only use it in uncountable NP. The point of interest for our current investigation is that whereas there are uncountable nouns that can never in standard English turn up in countable NP, there are no countable nouns which never occur in uncountable NP; in consequence any comparison of the countability preferences of nouns has to be based on tests for those nouns which can be found in countable NP.

In Chapter I it was pointed out that many nouns may occur in both countable and uncountable NP, though with different frequencies; and by way of illustration Figure 1.1 compared the estimated frequencies for a handful of them. Rather than try to calculate frequencies of occurrence - which reveal something about usage and rather less about grammar - we can instead use various environmental tests to discover the number of countable environments each noun can enter. This will give an accurate computation of the relative countability preferences of each noun. Of course we cannot put every English noun through the battery of tests, but a sample of ten nouns seems to cover every grade of countableness exhibited by all English nouns; they are car, English, lightning, man, mankind, Nepal, oak, police, scissors, and wheat¹. Other

1. Here is an example of one difference between the grammatical computation of countability preference as against the frequency estimation: cake was contrasted with wheat in Figure 1.1, but the grammatical tests show it to be in the same countability grade as wheat.

examples of nouns with the same countability grade will be given as we proceed.

The first test we shall use is whether the noun occurs in both singular and plural NP, on the evidence of NP-internal concord. Any noun which succeeds this trial is countable:

- 7.13) a. That car looks like Max's.
 b. This English is very poor you know.
 c. This lightning scares Scuttle silly.
 d. That man seems happy with his lot.
 e. We want a mankind aware of the pollution he is causing.
 f. There's only one Nepal, even if there are two Londons.
 g. This oak is a really fine old tree.
 h. A police without guns is safer than a police with guns.
 i. *This scissor(s) is blunt.
 j. This wheat is a species I haven't met before.
- 7.14) a. Fourteen cars collided in the fog.
 b_i According to Ranjit these English are an idle lot.
 b_{ii} The English(es) of America and Australia are rather different, cobber.
 c. *Even lightnings seemed brighter when we were young.
 d. Two men came to look at the pipe, did they?
 e_i *These mankind are a funny lot, said the Martian, pensively.
 e_{ii} Mankind are copulating to overpopulating, sloganed Ogden.
 f. There are two Londons, why not two Nepals?
 g. Those oaks have stood there for over a century.
 h_i These police will provoke trouble, said the carnival organiser.
 h_{ii} The police of London and Paris offer similar career prospects.

- i. These scissors are blunt.
- j. These wheats have been developed for high altitudes have they?

(7.13-14) show the following nouns to be countable because they succeed the tests for both singularity and plurality: car, English, man, Nepal, oak, police, and wheat. However, we see that mankind, English, and police demand special comment.

In (7.14e_{ii}) "mankind" is to be seen as making extensional reference, and not as a plural; notice that the plural concord in that sentence is NP-external, and the previous example shows that it is not permissible for this noun to occur in an NP with plural internal concord. Thus mankind, lightning and scissors all fail this test, by which they are branded uncountables.

In singular NP English unambiguously denotes 'the English language' so that (7.13b) could never denote 'a very poor Englishman'. In plural NP English normally denotes 'Englishmen'², though in the right context, e.g. (7.14b_{ii}), it can denote 'varieties of English'. The interesting thing about this noun, and also Welsh, Irish, French, and Dutch, is that when they denote nationals, viz. 'Englishmen', 'Welshmen', etc. they are pluralia tantum. This provokes the question whether the lexical form English, for example, is a single bisemous noun or a pair of nouns. Because the two meanings of such nouns are very clearly related to each other I believe we are dealing with a single bisemous noun; the case might be contrasted with that of bank which has two totally unrelated senses 'raised ground' and 'establishment for the custody of money'; under these conditions it seems best to postulate a pair of homophonous

2. To save space I will use this word in its traditional meaning of 'English men and women'.

and homographous nouns with the lexical form bank³. Nevertheless, we shall see that the grammar will require two separate countability grades for English in accordance with its two different senses.

Police shares a number of characteristics with English. In singular NP it unambiguously denotes 'police force'; and in plural NP it nearly always, or perhaps always, denotes 'policemen' - and then is pluralia tantum; thus "the police" in

7.15) I'm going to call the police.

could never denote 'the policeman'. I am dubious whether in a plural NP police can ever denote 'police forces'. (7.14h_{ii}) seems to derive from

7.14h_{ii}) The police of London and the police of Paris offer similar career prospects.

However it is possible to say

7.16) The police forces of London and Paris offer similar career prospects.

in which "the police forces" is a plural NP, so that it is conceivable for "the police" in (7.14h_{ii}) to be analogously plural. But police meaning 'police forces' never occurs in NP with proven plural internal concord, cf.

7.17) a. These police forces I have been talking about have recently been combined into a national force.

b. These police I have been talking about have recently been combined into a national force.

In (7.17b) "these police" can only mean 'these policemen'.

3. I am in the august company of the OED here; it lists the two senses of English under one entry, the two senses of bank under separate entries of that form.

- 7.18) a. The two police forces are mounting a combined operation.
 b. *The two police are mounting a combined operation.

(7.18b) fails because "police" denotes 'policemen' and conditions on the denumerating of policemen require the word policemen and militate against the use of police when the denominator is a low one. (This matter is further discussed below p.229). The upshot of all this is that (7.14h_{ii}) almost certainly has to derive from (7.14h_{ii}') and not from (7.16) or anything like it; and so in a plural NP police invariably denotes 'policemen', while in a singular^{NP} it invariably denotes 'police force'. As with English, the two senses of the word are so closely related that it seems inappropriate to regard the lexical form police as anything other than a single noun, but at the same time, two distinct countability grades are evidenced, as we shall see.

(7.14) tests for the possibility of the sample nouns heading a plural NP. The plural form derives from the Number Absorption of ONES during lexicalisation, and so it is one piece of evidence that ONE(S) is the deep head of NP. The other check on this is through NP reduced by Onesing.

- 7.19) a. Can we afford a new car? This one has had it.
 b_i The English living abroad are not altogether like the ones
 at home.
 b_{ii} ?An American English is so sloppy compared with a British one.
 c. *I missed that lightning but saw the earlier one.
 d. The man I saw was not the one I spoke to on the phone.
 e. A mankind more rational than emotional is one we cannot
 hope to see.
 f_i ?Nepal today is not at all like the one I knew in 1924.

- f_{ii} The London in Ontario is much smaller than the one in
England.
- g. This oak is in better condition than that one.
- h_i The police in Glasgow are much tougher than the ones in
Fakenham.
- h_{ii} A police without guns is a safer institution than one with
guns.
- i. The scissors I have are much sharper than the ones your
sister has.
- j. This wine is a Moselle and that one a Re^Aisling.

The Onesing test shows the following nouns in countable NP: car, English, man, London (in place of Nepal), mankind, oak, police, scissors, and wine (in place of wheat). Only lightning fails this test and is therefore uncountable. However, it is worth noting that the only countable NP mankind can head is of the construction exemplified here, viz. a mankind.

The dubiousness of (7.19f_i) arises from the fact that "Nepal" and "one" are almost coreferential: in fact the locational identity (and Nepal is after all the name of a place) might be sufficient to persuade some English speakers that these two words, or rather the NP which contain them, should be coreferential, and such speakers would reject this sentence because it formally indicates that the two NP are heteroreferential by showing NEPAL to have been left sister to ONE in the deep structure of the second NP. This reading is justified, it seems to me, but whether the linguistic expression of it is acceptable is dubious. Nepal instantiates the class of proper names; but although such a class may be semantically identifiable in the names of institutions, persons, places and geophysical features, I doubt whether it has regular syntactic definienda. Suppose we take as a definition that a proper name is uniquely

referring. Then when I say I know several Johns, and there are six Lewistons listed in my atlas (Bartholomew 1966) neither "Johns" nor "Lewistons" is a proper name because neither is uniquely referring. By contrast any of the underlined NP in (7.20) could be uttered so as to be uniquely referring although they contain common nouns; these NP must be functioning as, or in the same way as, true proper names.

7.20) Who defrosted the fridge?

Call in the army.

The blackmailer warned him not to phone the police.

Jenny is going to work for the Post Office.

Let's go home.

There are some eggs in the car.

Congress believes that shorter working hours are the right
of every worker.

Management reserves the right to dismiss staff who are
persistently late.

Government will publish a law banning transvestism in public
urinals.

It is characteristic of true (i.e. uniquely referring) proper names that they do not permit of any restrictive clause to be swooped down onto their rightwing, though appositional clauses are acceptable, cf.

7.21) *London⁺ I am talking about is London, Ontario.

*John⁺ who is in your class is a sneak.

7.22) London,[#] the one I'm talking about, is London, Ontario.

John,[#] who is in your class, is a sneak.

When they are not uniquely referring such nouns take determiners:

- 7.23) The London⁺I am talking about is London, Ontario.
The John⁺who is in your class is a sneak.

These characteristics are shared by uniquely referring NP headed by common nouns, cf.

- 7.24) The congress⁺taking place in Blackpool agreed the following motion.
*Congress⁺taking place in Blackpool agreed the following motion.
Congress,[#] taking place in Blackpool, agreed the following motion.
- 7.25) I'm going to work in the post office⁺round the corner.
*I'm going to work for the Post Office⁺round the corner.
I'm going to work for the Post Office,[#] round the corner.
- 7.26) I'm going to join the army⁺which needs me most, the one that is most deserving.
*I'm going to join the British army⁺which needs me most.
I'm going to join the British army,[#] which needs me most.

Thus there does not appear to be a syntactic distinction between common nouns and proper names, and any uniquely referring NP has the syntactic status accorded to true proper names. However, proper names are distinguished by their denotata and reference; and their scope of reference - that is to say the number of potential referents to which they can be applied - is strictly limited compared with the potential reference of a noun like car. How Nepal differs in its countability grade from car we will come to see.

I said earlier that the presence of a denominator in NP identifies

it as countable. But we can discern a difference between the weak denominator ONE, lexicalised as either a(n) or one - of which the latter is stronger than a(n), cf. p.50 - and the strong denominators (a) few, several, many, both, each, every, either, and numerals greater than one. The weak denominator may range over every one of the sample nouns except lightning, and, for the most obvious of reasons, the pluralia tantum. This test thus presupposes success in (7.13) which looked for those nouns that can head a singular NP; in consequence (7.27) can be taken to supercede (7.13).⁴

- 7.27) a. A car is indispensable where we live.
- b_i *An English I spoke to asked me where he could get a cup of tea.
- b_{ii} He speaks an English of a rather archaic flavour.
- c. *A lightning can be frightening.
- d. One man went to mow the meadow.
- e. A mankind full of hope we will never live to see.
- f. Two Londons may be, but there's only one Nepal.
- g. There's an oak in the front drive.
- h_i *A police on the beat caught Sharp Eddy red-handed.
- h_{ii} A police without guns is a safer institution than a police with guns.
- i. *He asked me for a scissor(s).
- j. This is a wheat that grows particularly well on high ground.

The strong denominators are more choosy than ONE and will only occur with nouns of a higher degree of countableness. Notice in (i) how peculiar

4. This effectively renders the both-singular-and-plural test redundant, because singulars are accounted for by success in (7.27) and plurals by the earlier Onesing test of (7.19).

pluralia tantum nouns are: this test gives a very ambiguous evaluation of their countability.

- 7.28) a. Many cars are not properly maintained.
- b_i ?There were several English staying in the hotel.
- b_{ii} ??*I've heard several Englishes in Nairobi.
- c. *Many lightnings are followed by thunder.
- d. Five men swapped pornographic pictures.
- e. *Mr. Spock was describing the differences between the two mankind(s).
- f. Are you sure there are two Nepals?
- g. Five thousand conifers replaced the five hundred oaks.
- h_i Five hundred police kept the demonstrators under control.
- h_{ii} *When the county councils were amalgamated so were the two police..
- i_i ??*Show me the two scissors again and I'll choose the pair I want.
- ??*the freedom fighters smashed the legs of two cattle.
- ??*I bribed the two police to forget the matter.
- i_{ii} ??We bought five cattle at the market this morning.
- ??The robbers were chased by six police.
- ??Eight scissors have disappeared from class 4.
- i_{iii} ?We need thirty scissors for class 4.
- ?The Shifta stole fifty cattle and took them across the border.
- ?Many police believe capital punishment is a good thing.
- i_{iv} Last year Charley's Aunt imported five thousand nutcrackers to Brazil.
- Seven thousand cattle have died in the drought.
- A hundred police were needed to control the demonstrators.
- j. Few wheats nowadays are not hybrid.

The strong denominator test reveals the following nouns to be countable: car, man, Nepal, oak, and wheat. By contrast English meaning 'English language' is virtually uncountable, police meaning 'police force', and lightning, and mankind are certainly uncountable, so far as this environment goes. All pluralia tantum - scissors and the '-men' interpretations of English and police - are shown to be only properly countable when the denominator is a large number, and virtually uncountable when the denominator is a number between two and roughly five; the acceptability of the NP containing a denominator ranging over a pluralia tantum noun gradually improves as the denominator is larger. Changes in the acceptability of these NP cannot be determined between any two consecutive numbers and I can be no less fuzzy about the location of the changes than I was above. What sort of conclusion about the countability of pluralia tantum can be drawn? In (7.28i) four levels of acceptability are identified: suppose we quantify the countability of the "?" environments as 0.5 countable, that of the "??" sentences as 0.25 countable, that of the "?*" sentences as 0.125 countable and the value of the fully acceptable sentences as 1.0 countable, then the average countableness of (7.28_{i-iv}) is $0.5 + 0.25 + 0.125 + 1.0$ divided by 4; which is 0.47 countable. Admittedly the figures on which this computation is based are somewhat arbitrary, but no fairer means of quantifying the countableness of pluralia tantum has suggested itself to me, and the result coincides with my intuitions.

The universal quantifier all occurs in both countable and uncountable NP, but in the former the NP is plural and in the latter it is singular. First of all consider the plural NP containing this quantifier:

- 7.29) a. All cars are prohibited beyond this point.
 b_i *Not all English are unwilling to work.

- b_{ii} ?All Englishes have a lot in common.
- c. *All lightning frightens Scuttle.
- d. All men are equal, but some are more equal than others.
- e. (*)All mankind(s) are God's children.
- f. All Lewistons are in the U.S. of A.
- g. All oaks are deciduous.
- h_i All police should be incorruptible. ("police" = 'policemen')
- h_{ii} *We should like all police to be affiliated to Interpol.
("police" = 'police forces')
- i. All scissors should be banned from schools.
- j. All wheats are highly nutritious.

The bracketted asterisk of (7.29e) indicated that although All mankind are God's children is an acceptable sentence, "all mankind" is a collective singular meaning 'all of mankind' and not a plural NP. Thus mankind fails this test for countableness along with lightning, English in the sense 'Englishmen' and police in the sense 'police force'. By contrast the test brands as countable car, man, Lewiston, oak, police in the sense 'policemen', scissors and wheat; and English in the sense 'English language' is half countable. The universally quantified NP in the successful examples of (7.29) are genus-denoting, very much like the generic (but see p.64). Where the quantifier all ranges over a k-form noun in an uncountable NP it too is genus-denoting provided that the head noun is not typically countable; compare

- 7.30) *All car {^{is}_{are}} expensive.
All lightning is caused by a cloud discharging electricity.
- 7.31) This jalopy is all car, man.
That stripper is all woman, drooled Dirty Dick.
She's boasting that her boyfriend is all man.

- e. (*)The mankind God created has given him headaches ever since.
- f. (*)The Nepal I used to know is so unlike the Nepal of today.
- g. The oak is a deciduous tree.
- h_i The police are to get a pay rise.
- h_{ii} The police is a good career.
- i. (*)The scissors are an instrument for cutting things.
- j. (*)The wheat is highly nutritious.

The definite generic test brands as countable car, English meaning 'Englishmen', man in the sense 'male human being' but not in the sense 'mankind', oak and police.

I have presented eight tests which distinguish countable from uncountable NP; in order of presentation they were

- i) the both-singular-and-plural test
- ii) the Onesing test
- iii) the weak denominator test
- iv) the strong denominator test
- v) the test of genus-denoting plurals with all
- vi) the test of genus-denoting singulars with all
- vii) the undetermined singular generic NP test
- viii) the definite generic NP test

Every test provided an environment for a noun instantiating each countability grade in English; that is to say that every English noun should have the same countability preference as one or another of the sample nouns used in the tests. Every English noun may be used uncountably, even if - like scissors - only when adnominal, whereas they may not all be used countably; in consequence the countability tests are only inter-

-esting for filtering out countable instances of nouns; that is, those instances of nouns which can enter countable environments, and those which cannot enter the genus-denoting uncountable environments. Perhaps we should clarify what is meant here by "noun". It is obvious from the tests that the lexical form alone is not significant, but the semantic content of the noun is; thus, for example, in the environment of a genus-denoting plural with all the noun police is acceptable only in the sense 'policemen' and not in the sense 'police force': the lexical item both is and is not acceptable. Countability grades must therefore be associated with semantic items and not lexical items. The traditional dichotomous distinction between countable and uncountable nouns was used in stating well formedness conditions on structures: we now have a much more accurate metric, the countability grade, that will be used to the same purpose. The grammar will need to contain a statement of the correlation between NP environments and the countability grades they accept of head nouns - information like that contained in Figure 7.1 below. This entails that every noun, every nominal semantic item, must be branded with a countability grade as a selectional feature. Thus, to ensure that LIGHTNING is never predicated on ONE(S) it will be assigned a countability grade of \emptyset , and there will be a well formedness condition that no nouns of grade \emptyset may be predicated on ONE(S). There is no other means to prevent such NP as *ONE LIGHTNING ONE being generated as well formed structures.

Figure 7.1 displays the nouns that are branded countable by the environment presented in each test. It was pointed out in footnote 4 (p. 227) that the first of these tests, the both-singular-and-plural test, is redundant because all the information it gives is properly contained in the information presented by the weak denominator test and

Test	countable nouns as revealed by the test	Identification of nouns
both-singular-and-plural	a, b _{ii} , d, f, g, h _{ii} , j.	a = CAR b _i = ENGLISH (BODY ONES)
Onesing	a, b _i , b _{ii} , d, e, f, g, h _i , h _{ii} , i, j.	b _{ii} = ENGLISH (LANGUAGE)
weak denominator	a, b _{ii} , d, e, f, g, h _{ii} , j.	c = LIGHTNING d = MAN
strong denominator	a, b _i 0.47 ⁵ , d, f, g, h _i 0.47 i0.47, j.	e = MANKIND f = NEPAL
genus-denoting plural with <u>all</u>	a, b _{ii} 0.5, d, f, g, h _i , i, j.	g = OAK h _i = POLICE (BODY ONES)
undetermined singular generic NP	a, b _i , f, h _i , h _{ii} , i.	h _{ii} = POLICE (FORCE) i = SCISSOR:
definite generic	a, b _i , d, g, h _i , h _{ii} .	j = WHEAT

Figure 7.1 Summary of the countability tests

the Onesing test. This is a necessary consequence of the fact that the weak denominator ONE necessarily ranges over a singular head noun and that any plural noun is founded on underlying ONES. Furthermore the Onesing test itself is redundant because any NP that may take a weak denominator is headed in deep structure by ONE, and any that may take a strong denominator is headed in deep structure by ONES; thus the set of nouns

5. These fractional evaluations of countableness result from the doubtful acceptability of the NP in which the noun is tested: the fraction is based on the value 1.0 being given to a noun in a countable environment which is fully acceptable.

branded countable by the Onesing tests constitutes the union of all the nouns branded countable by the weak and strong denominator tests. To include the two redundant tests in a calculation of relative countability grades would give distorted results by inflating the overall countableness scores of those nouns which were successful in them; and so the both-singular-and-plural test and the Onesing test will hereafter be omitted from consideration.

Figure 7.1 shows that the number of countable nouns varies between the different environments, which can consequently be ranked for choosiness in accordance with the number of nouns from different countability grades they brand countable. The most choosy environments are those which accept fewest countable nouns; the least choosy are those which accept the largest number. Then we can assign a choosiness factor to each environment expressed as the number of times more choosy it is than the least choosy environment; this is done by taking the countableness score of the least choosy environment, which we see from Figure 7.2 is 8, and dividing it by the total countableness score for each environment. The choosiness table is presented in Figure 7.2.

Environment	Countableness score	Choosiness factor
definite generic NP	6	1.333
undetermined singular generic NP	6	1.333
the scope of a strong denominator	6.41	1.248
genus-denoting singular with <u>all</u>	7	1.143
genus-denoting plural with <u>all</u>	7.5	1.067
the scope of a weak denominator	8	1

Figure 7.2 The relative choosiness of countable NP

The countability preferences of nouns could be computed by simply totting up the number of environments in which the noun is countable, and this is done in Figure 7.3. But such a computation ignores the fact that some environments are more choosy than others and that a noun which succeeds in a definite generic NP has to be 1.3' times as countable as one that succeeds in the scope of a weak denominator. To capture this, instead of counting one point for each environment in which a noun is countable irrespective of the choosiness of the environment, we count the number of points given as the choosiness factor of the particular environment. A weighted computation of this kind is given in Figure 7.4.

Noun	Countable in a total of X environments where X =	% countable
CAR	6	100
MAN	5	83
NEPAL	5	83
POLICE (BODY ONES)	4.47	75
POLICE (FORCE)	4	67
OAK	4	67
ENGLISH (BODY ONES)	3.47	58
SCISSOR	3.47	58
WHEAT	3	50
ENGLISH (LANGUAGE)	1.5	25
MANKIND	1	17
LIGHTNING	0	0

Figure 7.3 Countability preference based on the number of environments in which each noun in the sample is countable

Noun	Weighted score for the total number of environments in which the noun is countable	% countable
CAR	7.124	100
MAN	5.791	81
NEPAL	5.791	81
POLICE (BODY ONES)	5.463	77
POLICE (FORCE)	4.809	68
OAK	4.648	65
ENGLISH (BODY ONES)	4.396	62
SCISSOR	4.13	58
WHEAT	3.315	47
ENGLISH (LANGUAGE)	1.534	22
MANKIND	1	14
LIGHTNING	0	0

Figure 7.4 A weighted computation of countability preference

The first thing to remark is that both tables show MAN and NEPAL to be in the same countability grade. I have not collapsed them into one grade because they do not come through the countability tests in quite the same way: specifically, they differ in that man can head either generic or an undetermined singular generic, but Nepal can do neither. What distinguishes MAN from typical countables like CAR is its undetermined k-form use in singular generic NP; in such NP it is uniquely referring, like a proper names, and also like a proper name it cannot be modified by a rightwing restrictive clause, although an appositional clause is fine:

- 7.35) *Man[†] who has oppressed woman throughout the ages has got to learn we won't take it any more.

Man,[#] who has oppressed woman throughout the ages, has got
to learn we won't take it any more.

But I doubt whether this properly explains why man and its only compeer,
the very closely related woman, fall into the same countability grade
as proper names like Nepal.

The correlation between the tables is high ($r = .99$). The only
difference made to the rank order of nouns is that convergences between
nouns occurring in the same number of environments (Figure 7.3) are
sorted out on the weighted scale (Figure 7.4). As a satisfying outcome
of the computation, on both tables all nouns which have traditionally
been described as countable are more than 50% countable, and all those
traditionally described as uncountable are less than 50% countable.
I will take countability grades to be expressed as decimals between 0 and 1;
this is rather less arbitrary, and certainly less confusing, than numbering
them from 1 to 12, or lettering them from a to j or whatever. Thus the
class of nouns like lightning⁶ will have the countability grade 0, mankind
the grade .14, oak the grade .65, and so on.

At the grade of zero countableness are what I have, from time to
time, called "true uncountables". Examples are lightning, equipment,
laryngitis, measles, physics, ornithology, and gerunds like thinking,
knowing, running, smiling and swimming. These are nouns which never enter
countable NP in well formed structures of standard English.

The next higher grade is .14 countableness instantiated by such
nouns as mankind, admiration, heat, sincerity, thunder, and derived nom-
inals suffixed -ness e.g. darkness or redness. Such nouns only ever

6. Strictly, LIGHTNING, but in the ensuing discussion I shall for
simplicity represent semantic items by lexical items.

occur in singular countable NP, cf.

4.36) Hers is an admiration I value greatly.

*Their admirations I value greatly.

4.37) It was a terrible heat to walk around in.

*The heats of the Sahara and the Gobi are about the same.

The ordinary use of the countable of grade .14 nouns is to distinguish a particular instance of the noun's denotation, as in

4.38) A dry heat is so much more pleasant than a damp heat.

As a result of the relatively rare countable use of these nouns, countable occurrences sometimes appear to refer to instances or occasions of particular note: compare

4.39) We got up in darkness.

*We got up in a darkness.

We got up in a patchy darkness.

The nouns with a grade of .22 countableness are all language names: English, French, Welsh, Dutch, Irish, Spanish, Portuguese, etc.

At a little under 50% countable, with a grade of .47, is the set of nouns I will call hemi-countables. This includes what I have elsewhere called pseudo-uncountables (p6 above and Allan 1976) like wheat, cotton, coffee, wine, ore, soil, of which the countable use typically denotes species, types or kinds of the substance denoted by the same noun used uncountable. For example, wheat as a cited form names not a plant, but a kind of plant; not a grain, but a kind of grain; not a sheaf, but a kind of sheaf; and so on. Heading an uncountable NP as in

4.40) Wheat is highly nutritious.

NP[wheat] denotes 'mass of produce from the genus *Triticum* of the tribe

Hordeae'. Heading a countable NP as in

4.41) "The wheats were predominantly Triticum aestivum ssp.

vulgare types ..." (Finlay & Shepherd 1968, 159)

NP[the wheats] denotes not plants, grains, spikelets, or sheaves, but 'instances of Triticum' viz. 'species of wheat'. And similarly with other pseudo-uncountables, cf.

4.42) "Although the Arabian and 'robusta' coffees provide most of the world's trade in coffee, the 'excelsa' coffees have been taken to most countries in the tropics ..." (Haarer 1962, 21)

4.43) He has a cellar filled with wine. There must be a dozen different wines there.

Pseudo-uncountables have traditionally been categorised as 'uncountable' perhaps because the occasions for using or meeting with countable instances of them are often restricted to specialist contexts. Their use among cognoscenti for special purposes doubtless accounts for the peculiarity of their denotation in countable NP - what might be called the 'species factor'.

There are other nouns of the same countability grade which have always been recognised to be open to both countable and uncountable use, no doubt because of the familiarity of both usages. These are nouns whose countable form typically denotes an instance of the substance denoted by the same noun used uncountably: cake, stone, brick, hair, are examples. Compare the underlined NP in

7.44) The bearded lady has hair on her chest.

Waiter, this lady has a hair in her soup!

7.45) The rioters threw stones.

*The rioters threw stone.

(7.45) is explained by the fact that wherever possible people throw objects rather than nondiscrete substance, for the good reason that objects make better missiles; hence, although people do throw mud and snow, they usually first mould them into efficacious artificial discrete objects - balls: mudball and snowball are both typical countable nouns. Notice how the perceived characteristics of the typical reference of the noun correlate in a regular manner to its linguistic categorisation: the uncountable denotes nondiscrete phenomena, the countable discrete objects, as a rule. A stone is a discrete object with clearly described physical boundaries; but there is no corresponding perceivable characteristic for the reference of wheat, apart from each species of wheat, that is not named by some other noun, e.g. ear, spikelet or stalk. The correlation between the perceived characteristics of phenomena and the kind of linguistic categorisation made of the language items used in referring to them is not unlike that between the proverbial chicken and the egg; I will expand on it no more here because I wish to discuss it in detail later⁷.

Although there are many nouns which can loosely be identified as pseudo-uncountables, it is neither possible nor worthwhile defining such a class. The only means of determining whether a noun is pseudo-uncountable is whether it is used in countable NP to denote species, types or kinds of the phenomenon denoted by the same noun used uncountably. But other kinds of nouns share this characteristic; for instance many fish nouns have an unchanged plural when denoting a number of individuals, but take a plural morph in order to refer to a number of species; examples are salmons, trouts, carps, wrasses, mackerels, mulletts, cf. Cooper (1934),

7. In Part IV.

Copely (1952), Davis (1953), Irvine (1947), Welman (1948) and Chapter 9. In copula sentences of the form NP ¹ be NP where one NP is hyperonymous to the other, that NP is a 'species' countable, cf. the underlined NP of

- 7.46) A stone that is often used in Northern buildings is sandstone.
 7.47) A fur greatly favoured by the ladies is silver mink.
 7.48) Granite is an igneous rock.
 7.49) Cats are animals.

These are synonymous with, or may be synonymous with,

- 7.46') A kind of stone that is often used in Northern buildings
 is sandstone.
 7.47') A type of fur greatly favoured by the ladies is silver mink.
 7.48') Granite is an igneous kind of rock.
 Granite is a kind of igneous rock.
 7.49') Cats are a kind of animal(s).
 Cats are kinds of animal.

Again, general terms like metal and animal may denote kinds, types or species in contexts like

- 7.50) This metal is very rare.
 7.50') This kind of metal is very rare.
 7.51) This animal is nocturnal.
 7.51') This species of animal is nocturnal.

Thus, the fact that a countable noun denotes a species, type or kind is not sufficient to identify the noun as a pseudo-uncountable.

It will be unsatisfactory to postulate that a pseudo-uncountable

noun is defined as that class of noun whose countable use can only denote species, types or kinds but never instances of the phenomenon denoted by the same noun used uncountably; firstly because it is not always easy to determine which kind of denotation a countable NP makes. Consider the countable examples of business in (7.53-55):

- 7.52) Business is taking a hard knock from the fall of the pound.
 7.53) Insurance is in disarray as the result of spiralling inflation. The business cannot make investment gains until policies are inflation proofed.
 7.54) Businesses are going bankrupt in large numbers.
 7.55) Small businesses are going bankrupt in large numbers.

"The business" in (7.53) means 'insurance': is this a kind of instance of business? I see no way of deciding. "Businesses" in (7.54) surely denotes instances of business such as firms, companies, trading houses, and so on; yet "small businesses" in (7.55) arguably denotes a kind of business, but at the same time refers to small firms, small companies, small traders, and the like. There is no means to definitely decide which kind of denotation is evidenced here; and thus no means for testing whether or not a noun is pseudo-uncountable. Secondly, pseudo-uncountables like tea, coffee, milk, sugar, beer, and many other nouns which may denote drinks will be excluded from the class because they are used as instance countables in sentences like

- 7.56) Four beers please, steward.
 Two coffees and a tea please, Miss.
 Four sugars for Zeke and one for me.

This usage, although restricted to relatively few pseudo-uncountables, is significant because it shows that the countable denotation of a noun

is accidental: the noun can be used countably to apply to any phenomenon that is self-contained within determinable boundaries: whether this discrete phenomenon is a species as in two robusta coffees or a 'concrete' object as in two Turkish coffees, meaning 'two cups of Turkish coffee', is not so much dependent on the noun coffee but on the nature of non-linguistic phenomena. It follows that what I have described as the denotation of species, types, and kinds would traditionally have been described as connotation; it is not part of the grammar, but of pragmatics. In which case pseudo-uncountable nouns are not a grammatical class, and that explains their lack of grammatical characteristics. In consequence we can abandon any notion that examples like (7.46'-51') are close to the underlying form of their complementaries (7.46-51), such that "a stone" in (7.46) might be thought to derive from 'a kind of stone' as in (7.46').

The hemi-countables hold a place in the middle of the countableness scale and look, janus-like, in both directions. Those like wheat share the characteristics of the predominantly uncountable nouns of lower grades; such nouns typically denote nondiscrete phenomena but in countable NP denote instances of these phenomena. Nouns with grades of countableness higher than .5 are predominantly countable; that is, they typically denote discrete, self-contained, phenomena and in uncountable NP they usually denote constituent substances of such phenomena. Hemi-countables like cake and stone are neither typically countable, nor typically uncountable; they display the characteristics of neither.

The next four countability grades are bunched close together between 58% and 68% countable. The lowest grade, of .58, comprises the least countable of the predominantly countable nouns: pluralia tantum. Examples are scissors, braces/suspenders, glasses/spectacles, pants, nutcrackers,

pliers, scales, tights, tongs, and tweezers, all of which have referents perceived as two moveable leglike members pinioned to a bridge at one end or so as to cross each other; in addition there are oddballs like cattle, clothes, suds and greens meaning 'green vegetables'.

Pluralia tantum share two obvious characteristics with predominantly uncountable nouns; they do not contrast singular and plural number, and so in the number system of English seem to complement typical uncountables like lightning; cf. Figure 7.5; and the constraints on denumeration lead to the use of a classifier in quantification, cf.

7.57) *two scissors : *two equipments
 two pairs of scissors : two pieces of equipment

Singular	Plural
girl	girls
lightning	*lightnings
*scissor	scissors

Figure 7.5

Though we have seen that the denumeration of pluralia tantum is severely constrained, they may be freely quantified by the Quantifying Articles some, all and any:

7.58) Do you have some scissors I could borrow?
 All trousers reduced by 50%.
 Do you have any pliers?

Normally, denumeration is mediated through a classifier as head of a Quantifying Phrase in a classifier construction; this mode of denumeration is nearly always to be preferred to the more direct predication of the denominator on the head noun. Typical classifiers are pair for

all nouns denoting objects with two leglike members, though we also talk of a set of compasses; cattle are classified by the head; and there are no regular classifiers for clothes, suds and greens. When POLICE BODY ONES or ENGLISH BODY ONES fall within the scope of a denominator, BODY snatching is normally blocked, to the effect that the suffix -man/-men acts in place of a classifier. Some examples,

7.59) Do you have a pair of scissors I could borrow?

Two policemen were chasing Sharp Eddy down Rotten Row.

We lost forty head of cattle to rustlers last year.

Both sets of compasses were stolen.

Not in this class are holidays, stairs, guts, bowels, or socks, all of which have singulars; it is true that socks and stockings are often counted in pairs, but there is nothing odd about four socks. Heads or tails of a coin look like pluralia tantum but are not, cf.

7.60) Heads {^{is}_{are}} what I chose.

Is it a heads or a tails?

Apparently heads and tails must be considered as instances of typical countables with a peculiar usage.

At the grade of .62 are English, French, Irish, Dutch, etc. denoting nationals: all of them can be suffixed -men. These are pluralia tantum so it is not surprising that they should occupy a countability grade insignificantly different from that of other pluralia tantum. However none of Briton, Dane, Finn, Israeli, Scot, Spaniard, Swede, nor any nationality name in -ese or -an (e.g. Japanese, American) are in this grade; they are typical countables like car.

Oak instantiates the countability grade of .65 and represents all

those plants and animal nouns denoting phenomena which are the sources for substances useful to man such as fur, food, timber and perfume. Characteristically the countable noun describes a discrete object from which come constituent substances described by an isomorphic uncountable noun. I shall make a special investigation of this grade of nouns in the next Chapter.

I have nothing more to say about police (at .68 and .77), nor about man and Nepal, except to note that in addition to its countability grade, Nepal will presumably be branded as a proper name and that will prevent it from occurring in generic NP.

Typical countables have a countability grade of 1. The number of typical countables is legion and a mere handful can exemplify the class: car, beetle, cat, curtain, deed, dolly, donkey, door, herd, table, wall. Uncountable uses of such nouns are rare; certain contexts may favour them, however. For example musical instruments are typically countable except as objects of the verb play, when they are quite regularly used uncountably, cf.

7.61) Rocky Frenzy plays $\left. \begin{array}{l} \text{lute} \\ \text{organ} \\ \text{guitar} \\ \text{bass} \\ \text{piano} \end{array} \right\}$ with Noise.

Or, within rugby football, the word ball can be used uncountably, though in other contexts it seems to be a typical countable:

7.62) The trouble was our scrum were not feeding enough ball
⁸
to the backs .

8. I am indebted to Keith Brown for this example from the BBC in March 1977, and for the following example.

- 7.63) "They [Scotland] outscrummaged the Welsh, took three strides against the head, and they also poured into the rucks with an almost suicidal determination which took so much ball that they denied Wales the chance of making their win more conclusive." (Observer 20 March 1977, 24)

All countables can be used uncountably and it would seem that certain contexts favour the uncountable use. These are contexts in which the relevant noun does not denote an individual object because an individual object is of no importance. Thus in

- 7.64) Rocky Frenzy {plays
is on} guitar.

the individual instrument is of no interest; what (7.64) refers to is Rocky's function or skill. It is not unlikely in a real life situation that there would be several guitars that Rocky has played or is about to play; but they are not what is being referred to. We might compare

- 7.65) Guitar is played by Rocky Frenzy.

- 7.66) A guitar is played by Rocky Frenzy.

The guitar is played by Rocky Frenzy.

In (7.66) some particular guitar is referred to; but not in (7.64-65). Similarly in the rugby examples "ball" does not refer to 'the ball' of the game but rather to 'possession of the ball' - or something of the sort. The game is apparently seen as largely a struggle for possession and evaluated in terms of quantity of possession. This use of ball must be regarded as a rugby metaphor, which accounts for its restricted use; though presumably it could be extended to other ball games.

Any noun with a grade lower than .5 countableness is, broadly speaking, uncountable, and any with a higher grade is countable. The degree of uncountableness or of countableness naturally increases towards

the poles of the scale, and there tends to be a convergence about the middle. Thus, nouns in the bottom three grades of countableness (0, .14, .22) manifest from none to very few countable instances; but hemi-countables, which are only by a small margin more uncountable than countable, show many instances of countable use. A simple squish of these four grades is shown in Figure 7.6

.47	wheat	a wheat	wheats
.22	English	an English	?Englishes
.14	mankind	a mankind	*mankinds
0	lightning	*a lightning	*lightnings

Figure 7.6 The bottom grades of the countability squish

Typically uncountables denote nondiscrete phenomena and their countable occurrences, if any, denote instances or kinds of the nondiscrete phenomena. This characteristic is stronger in hemi-countables like wheat (pseudo-uncountables) than it is in certain other hemi-countables like cake or stone. Although it is certainly possible to view a stone as an instance of the substance stone, it is equally possible to view it primarily as an individual object which is incidentally an instance of stone. This immanent individuality of stones, cakes and hairs, all of which it may be noted are discrete physical objects, is not characteristic of wheats, coffees, bamboos and the like. Thus it seems that hemi-countables have feet (as it were) in both the uncountable and the countable camps; though they are rather more uncountable than countable.

At the countable end of the scale nouns with grade 1 countableness are rarely found in uncountable NP. Further down the scale at grade .65, for instance, uncountable uses of the nouns are far more frequent.

The uncountable use of a noun of this grade will usually denote a constituent substance from the object denoted by the isomorphic countable, cf.

7.67) Because I like lambs I don't like lamb.

Here "lamb" is understood as 'meat from lambs'; but "lambs" cannot be understood as *'instances of lamb'; though plates of lamb or lamb chops might be. We might contrast the relationship between countable and uncountable lamb with that between countable and uncountable cake - a hemi-countable.

7.68) Although I like cake, I don't like these cakes.

Here "cake" is certainly not *'food from cakes' or anything like it. On the contrary, "these cakes" may be understood as 'these instances of cake'.

It has been my purpose in this chapter to show that nouns are not simply countable or uncountable; this binary opposition applies only to NP. Yet nouns do have countability preferences in so far as some more often occur in countable NP, others in uncountable NP, and yet others seem to occur almost as frequently in both. My intention has been to show that these preferences can be computed in a nonarbitrary fashion by determining which countable NP environments a noun can enter. Some environments accept fewer grades of nouns than others, and I have weighted them as proportionately more choosy because of it. The result matches my intuitions about the countability grades of nouns; but the method of computation needs to be exposed to more data before I can claim to have done more than taken a step towards the nonarbitrary calculation of the grades of countability preference of English nouns.

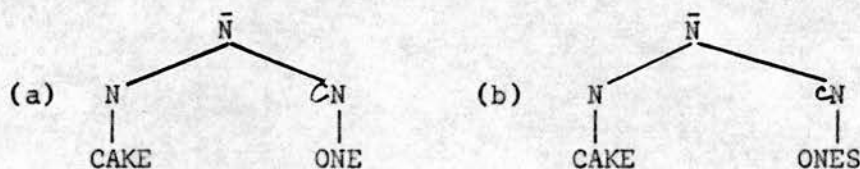
SUMMARY OF PART III

In Part III I have been discussing countability and the head of NP. The discussion opened in Chapter 5 with a look at the surface indicators of singularity and plurality in noun morphology. It continued by showing that while singular and plural constituents within the same simple NP are contradictory, it is acceptable under certain conditions for the internal number of NP to differ from the (grammatical) number of its external concords (viz. a coreferential NP or a predicative verb). Where a singular collective NP, or a plural NP containing a numeral, have singular NP-external concord, the collection as a whole, or the quantity as a unity, is denoted; I have referred to this as 'intensional reference'. In the alternative case, a singular NP has plural NP-external concord, and in consequence denotes every member of the collection, or the component parts of an individual phenomenon, depending on the semantics of the NP: I have called this 'extensional reference'. The categories of reference made by a pair of coreferential NP may differ provided the two NP are cousins in either deep or surface structure. (NP cousins are the daughters of different Ss.)

Countability is a characteristic not of nouns, but of NP; and so it is nonsense to say that the noun cake is countable or uncountable; only that it may (on the surface) head either a countable or an uncountable NP. And, of course, NP internal number is governed by the NP head. But I postulate in Chapter 5 that the deep structure head of all countable NP is ONE(S), and that the absence of this semantic item defines an uncountable NP. Thus cake, for instance, is never countable per se, but only when its underlying semantic predicates ONE(S); and it is never uncountable per se, but only when it is the deep structure head of NP.

The supporting arguments for my analysis of countability in NP run along the following lines. ONE(S) surfaces (now and then) as one(s), and one(s) is invariably head of a countable NP. The only way to account for the origin of "ones" in the interrogative clause of You say you've broken some of my Rosenthal plates; which ones [of my Rosenthal plates]? is to assume it has been copied from an identical constituent beneath the surface of the preceding statement. The traditional TG view that one(s) is introduced by Pronominalisation as a substitute for the NP head noun collapses in this, as in many other examples, because there is nothing for which it can be substituted. Here, and elsewhere, one(s) will have to be directly generated even if other instances of the word are not. Apart from inadequacies such as the difficulty in defining the scope of one(s) Pronominalisation, it is theoretically inconsistent to propose that the identical form should be directly generated and introduced by transformation; and therefore it is proposed that one(s) is always directly generated. In order to properly satisfy identity conditions, ONE(S), the semantic representation of one(s), must occur as the head element in the deep structure of all countable NP. ONE(S) therefore governs NP-internal number concord.

In the typical countable NP, ONE(S) is predicated by a noun such as CAKE, cf.



The configuration in (a) lexicalises to cake (countable); that in (b) to cakes. Uncountable cake is lexicalised on N[CAKE] where this is the NP head. One(s) surfaces either because ONE(S) is not predicated by a noun in deep structure, or because its noun sister is deleted by an

identity deletion transformation called Onesing. This erases the constituents of NP_x under conditions of full or partial identity with NP_y (in the latter case the noun predicate of ONE(S) must be one of the identical constituents), unless NP_x bears all primacy relations to NP_y ;¹ Onesing deletes identical constituents outwards from the head until a new constituent is reached; on the leftwing, constituents up to but excluding any determiner; and on the rightwing, S nodes, but not daughters or other descendents of S nodes. The determiner nodes remain untouched perhaps because definites and quantifiers ensure that reference will be as precisely defined as possible in the reduced circumstances.

Not all reduced countable NP contain one(s) in their surface structure. Those that do not are headless, and are accounted for by a Beheading rule which deletes ONE(S) from NP when it has no left sister noun predicating it. Beheading is constrained by the suitability of ONE(S)' left sister to become the surface head of NP.

Finally in Chapter 5, we considered the semantic structure and derivation of human denoting NP like someone, the police, and the rich, concluding that their semantic structure includes \bar{N} [BODY ONE(S)], from which BODY Snatching deletes "BODY" (and Beheading deletes "ONES"). BODY Snatching is a rule conditioned by the content of the Article node, and the form of ONE(S), in the configuration containing BODY.

Chapter 5 dealt with the grammar of countableness, which was shown to be indicated in deep structure by the presence of ONE(S) as the NP head. Apparent exceptions to this analysis were shown to be created by

1. Even then Onesing can apply and the output be rendered acceptable by the Exceptional Intonation Rule.

the two deletion transformations Beheading and BODY Snatching.

There is a set of classifiers which, on the surface, have optional unchanged plurals in some dialects of English; and Chapter 6 investigated the reason for this. There are many languages where the redundant plural marking on nouns in the scope of plural denumerators is omitted; and it seems this was the practice with some nouns in earlier forms of English. Plural marking has become the norm for all English semantic plurals irrespective of their position, with the exception of certain Classifier Nouns in the scope of a denumerator. Classifier Nouns are those nouns indirectly defined by this very characteristic; because, it was argued, they are themselves the deep structure heads of countable NP, and not predications on ONE(S), just on those occasions when they surface as k-form plurals. Thus ONE(S) is not the only head of countable NP.

It is then argued that ONE(S) is a Classifier Noun in the paradigm of number set classifiers - such as DOZEN(S), HUNDRED(S), etc. - with the function of unit counter, and comparable with the Burmese classifier khù. The most serious objection to ONE(S) as a classifier is that its surface indication contravenes a universal well formedness condition on the order of constituents in the classifier constructions of numeral classifier languages - although other English classifiers do not. However, constructions involving ONE(S) have a similar constituent order to that of classifier constructions in other kinds of classifier languages, and so cannot be dismissed as 'unnatural'. And on balance the evidence in support of analysing ONE(S) as a classifier outweighs the counter-evidence.

Thus, the argument in Chapter 5 that ONE(S) heads countable NP in

English takes on a very much less esoteric aspect. With the discovery that ONE(S) is a classifier, such an analysis might be expected to accord with the deep structure description of denumerable NP in many languages, either related or quite unrelated to English.

NP are dichotomously countable or uncountable, and having analysed the grammar of NP countability in Chapters 5 and 6, Chapter 7 considered the countability preferences of nouns. In Part I it was remarked that some nouns nearly always occur in countable NP, others in uncountable NP, and yet others almost as frequently in both. A definitive set of four countable and two uncountable NP environments was established through which nouns were filtered to reveal twelve grades of countableness among English nouns. The relative countableness of each grade can be computed simply by adding up the number of environments in which a noun is countable; but some environments were more choosy than others in accepting fewer grades of nouns, and success in a choosy environment was weighted more heavily than success in a less choosy environment.

In Part III I have described the surface forms of singularity and plurality in English noun phrases, and the deep structure from which these forms derive. In Part IV I turn from the grammar of singularity and plurality to consider the pragmatics of the forms we have been discussing.

PART IV

PRAGMATIC CONSIDERATIONS IN THE GRAMMAR
OF SINGULARITY AND PLURALITY

INTRODUCTION

Pragmatics is the study of the relationship between linguistic form and the perceived¹ characteristics of the phenomenon which the speaker uses that form to refer to². And so, in this part of the thesis I shall discuss some of the correspondences between the perceived characteristics of phenomena and the linguistic representations of them; concentrating - though not exclusively - on the pragmatics of singularity and plurality. We have already seen something of this during the discussion of the categories of reference in Chapter 5, where it was pointed out that a set can be perceived either intensionally (as a whole) or extensionally (as a number of members) with differing consequences for NP-external number concord. Implicit in this account is an assumption that the perceived properties of phenomena can determine the linguistic categories and classes manifest in the language expressions that refer to these phenomena; it is an assumption I shall verify in Chapters 9 and 10. The converse of this assumption is that linguistic form indicates the characteristics to be perceived in a phenomenon: just what this may involve is considered in Chapter 8.

There have already been many references to 'perceived characteristics of phenomena' and it will clarify the subsequent exposition in Part IV to briefly discourse on what is understood by this expression. Perception³

1. I mean perceived under certain circumstances, and not perceivable under some circumstance.
2. The triadic relationship which Peirce (1934) identified as holding between 'sign', 'object', and 'interpretant' is given a rather different emphasis here from that found in Morris (1971), Montague (1972), or Stalnaker (1972).
3. see next page.

is a mental act or reflex using knowledge as a filtering device to categorise cues from objects, states, events, and acts in the external world; cues which have been mediated through the senses of sight, touch, hearing, taste, and smell. In addition there are proprioceptions such as the sense of balance, the sense of danger, and bodily sensations like pain. Data supplied to the senses by a phenomenon are not necessarily given the same categorisation on different occasions or in different contexts; for example, a piece of ribbon beside a piece of string is saliently broad and flat, but beside a handkerchief it is long and thin. Conversely, the same categorisation can be made for different sets of data; for example a sprig of flowers and a kind of perfume can both be categorised as 'jasmine'. It is this independence of phenomena from the perception of them, and yet their inaccessibility except through perception, that has troubled philosophers trying to determine the true nature of phenomena - certainly since the time of Descartes and Locke, and perhaps since the time of the Ancients, cf. Price (1932, 19). In pragmatics we are not concerned with this problem, but only with people's perceptions of phenomena and the consequences for the linguistic labelling of them.

There are three significant aspects of categorising sense data. Perhaps the most important is the recognition of recurrence or pattern⁴ in

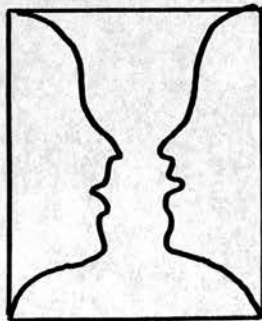
3. The views on perception expressed here were formed after reading the following: Adcock (1964); Armstrong (1962); Ayer (1940, 1956); Austin (1962); Bartley (1969); Beardslee & Wertheimer (1958); Berry & Dasen (1974); Brain (1959); Brown & Lenneberg (1954, 1959); Bruner (1958); Bruner, Goodnow & Austin (1956); Bruner & Minturn (1966); Bruner & Postman (1949); Clark (1975); Dember (1960); Dretske (1969); Duncker (1939); Gibson (1969); Gregory (1966); Hirst (1959, 1965); Holmes (1963, 1964); Hudson (1960, 1962); Koffka (1935); Lenneberg (1953); Lloyd (1972); Lobb (1965); Locke (1689); Price (1932); Quine (1964); Segall, Campbell & Herskovits (1966); Shaw (1969); Stack (1972); Vernon (1955, 1966, 1971); Vesey (1955-56); Wertheimer (1958).
4. The patterns may be lineal, configurational, aural, olfactory, functional, temporal, etc.

the sense data, giving them some structural organisation. A very simple exemplification of this is the naming of astral constellations on a visual pattern. Presumably, when very young children overgeneralise the word dog to other four-legged animals, it is because they have recognised a distinctive configurational pattern; and although their categorisation is not quite conventional, it is obviously being made on the basis of structural organisation of sense data. The recognition of some structural organisation automatically sets up expectancies as to the nature of the phenomenon being perceived; these constitute the second significant aspect of categorising sense data. The expectancies are based on past experience⁵ and may override sense data in the process of perception (cf. Duncker 1939). During the course of Bruner & Postman's (1949) experiment with the recognition of incongruous playing cards (red spades, black hearts, etc.), 96% of the subjects made "a 'perceptual denial' of the incongruous elements in the stimulus pattern. Faced with a red six of spades, for example, a subject may report with considerable assurance, 'the six of spades' or 'the six of hearts' depending on whether he is color or form bound. ... In both instances the perceptual resultant conforms with past expectations about the 'normal' nature of playing cards." (op. cit. 212) This kind of misperception is partly a result of the 'couldn't believe my eyes' syndrome and it is usually solved by a longer look (cf. op. cit. and Bruner 1958, 719). Efficiency in perception is the reason for people jumping to conclusions on the basis of a partial recognition; most of the time, of course, their conclusions are correct.

5. How do neonates perceive, then? Gibson's (1969) exhaustive study of perception during ontogenetic development leaves no doubt that the human infant can perceive certain distinctive phenomena shortly after birth, and categorise them well enough on first acquaintance to recognise them another time. Human neonates must therefore be born with innate knowledge; probably of a rather primitive kind, and comparable with that found in varying measure in neonates of all species.

The third aspect of categorising sense data is the availability of linguistic coding (backed by the knowledge of how to use it appropriately). The average Briton faced with a set of symbols '2 3 6 8' can identify it, describe it in conventional terms, and remember it without difficulty; but faced with '٢٣٦٨' he is in difficulty, because there are no familiar names for the sense data. This is not to say the average Briton cannot perceive the Arabic numerals, but that his perception is qualitatively different from that of someone familiar with the sense data from these symbols, and with their conventional interpretation. It is generally the case that where the sense data are familiar there is a handy linguistic representation for them; and the more familiar the phenomenon, the shorter and more convenient the linguistic representation is, cf. Brown & Lenneberg (1959). So that, although a linguistic label is not the sine qua non of categorisation, there can be no doubt of its importance in the perceptual process. All three aspects of categorising sense data rely on a constancy in the relationship between phenomena and the properties perceived of them.

We find in Chapter 10 that phenomena - or more precisely, the properties of phenomena - denoted by classifiers must be perceivable by more than one of the senses alone. This is because the evidence of only one sense is unreliable, as the Ames distorted room⁶ so superbly proves; and, much more simply, does the ambiguous diagram below, which may be seen as either two faces opposed in profile or as a candle-stick. This ambiguity



6. Cf. Gregory (1966), or Vernon (1971).

is the result of our only having visual data with which to perceive the phenomenon; and tactile data will tell us only that the picture is on paper. Immediately one perceives a problem with two dimensional representation: visual data is not necessarily adequate to decide the true configuration of the phenomenon represented; it is only adequate where the observer's knowledge of the conventions of perspective can be called on. This explains the difficulties experienced by exotic cultural groups faced with the (to them) unknown pictorial conventions familiar to us, cf. Holmes (1963, 1964, 59ff.), Hudson (1960, 1962), Shaw (1969). In the figure above the conventions of perspective are entirely missing and the ambiguity of the picture cannot be resolved. If instead of a picture we had to deal with a similarly ambiguous three dimensional model the ambiguity would disappear at a touch. Just after birth the neonate's accretion of knowledge through perception is largely restricted to the processing of visual data; but as the child gets older the exploratory handling of solid figures increases in the search for their intrinsic defining properties (cf. Gibson 1969, 361). Under ordinary circumstances tactile verification of visual cues about configuration is only necessary in comparatively few instances. For example, the visual data from the spherical configuration of a ball may be confirmed on a small number of occasions by haptic exploration, and thereafter the sight of a ball can, if necessary, be correlated with the expectation of a tactile sensation of sphericity. And vice versa. Thus we can fairly safely predict the intrinsic properties of a phenomenon that has only been seen by induction from past experience of the same or similar phenomena. With unfamiliar objects, there is a proven tendency for the contours to be visually scanned in emulation of tactile exploration (cf. Gibson 1969, 55). The knowledge stimulated by the data from a single sense (commonly sight) is typically transformed, though

not consciously, into projections about the nature, function and behaviour of the perceived phenomenon in relation to its environment, the situation and context; this is such a normal experience that when it is thwarted unexpectedly we complain of being deluded. The general expectations aroused by uni-sensory cues are hierarchial and depend on an initial projection of the intrinsic defining properties of the phenomenon — or certain aspects of the phenomenon — being perceived. These projections constitute the process earlier described as the filtering of sense data through knowledge, and they lead to the perception of the characteristics of the phenomenon. On most occasions of perception, and perhaps all⁷, only some of the characteristics of the phenomenon are in fact perceived; certainly for the cases considered in the ensuing discussion it is clear that we have to deal with certain perceived characteristics of phenomena and not all perceivable ones.

7. Whether a phenomenon can be perceived in toto as the sum of all perceivable characteristics is an ontological problem that is of no concern here.

Chapter 8

INTERPRETING THE UNCOUNTABLE NP
HEADED BY NOUNS LIKE LAMB AND OAK

Compare the animal nouns of the following sentences:

8.1) Issa likes { lambs
chickens.
rabbits.
goats.

8.2) Jacob likes { lamb.
chicken.
rabbit
goat.

In (8.1) the countable animal noun denotes an animal, and in (8.2) the uncountable use of the same noun denotes meat from the animal. This is such a regular characteristic of English that it operates with the most unlikely nouns; so that all the uncountable animal nouns in the following sentences seem to denote meat:

- 8.3) Rhino is tough on the teeth.
 Rufus regards hyena as the tops.
 Chamberlain enjoys salted chameleon.
 Humperdinck loves spider.

This interpretation is difficult to explain because the uncountable animal noun does not always denote meat, compare (8.5) which does not, with (8.4) which does:

- 8.4) Harry prefers lamb to goat.
 8.5) Jacqueline prefers leopard to fox.

Apparently the uncountable animal nouns in (8.5), leopard and fox, denote

fur or skins: pelts and not meat. This difference must be something to do with the animal name: perhaps uncountable lamb necessarily denotes meat, but uncountable leopard denotes 'leopard skin'. That this is incorrect is shown by

8.6) I prefer the lining to be made of lamb, because it's softer.

8.7) All we had to eat was leopard.

The context of (8.6) requires that "lamb" must denote 'lambskin', and that of (8.7) that "leopard" denotes 'leopard meat'. But if these interpretations are based on contextual information, how are the interpretations of (8.4-5) to be accounted for?

I think the answer must lie in what I will call a customary reference rule, which is not a rule of grammar, but a rule of pragmatics. Its effect will be that in the absence of any contextual or other clues to the interpretation of a linguistic item, some customary interpretation will be assigned to it. In the present instances, uncountable lamb would have the customary interpretation of meat, uncountable leopard will have the customary interpretation of a pelt. But this cannot explain our interpretation of the uncountable animal nouns in (8.3), none of which customarily refer to anything; and if they seem to denote meat, it must be that we are making the best possible interpretation of them. I will discuss this further, together with other pragmatic interpretation rules, such as will account for our readings of (8.6-7), later on.

A COMPARISON OF THE MEANING OF COUNTABLE AND UNCOUNTABLE NP

HEADED BY ANIMAL AND PLANT NOUNS

There is a parallelism between edible plant nouns and edible animal nouns: thus, (8.8) means the same as (8.8'), and (8.9) the same as (8.9'):

- 8.8) I like { rabbit.
chicken.
lamb.
- 8.8') I like to eat { rabbit.
chicken.
lamb.
- 8.9) I like { apple.
melon.
potato.
- 8.9') I like to eat { apple.
melon.
potato.

But the parallelism between (8.8-8') and (8.9-9'), where the object NP are uncountable, is not matched by the corresponding countable NP; cf.

- 8.10) I like { rabbits.
chickens.
lambs.
- 8.11) I like { apples.
melons.
potatoes.

(8.10), containing the animal nouns, will not normally have the meaning

- 8.10') !I like to eat { rabbits.
chickens.
lambs.

unless the subject is some nonhuman creature in a fairy story; just why this should be permissible I shall explain in a moment. (8.11), containing fruit and vegetable nouns, will nearly always have the meaning

- 8.11') I like to eat { apples.
melons.
potatoes.

It would be precipitate to conclude that the countable animal noun denotes the animal while the corresponding uncountable denotes - inter alia - food, because exactly parallel with (8.11-11') are

- 8.12) I like { hairy mary grubs.
kippers.
oysters.
pilchards.
shrimps.
snails.

8.12') I like to eat { hairy mary grubs.
 kippers.
 oysters
 pilchards.
 shrimps.
 snails.

The difference between (8.8-8') and (8.12-12') lies ultimately in different eating habits with respect to the various kinds of animals referred to. It is usual for one or more of the referents of the animal nouns in (8.12-12') to constitute a meal for one person; so that, in this context, each animal is significant as an entity, which is indicated by locating the referring noun in a countable NP. By contrast, it is normal for one person to enjoy a meal of meat from an animal referred to in (8.8-8'), and not the whole animal; thus, the animal is not, in this situation, significant as an individual entity - and this is indicated by locating the referring noun in an uncountable NP. The differences between uncountable and countable fruit and vegetable nouns in (8.9-9') and (8.11-11') are similar to those of animal nouns, but not exactly comparable because the fruit and vegetables can be eaten either as individual objects, or as a kind of food derived from these objects. For example, Would you like some potatoes? would typically be asked in referring to boiled, or roast, or baked potatoes; whereas Would you like some potato? would typically be used of mashed potatoes, and it could - rather imaginatively - be glossed 'Would you like some food from the potato?'

Abandoning the edible, there are comparable usages of other plant nouns. For example, reference to an oak tree or a jasmine bush would typically be made through a countable NP; but reference to wood from the oak, or perfume from the jasmine, would characteristically be made through uncountable NP. And similarly, the nonedible products of animals are often attributed to the animal from which they derive in an uncountable

NP; for example those underlined in

- 8.13) These bones are pig.
 There's a strong smell of mouse in the cupboard.
 The garage stinks of cat.
 That skin is rabbit.
 That head we mounted was kudu.

It is not just the produce from plants and animals that is referred to through uncountable NP, but under certain circumstances the substance of collectivisable organisms; these comprise most trees and plants, fishes and game animals¹. cf.

- 8.14) That tree is { oak.
 plum.
 hawthorn.
 jacaranda.
 That fish is { salmon
 perch, not bream.
 wahoo.
 The quarry was { elephant.
 buffalo.
 woodcock.

But creatures that do not qualify as game are not collectivisable, and their substance cannot be referred to in sentences structurally similar to (8.14); thus

- 8.15) *That insect is ant.
 *That bird is budgerigar.
 *The quarry was rat.

It is necessary that there be a countable subject NP in (8.14) denoting the entity whose substance is predicated of it via the uncountable complement NP; sentences like (8.16) are unacceptable in the intended sense:

- 8.16) (*)Look, there's oak in the front drive.

1. Cf. Chapter 9, which is an exposition of collectivising.
 Also Allan (1976)

≠ Look, there's an oak in the front drive.

(*)What I'd most like to see is trout.

≠ What I'd most like to see is a trout.

(*)Where's buffalo?

≠ Where's a buffalo?

Since generic NP do not refer to individual entities, we may find one of these nouns for collectivisable organisms heading an uncountable generic as, for example, in (8.17):

8.17) Oak is deciduous.

Apple is the fruit of many cultivated varieties of Malus pumilia (Rosaceae)².

Potato is native to mountainous parts of tropical America.

Cocoa is a small tropical tree.

Salmon is closely related to trout.

Marlin is the fish to play.

Buffalo is the animal to shoot.

Leopard is a difficult animal to track.

I suggest that the reason these collectivisable nouns should have this characteristic is that, where they head uncountable NP (in the contexts exemplified), their substance is regarded as more significant than the individuality of the organisms: a hypothesis that will be considered more closely in the next chapter. For it is the substance of these organisms that is referred to by the uncountable NP, not the individual entities, because the latter can only be referred to through countable NP.

2. Cf. Brouk (1975).

THE IMPOSSIBILITY OF SEMANTICALLY REPRESENTING THE VARIOUS
INTERPRETATIONS OF ORGANISM NOUNS THAT HEAD UNCOUNTABLE NP

We have seen that several different kinds of produce can be referred to by uncountable NP headed (at least on the surface) by the same organism noun. An animal noun, for example, may refer to meat, skin, smell, or bones of the animal; and the question arises whether such differences in reference are indicated in deep structure by 'understood' semantic items. It has been a strong tradition in transformational grammar that 'understood' elements such as the vocative subject of imperatives, the interpretation of do so, the NP a pronoun proes, and so on, are spelled out in underlying structure; were this not the case, there would be no cause to postulate redundancy reduction rules. Where an uncountable animal noun is given a meat interpretation, therefore, it would lie within the tradition to propose that it actually includes the semantic item MEAT in its underlying structure. Presumably the underlying form of the meat expression follows the pattern of the surface form in expressions like whale meat, seal meat, or polar bear meat; I would therefore expect it to be

8.18) \bar{N} [animal noun MEAT]

Thus, "lamb" in (8.19) will derive from \bar{N} [LAMB MEAT]:

8.19) We had lamb for dinner yesterday.

Presumably, then, where lamb refers to lamb skin, as in (8.6),

8.6) I prefer the lining to be made of lamb, because its's softer.

repeated here for convenience, it has the semantic item SKIN in its underlying form; thus in contrast with (8.18) is

8.20) \bar{N} [animal noun SKIN]

The problem with such underlying structures is getting them through to a correct surface realisation. Take for example some meat expressions.

Under nearly all circumstances NP[LAMB MEAT] would surface as NP[lamb]; the only occasions under which it would become NP[lamb meat] would be where the meat is contrasted with some other aspect of lamb. Consider

- 8.21) Lamb meat will soon cost as much as lamb skin.
- 8.22) Much as I like to see lambs frisking about, I am even more fond of lamb meat.
- 8.23) These people believe that lamb meat contains an elixir of youth.

Only the first of these, (8.21), is at all convincing; although I believe (8.22-23) to be grammatical, they sound peculiar to me. These different evaluations of (8.21-23) may arise because the contrast between "lamb meat" and "lamb skin" is overt in (8.21), while the contrast in (8.22) between "lamb meat" and lambs frisking about is more subtle; and in (8.23) there is no direct contrast made, but one is implied by the very use of the expression lamb meat. Clearly, then, the surfacing of lamb meat will be governed by conditions of contrast between NP[LAMB MEAT] and its context: a contextual condition, therefore. The grammar must contain context dependent rules to effect Pronominalisation, Swooping, identity deletion and the like; but all such rules require only the recognition of identity between items within a given context. There are no familiar rules for coping with the present instance, where a semantic item, MEAT, surfaces only when contrasted with what I can only imprecisely describe as 'some other aspect of the animal'. This is a very suspect condition.

The condition is no less suspect for applying only to uncountable

animal nouns that customarily denote meat. Compare

- 8.24) Few English butchers stock lamb.
 8.25) Few English butchers stock whale.
 8.26) *Few English butchers stock lamb meat.
 8.27) Few English butchers stock whale meat.

There are no special conditions to prevent whale meat from surfacing, even where it is entirely redundant as in (8.27). However, there appears to be some necessity for it to surface in any kind of ambiguous situation; a necessity irrelevant to lamb. Compare

- 8.28) Lamb gets ever more expensive.
 8.29) ?Whale gets ever more expensive.

The customary reference rule allows (8.28) to get by, but there being no customary reference for whale, (8.29) does not, or not quite. Normally (8.30) would be preferred:

- 8.30) Whale meat gets ever more expensive.

Thus, surfacing rules for NP[WHALE MEAT] will have to be rather different from those for NP[LAMB MEAT]. And having noted these differences we might bring into consideration another problem: the derivation of words like beef, mutton, or venison. Whatever processes are involved in deriving whale or lamb from WHALE MEAT or LAMB MEAT, they are not the same as those which will produce beef from COW MEAT or BULL MEAT. Of course an argument can be put forward that beef is by origin an animal noun only preserved³ in \bar{N} [BEEF MEAT], but it would be difficult to maintain partly because of the apparent tautology (which a proponent would

3. On ranches in North America (and for all I know, elsewhere too) a beef is used to refer to a bovine animal; but this is very probably back-formation from the meat-denoting noun; cf. Michener (1975).

of course dispute) and significantly because there are no conditions under which NP[beef meat] can regularly occur⁴. On the other hand cow meat and bull meat will surface under conditions of contrast, as in

8.31) I wonder if bull meat is tougher than cow meat?

This proves that there are deep NP of the form NP[COW MEAT] and that they do not suffer obligatory lexicalisation to NP[beef], although given the present hypothesis, either COW MEAT or BULL MEAT must be the source for beef.

I conclude that given deep structures in the form of (8.18), viz.

8.18) \bar{N} [animal noun MEAT]

there is a variety of conditions on their surfacing, which seem to depend entirely on the particular animal noun used. Where the animal pelt is denoted I have suggested that the NP includes the semantic item SKIN or FUR or something similarly appropriate. The lexical reflex of this item can always surface, cf.

8.32) Jacqueline prefers leopard skin to fox fur.

Mink skin gets ever more expensive.

Musquash fur is softer than beaver.

The taxidermist thinks colobus skin is overpriced.

Thus the constraints on its surfacing are similar to those governing the surfacing of meat in whale meat. Nevertheless there are differences depending on the animal of origin: mink and musquash are readily isolable

4. In an early edition of the (London) Sunday Times 13 March 1977, 58 in an article on E.E.C. agricultural product mountains called 'Next: a sugar avalanche', the phrase "beef meat" occurs, split between two lines. However, I have little doubt of its being an error.

when denoting skins because that is their customary reference; conversely, nouns like lamb which customarily refer to meat can only be isolated when denoting skins if this denotation is clearly indicated in the context. We cannot escape from the influence of context and customary reference when considering the surfacing processes of these uncountable animal nouns - given the present hypothesis concerning their underlying form.

The principle that underlying structure should be recoverable from surface structure has been as much honoured in the breach as in the observance; which is a pity, because its value is to guard against deep structures that reveal more about the imagination and ingenuity of their inventor than about the structure of language. We might appeal to this principle against the present hypothesis when considering the deep representation of "lamb" in

8.33) We use a lot of lamb.

There is no way I can see of predicting the deep structure of "lamb" here, because as it stands the sentence is ambiguous. Suppose, however, that it were uttered by a restaurant chef,

8.34) UC_c | We use a lot of lamb. |⁵

This utterance would not be ambiguous; "lamb" would refer to lamb meat, and so its underlying form would be LAMB MEAT. By contrast, if a furrier were to utter

8.35) UC_f | We use a lot of lamb. |

Then we would happily predict that "lamb" has the underlying form LAMB SKIN. But, as I have said, neither of these readings can be assigned to (8.33), though perhaps both may be. And here we are in danger of

5. This formula symbolises a referring utterance, cf. Appendix A, p.A-1

opening Pandora's box, because if we allow the chef's interpretation, and the furrier's interpretation, why not also that of the bone merchant, and the sound recordist for the Archers? The result would be to reference index the underlying form of NP[lamb] with a semantic item so that its deep structure instantiates the generalised structure

8.36) NP[N[animal name] N[reference index] NP]

(8.18) and (8.20) are subtypes of this. Despite its name, I believe that a reference index could legitimately be included in a grammar that purports to be an abstract entity, e.g. a description of Saussure's 'langue' or Chomsky's 'competence'; it is, after all, no more than a noun that directs attention to the reference - which is the normal function of a noun. The significant fault with this hypothesis is that where the reference index fails to surface, as in (8.33), its semantic form cannot be recovered from the remaining structure.

I conclude, therefore, that deep structure NP cannot be reference indexed in the way proposed at the beginning of this section, and that NP like "lamb" in (8.33) derive not from NP[LAMB MEAT] or NP[LAMB SKIN], but from simply NP[LAMB]. That being the case, there appears to be a close correlation between deep and surface forms such that NP[LAMB] surfaces as NP[lamb], and NP[LAMB MEAT] surfaces as NP[lamb meat].

PRAGMATIC INTERPRETATION RULES

The underlined NP in (8.37-40) are all interpreted as referring to meat;

- 8.37) Harry eats lamb all the time, but Ernestine prefers goat.
 8.38) May's favourite dish is leopard.
 8.39) A plate of pangolin has a lovely smell.

8.40) The butcher gave me a nice piece of whale.

The meat interpretation given the underlined NP is induced by certain contextual constituents acting as interpreters for the uncountable NP.

In (8.37) the interpreter is "eat"; in (8.38) it is "(May's favourite) dish"; in (8.39) it is "(A) plate"; and in (8.40), "(The) butcher".

It will be noticed that in each case the interpreter is a clause mate to the uncountable animal NP, and either a sentence predicate or a noun phrase. So we might postulate a pragmatic interpretation rule,

PIR 8.1:

An uncountable animal NP will refer to the meat of the animal denoted by that NP when its clause mate is an NP or a sentence predicate referring to the preparation, presentation, or consumption of food.

of a
This is only one/set of pragmatic interpretation rules for uncountable animal NP; another will be needed to account, for example, for the skin interpretation of the NP underlined in sentences (8.41-45).

8.41) Jacqueline was wearing mink.

8.42) This coat is fox.

8.43) This is made of buffalo.

8.44) The settee is elephant.

8.45) The tannery has loads of impala right now.

The interpreters in these sentences are respectively (8.41) "(was) wearing"; (8.42) "(This) coat"; (8.43) "(is) made"; (8.44) "(The) settee"; (8.45) "(The) tannery". And once again the interpreter is in every case the sentence predicate or an NP which is clause mate to the uncountable animal NP. So I postulate pragmatic interpretation rule PIR 8.2:

An uncountable animal NP will refer to the skin (hide, pelt, fur) of the animal denoted by that NP when its clause mate is an NP or sentence predicate referring to apparel or accessories to apparel, the wearing of apparel, furniture, the creation of an artifact, or any leather-oriented object, place or process.

Such pragmatic interpretation rules define the correlation between grammar (linguistic expression) and perceived phenomena (reference). For instance, the significance of the clause mate relation in assigning the correct referential interpretation to the uncountable animal NP is demonstrated in the following:

8.46) Do you prefer to eat leopard₁ or to wear leopard₂?

More acceptable versions of (8.46) are

8.47) Do you prefer to eat leopard or to wear it?

8.48) Do you prefer to eat or to wear leopard?

It is impossible to have two different animal nouns in place of "leopard₁" and "leopard₂", in (8.46) because of general conditions on preference propositions, cf.

8.49) *Do you prefer to eat rabbit or to wear leopard?

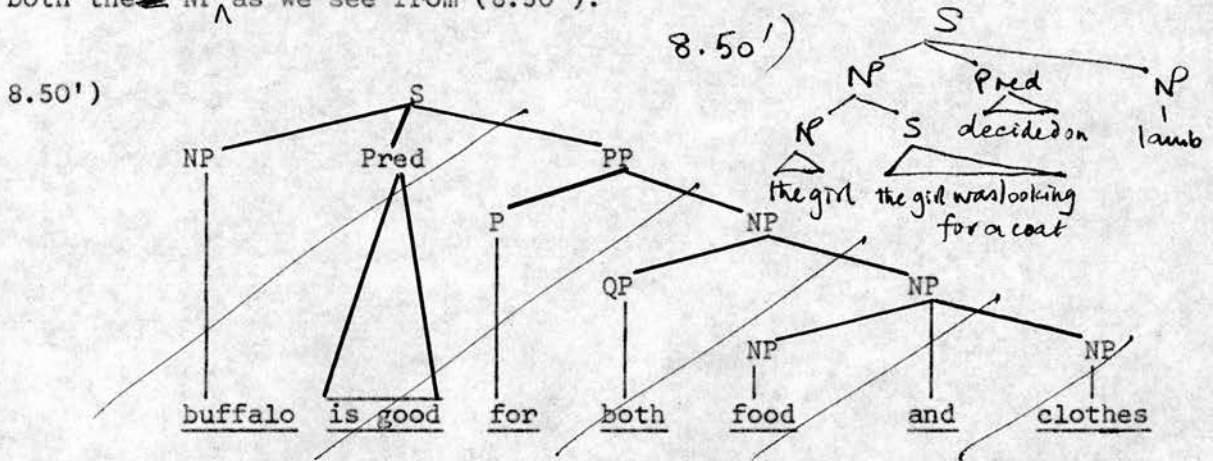
In (8.46) "leopard₁" and "leopard₂" fulfil conditions for sloppy identity; which is to say they must have the same semantic structure; something shown in the previous section to be necessarily the case. But their interpretations differ: in (8.46) "leopard₁" is clause mate to "eat" and so interpreted according to PIR 8.1 as a meat noun; on the other hand "leopard₂" is clause mate to "wear", and so interpreted according to PIR 8.2 as making reference to the skin of the animal. Because of the clause mate condition there is no possibility of "leopard₁" being interpreted in the same way as "leopard₂".

Clause mates are in a mutual command relation, so that the clause mate condition in pragmatic interpretation rules can be seen as one in which the uncountable animal NP both commands and is commanded by its interpreter. In addition, pragmatic interpretations such as we are considering can be properly effected when there is just unilateral command of the interpreter by the uncountable animal NP; consider the sentence

The girl who was looking for a coat decided on lamb.

8.50) ~~Buffalo is good for both food and clothes.~~

Here "buffalo" is interpreted as ^{lamb}both meat and skin, though it is clause mate to neither "food" nor "clothes"; but it does unilaterally command both the ~~NP~~ ^{NP} as we see from (8.50').



The unilateral command relationship cannot replace the clause mate condition in defining pragmatic interpretations; this we can see from the following example:

8.51) The girl who wore mink was eating rabbit.

"Rabbit" commands "wore", but because it is clause mate to an eating predicate, it is not interpreted as referring to skin. Thus the clause mate interpreter controls the interpretation of the uncountable NP against interpretation by another interpreter that is commanded by, but does not command, the NP; thus, in Figure 8.1 "Interpreter_m" controls the interpretation of "NP_u" against "Interpreter_c":

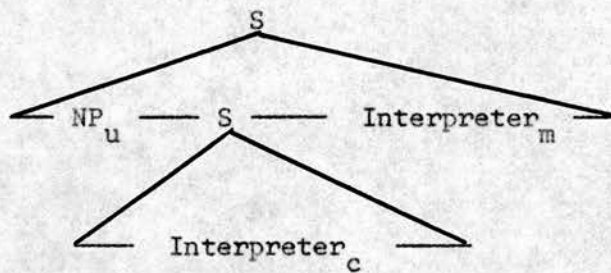


Figure 8.1 Interpreter control

It is not only grammatical relations like command and clause mate that are involved in pragmatic interpretation rules, but also much less well understood relations such as the discourse constraint holding over a topic of discourse. For example, consider the interpretation of "leopard" in (8.52):

8.52) We had very little to eat. There were plenty of leopards around but Esmeralda didn't like leopard, which made things very difficult.

If (8.52) is to make sense "leopard" has to be understood as referring to meat, hence meat reference cannot be denied without anomaly, e.g.

8.53) We had very little to eat. There were plenty of leopards around but Esmeralda didn't like leopard except for the {^{skin}/_{*meat}}, which made things very difficult.

In (8.52) the topic of discourse is set by the first sentence as 'what there was for us to eat', and the text which follows is an exposition of this topic. So the eating predicate in the topic statement acts as the interpreter for the uncountable animal noun which appears in the exposition of the topic. A topic is not limited to one speaker, for example (8.52) might be rendered as

8.54) H.: We had very little to eat. There were plenty of leopards

around --

Esmeralda: But I didn't like leopard.

H.: And that made things very difficult.

The conditions on the interpretation of "leopard" here are identical with those of (8.52). But if the topic is changed, control of the interpreter over the uncountable animal noun is destroyed. Cf.

8.55) A.: We had very little to eat. There were plenty of leopards around but --

B.: Saying that old chap reminds me how hungry I am. How about toddling off to the Red Bull? Oh, and remind me to pick up my suit from the cleaners on the way back, will you?

A.: OK. Let's go. But don't forget it's early closing today. I was about to say that although there were plenty of leopards about Esmeralda didn't like leopard --

B.: Sorry old boy, I've lost the thread.

There must therefore be a pragmatic interpretation rule along the lines of PIR 8.3,

Where the uncountable animal NP does not command⁶ an interpreter, the topic of discourse will assign it an interpretation.

The topic of discourse is not necessarily revealed linguistically; it can be implicit in the situation of utterance. For example, a bone merchant might have cause to say to his boss after collecting from the local abattoir

8.56) I've got horse, pig, and goat, today.

6. This entails it is not a clause mate to one, either.

And the reference will clearly enough be to the bones of these animals because of the implicit topic of discourse.

When there is no contextual or situational cue to its interpretation, the uncountable NP makes 'customary' reference. It is the reference that the speaker can assume to be most likely understood in the absence of any cues, and that the hearer may, conversely, assume to be most probably intended under these conditions. The customary reference of the uncountable animal NP is to meat unless the animal is known to be prized for its skin and not for its edibility, e.g. fox, leopard, mink, or musquash. It is the customary reference rule that causes the sentences of (8.3) to seemingly refer to meat:

- 8.3) Rhino is tough on the teeth.
 Rufus regards hyena as the tops.
 Chamberlain enjoys salted chameleon.
 Humperdinck loves spider.

Although I have only discussed pragmatic interpretation rules as they apply to uncountable animal NP, I assume that similar rules will apply to other kinds of uncountable NP with similar effect; for example the plant nouns in the following sentences.

- 8.57) My favourite grain is oak.
 8.58) Balsa is easy to sculpt.
 8.59) When it comes to wood the one I like is yew.
 8.60) The man from Cuthberts says he has marrow, carrot, and parsley
 on cheap offer.
 8.61) According to Brongwen there's nothing like oak.

In (8.57) the subject NP causes "oak" to be interpreted as referring to a kind of wood grain. In (8.58) "sculpt" interprets "balsa" as referring

to wood. In (8.59) the topic of discourse is wood, and that is what "yew" must refer to. In (8.60) let us assume for the sake of argument that Cuthberts are well known seed merchants: it then follows that "marrow, carrot, and parsley" must refer to the seeds of these vegetables. Finally, in (8.61) there is no contextual or situational clue to the interpretation of "oak", so its customary reference will be to a kind of wood.

The comparative effectiveness of the various relationships between the interpreter and the uncountable NP it interprets can be illustrated by the algorithm in Figure 8.2.

Given an uncountable NP, its interpreter is

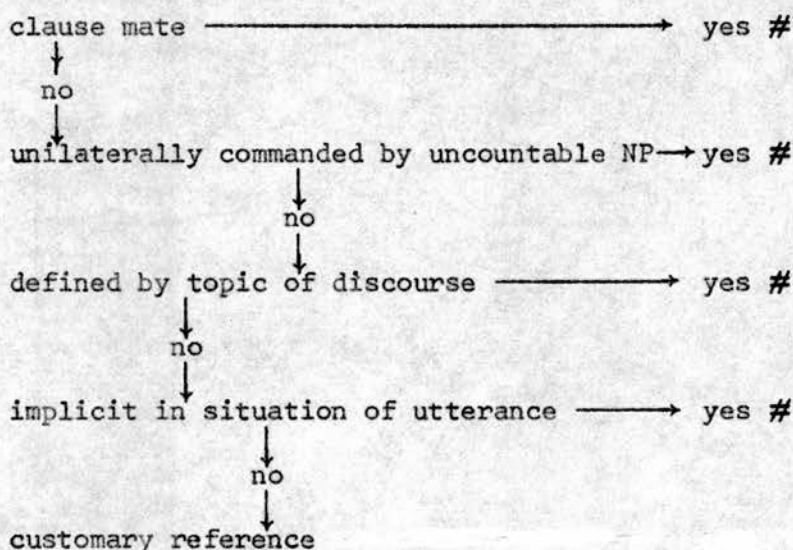


Figure 8.2 Pragmatic interpretation of the uncountable NP

It was earlier pointed out that a clause mate interpreter controls the interpretation of the uncountable NP against interpretation by a unilaterally commanded interpreter; it can now be seen that this is only part of a more general constraint. Figure 8.2 shows a hierarchy among interpreters, the highest being a clause mate of NP, the lowest being customary reference; and the general constraint on interpretation

that obtains with respect to the hierarchy is that-

Any interpreter higher in the hierarchy controls the interpretation of the uncountable NP against interpretation by an interpreter lower in the hierarchy.

CONCLUSION

The surface form of the uncountable animal NP, e.g. NP[lamb] can refer to various products of the lamb such as its meat, its skin, its smell, its bones, or the noise it makes. Similarly an uncountable plant NP may refer to such products as wood, wood grain, the taste, or the smell of a plant; and, in addition, the substance of the plant. It was shown that these various interpretations of the uncountable NP cannot be effected by the semantic content of NP, because there is no semantic representation of them. Instead they must result from pragmatic interpretation rules which assign to the uncountable NP an interpretation using environmental clues. There is hierarchy, illustrated in Figure 8.2, in the kinds of environmental clues available for interpretative function; structural proximity is the most potent location for an interpreter. The interpreter is necessary^u_^ in the same semantic field as the uncountable NP, but at the present time I am unable to discover any defining characteristic in addition to the relationship with the uncountable NP already described, and depicted in Figure 8.2.

The existence of pragmatic interpretation rules to interpret the various kinds of reference that might be made by uncountable NP necessarily affects one's understanding of a semantic item like LAMB or OAK. Such semantic items will head the uncountable NP open to the different

kinds of interpretation I have been discussing; so that LAMB, for example, must be considered neutral between meat, smell, noise made by ^{the} lamb, and so on. If forced to paraphrase it, I could only say, limply and unrevealingly, that LAMB means 'lambiness': it is not anything like 'a property of a lamb', because the entity 'a lamb' is linguistically founded on LAMB ONE, and so might be very loosely thought of as 'an entity with the property of lambiness'. Hence LAMB is not so much the substance of lamb, as the essence. And, mutatis mutandis, the same is true for OAK.

Finally, although I have only discussed the application of pragmatic interpretation rules to a handful of uncountable NP, there is every reason to believe that they are widely used in the elucidation of referential ambiguities.

Chapter 9

COLLECTIVISING¹

- 9.1) "On the way back to camp we sighted two giraffe on the other side of the river, which were coming down to the water's edge to drink." (Arkell-Hardwicke 1903, 285)

The interest of this quotation is that "giraffe" is not plural in form although it is preceded by a denominator greater than one, it has plural concord with "were", and it has plural reference. In fact it could just as well be in plural form without effecting any change in syntax or meaning. The same is true for the animal names in the following quotations:

- 9.2) "A three-month shooting trip up the White Nile can offer a very good mixed bag, including, with luck, Elephant, Buffalo, Lion, and two animals not found elsewhere: Nile or Saddle-back (Mrs. Gray's) Lechwe and White-eared Kob."

(Maydon 1951, 168)

1. Much of the content of this chapter has been published under the title 'Collectivizing' in Archivum Linguisticum 7, 1976, 99-117. The published paper was based on work carried out in the course of writing this thesis.

The following works were consulted in my research of the topic discussed in Chapter 9: Arkell-Hardwick (1903); Babington (1883); Bannerman (1953); Barre et al. (1947); Boas (1968); Cooper (1934); Copely (1952); Curtis & Curtis (1923); Davis (1953); Eden (1958); Ekwall (1914); Finlay & Shepherd (1968); Gibbons (1898); Gough (1953); Haarer (1962); Hemingway (1954); Ingram & Salmon (1934); Irvine (1947); Jackson (1926); Jespersen (1914); Lakoff (1972b); Langendoen (1970); Lydekker (1908, 1914); Lyell (1923); McClure (1966); Maydon (1951); Millais (1919); Peacock (1933); Poutsma (1914); Rutherford (1883); St. John (1846); Sweet (1898); U.S. Department of Agriculture (1950, 1955); Welman (1948); Zandvoort (1972).

"Hippo are hardly worth considering" (ibid. 31)

"We disturbed eight giraffe near camp" (Curtis 1923, 51)

In this chapter I shall be discussing nouns like these which, though in k-form, have plural NP-internal and NP-external concords, and make plural reference; and, significantly, they are most of them nouns for which a plural form exists. Such nouns have been classified in many grammars of English as 'collectives' because of their similarity to nouns like cattle, which are also not marked for plurality and yet refer to more than one real world object, cf. Jespersen (1914, §§ 3, 1-3. 4), Poutsma (1914, 250-6), Sweet (1898, §§ 1966-69), Zandvoort (1972, §§ 226C, 259). But the animal nouns we are considering are rather different: they may refer to individuals as well as collections (cf. a giraffe but not *a cattle) and they typically have plural forms in addition to the collective form; the latter I therefore prefer to call collectivised. It is my purpose here to examine the conditions on collectivising and suggest that the reason for the existence of such a phenomenon is a correlation between differences in linguistic form and different perceptions of the phenomenon referred to. I shall begin by discussing the collectivising of animals, and will later briefly mention plants. I use the term 'collectivised' ambiguously to describe both nouns, and the animals and plants to which they refer.

The quotations in (9.1) and (9.2) all come from descriptions of game hunting, and there appears to be a general constraint in English which limits collectivising to nouns that refer to members of the set of animals and birds hunted for food or sport but not as vermin; cf.

- 9.3) Exotic game: antelope, bear, bongo, buck, buffalo, bushpig,
crocodile, eland, elephant, giraffe, gnu, hippo, hippopotamus,

kudu (koodoo), leopard, lion, nyala, panther, rhino,
rhinoceros, sambur, tapir, tiger, warthog, zebra.

- 9.4) British wild mammals: only roe, roe buck and deer are collectivised.
- 9.5) Mammals, reptiles, and amphibia whose plural is always marked by an overt plural morpheme: badgers, foxes, frogs, hares, hedgehogs, hyenas, jackals, lizards, moles, otters, rabbits, rats, snakes, toads, turtles, wild dogs, kinds of monkeys.
- 9.6) Hunted birds: black cock, coot, -fowl, francolin, grey hen, guinea hen, land rail, mallard, moorhen, ostrich, pheasant, pintail, ptarmigan, quail, ringed plover, snipe, teal, tufted duck, widgeon, woodcock.
- 9.7) Other birds whose plural is always marked by an overt plural morpheme: bee-eaters, blackbirds, crows, eagles, falcons, finches, flamingoes, hawks, hoopoes, larks, orioles, owls, rooks, sparrows, swallows, thrushes, vultures.

Many further examples may be adduced to these lists. The frequency with which collectivisable animal nouns are to be found with a plural morph varies idiosyncratically, although it seems generally lower among bird nouns than other animal nouns; plural marking of deer, goral, kudu, snipe, teal, for example, is very rare². Interestingly, none of the order names like carnivore, rodent or ungulate may be collectivised.

2. It may appear that exotic sounding names like chiru, gnu, goral, kudu, lechwe, saiga, tiang, wapiti, etc. inhibit the affixation of the normal English plural morpheme; but there is no phonological basis for such a view, which would have to rely on some psychological explanation. However, enough exotic sounding names do occur with the plural morpheme, and enough mundane sounding names occur without it; to destroy any credence in such a hypothesis.

Reading through the relevant literature one discovers a wide individual variation in the use or non-use of the plural morph with hunted animal nouns; for example, Lydekker (1908) regularly uses an overt plural morpheme where other authors would collectivise, and he is by no means alone. In (9.5) hyenas and kinds of monkeys are said to require a plural morph, but Lyell (1923, 211) writes 'I have not said much about zebra, gnu, leopard, warthog, bushpig, baboon, crocodile and hyena ...'. The explanation may simply be that one man's game is another man's vermin! Even within one book it is not rare to find both collectivised and plural forms of the same animal noun; for example, within two sentences of the above quotation Lyell uses 'zebras', but a little later 'zebra' - the collectivised form - again. Such variation does not correlate consistently with any particular position of the noun in a sentence although, for instance, lists of animals are more likely to contain collectivised nouns than the same nouns to occur collectivised alone in subject position. I think it is correct to deduce from all this that the phenomenon of collectivising animal nouns is unstable and can lead to vacillation in the use of noun forms, such as is manifest later in this chapter by my use of fish(es) to indicate the plural of fish.

The set of collectivised animal nouns contains none referring to domestic animals; thus, Curtis (1923) mentions 'a pair of zebra' (p. 71) but 'a pair of oxen' (p. 99). However, we need no other authority than our knowledge of English to confirm that it is impossible to make collectives of budgerigar, cat, dog, donkey, goat, mule, ox, parrot, turkey, chicken³, cow, bull, pig,⁴ horse⁵, etc. It is the general constraint

3. Sweet (1898, 1967) notes the occasional use of collectivised chicken and suggests that the final -en in such cases may be mistaken for the Germanic plural suffix, on analogy with words like oxen.

on collectivising, limiting its application to hunted animal nouns, which prevents the collectivising of domestic animals. Consider the effect of this constraint in determining the most natural interpretation of each of the following sentences:

- 9.8) The farmer shot some duck. (Unstressed "some"/s_m/)
- 9.9) The farmer shot the duck.
- 9.10) The farmer fed the duck.
- 9.11) The farmer fed the ducks.
- 9.12) ?*The farmer fed some duck. (Unstressed "some"/s_m/)

Involved in the derivation and interpretation of these sentences are certain assumptions we make about farmers' behaviour that may either support or conflict with the stated constraint on collectivising. The first assumption (A_1) is that if a farmer shoots a duck, it will be a wild duck (+w);⁶ hence we suppose that assumption A_1 entails reference to wild duck and, for convenience, I shall symbolise this $A_1 \supset +w$. The second assumption (A_2) is that a farmer feeds only domestic ducks (-w) and not wild ones; hence we suppose that assumption A_2 entails reference to one or more domestic ducks, and I symbolise this $A_2 \supset -w$.

4. For cow and bull there is the suppletive collective cattle, and for pig the suppletive collective swine. These two collectives are discussed briefly later on in the paper.
5. In military register there is a collectivised use of the word horse meaning cavalry, cf. troop of horse. But this has no relevance to the present discussion.
6. There is a related assumption, call it A_1' , that a farmer wrings the neck of a domestic duck. Incidentally, these assumptions are determined by the normal practices of farmers in Britain; customs elsewhere may be different.

Bearing these assumptions⁷ in mind, we will consider each of the above sentences in turn.

9.8') Here $A_1 \supset +w$ and we expect reference to wild duck. "Some duck" has plural denotation (+p) but singular form (-s), it therefore exemplifies collectivising ($c \supset +p$ & -s) which, under the stated constraint, implies reference to wild duck ($c \supset +w$). Thus the entailments of both A_1 and the collectivising constraint support one another to give the most natural interpretation of "duck" as 'wild duck'.

9.9') Here $A_1 \supset +w$ and we expect reference to wild duck. Because of this the singular form (-s) of "the duck" may have either singular or plural reference ($\overset{+}{p}$) and (9.9), in its most natural interpretation, is ambiguous in this respect. But should A_1 be violated such that reference is made to a domestic duck, then the singular form will imply singular reference, $-w \supset (-s \supset -p)$; this, however, is an unnatural interpretation.

7. These assumptions about farmers' behaviour are not necessarily true, but they are most probably true. We can associate the potential truth value with a decimal scale valued between 0 and 1, where 0 = false and 1 = true. Then $A_1 \supset +w$ will have a value around 0.9, and consequently its violation, i.e. the assumption that a duck shot by a farmer will be a domestic duck ($A_1 \supset -w$), will have a truth value around 0.1. Similarly for $A_2 \supset -w$: the likelihood of a duck fed by a farmer being a domestic duck is around 0.8, the likelihood of its being wild is around 0.2.

The entailment of A_1 does not derive from the verb shoot, or even the farmer shot but from the whole sentence

the farmer shot $\left\{ \begin{array}{l} \text{some} \\ \text{the} \\ \text{etc.} \end{array} \right\}$ duck. Thus the entailment of the farmer shot

the (crippled) horse would probably not be +w.

On variable truth values see Lakoff (1972b).

- 9.10') Here $A_2 \supset -w$ and we expect reference to domestic duck. Under this condition, $-s \supset -p$ and the most natural interpretation is that reference is to a single domestic duck. But should A_2 be violated such that reference is made to wild duck, then $-s \supset \overset{+}{p}$; this, however, is an unnatural interpretation. The conditions on the derivation and interpretation of (9.10) are the converse of those on (9.9).
- 9.11') Here $A_2 \supset -w$ and we expect reference to domestic ducks. Under this condition $+s \supset +p$ and the most natural interpretation is plural denotation of domestic ducks. But if A_2 should be violated such that reference is made to wild duck, this unnatural interpretation has no effect on the understood plural reference of 'ducks' because plural reference of a $+w$ noun either may or may not be expressed by an overt plural morpheme ($+w \supset \overset{+}{s}$).
- 9.12') Here $A_2 \supset -w$ and we expect reference to one or more domestic ducks. Under this condition, we expect $-s \supset -p$, but in fact we have collectivising ($= -s \ \& \ +p$), and $c \supset +w$. Hence we have conflict between the entailments of A_2 and the collectivising constraint, which give, respectively, $-w$ and $+w$; and so there is no natural interpretation of (9.12). 'The farmer fed a number of domestic ducks' seems to be impossible as an interpretation, and the best that can be made of (9.12) is an unnatural interpretation that 'the farmer fed a number of wild duck' - perhaps in the context of a hard winter. And so we see that the general constraint on collectivising can over-ride our assumptions about farmers' behaviour, but not vice versa. Until we

have a satisfactory overall account of the pragmatics of the English language it is not clear what value can be placed on this conclusion, but I speculate that the general constraint on collectivising is a strong one.

A subset of the nouns which fall within the general constraint, mainly nouns referring to exotic game animals, is subject to the further constraint of being collectivised only in certain contexts⁸ associated with the notion of hunting. It is probable that there was originally a restriction to the context of hunting with weapons, which came to include game rearing and the preservation of game for the hunter; in more recent times the scope of the constraint has expanded to cover hunting with a camera, and game conservation. Hence in reports of animals observed in nature reserves, particularly by game rangers and cognoscenti, one finds many examples of collectivising. Zoos, however, have a rather different status. Notice the gradation in acceptability of sentences (9.13-16):

- 9.13) We bagged three elephant that day.
 9.14) We observed three elephant in the game park.
 9.15) ?We saw three elephant in the game park.
 9.16) ?*We saw three elephant at the zoo.

The difference between (9.14) and (9.15) lies in the probable utterance characteristics of the two sentences, evoked by the respective connotations of observe and see. We would predict that (9.14) was uttered by a cognoscente in some appropriate context, so satisfying conditions on its acceptability. We would not be so certain about the utterance characteristics of (9.15); it could be like (9.14) or it could be like (9.16).

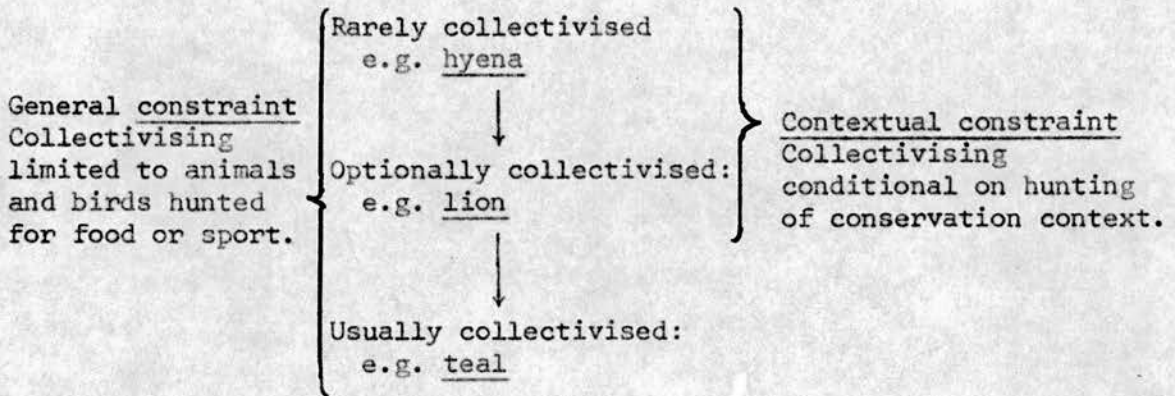
8. 'Context' here is used in the widest possible sense to connote contextual, situational, and environmental influences.

(9.16) appears to be the remark of a casual visitor to the zoo, and it is unnatural because it flouts the contextual constraint on collectivising; if uttered (9.16) would sound either facetious or precious; compare it with:

9.17) We have reared three white rhino at the London Zoo.
 Assuming that (9.17) were spoken by someone like a zoologist from the London Zoo within an appropriate context it would be perfectly acceptable. It is not the case that the language of cognoscenti is not subject to the same constraints as that of other speakers, but simply that they will normally be operating in the right context when making such utterances.

To summarise the discussion so far: collectivisable nouns are formally similar to non-collective countables in that (i) the singular form refers to an individual referent, (ii) the plural form refers to a number ($n \geq 2$) of referents, (iii) they freely take denumerators. They are similar to collective nouns in that the singular form may have plural reference; but they differ from other collectives: they differ from nouns like herd whose singular form invariably refers to a collection never an individual referent, and whose plural form refers to a number ($n \geq 2$) of collections; they differ from pluralia tantum nouns like cattle which (i) never refer to an individual referent and (ii) are normally denumerated through the medium of a classifier. There is a general constraint on the collectivising of animals which limits it to the set of animals and birds hunted - in times past if not at present - for food or sport (i.e. for trophies like feathers, skins, tusks, etc.); there is a further contextual constraint which restricts the collectivising of a proper subset of this set (consisting of exotic animals and some others) to the context of hunting, or, antithetically

(for the reason given)⁹, conservation. The likelihood of a member noun being collectivised varies idiosyncratically on a scale from most unlikely (e.g. hyena) to most likely (e.g. teal). See Figure 9.1.



(The arrow indicates increasing 'collectivising neediness')

Collectivising is subject to idiolectal variation and inconsistency within idiolects.

Figure 9.1 Part of the collectivising squish.

Like nouns referring to wildfowl, fish nouns are subject to the general constraint on collectivising but not to the contextual constraint; but whereas with hunted animals and birds the presence or absence on the noun of a plural morpheme under the stated constraints has no semantic effect, this is not the case with fish nouns, as can be seen from the following:

9.18) "The cat-fishes, of which there are about fifty distinct forms arranged in four families, constitute the largest group, with probably the greatest number of individuals per species. In some parts of the country, where nets

9. Incidentally, we know that contraries are associated together in the mental store (they often co-occur in word association tests and the like) so the yoking together of hunting and conservation is not too surprising from the psychological point of view; cf. Baker (1974).

are little used and fishing is mainly done with traps and long lines, at least three-quarters of the annual catch is of cat-fish." (Welman 1948, 8)

Here within the length of two sentences, we find both the form with an overt plural morpheme and the collective form. What is more, this quotation makes it plain that "cat-fishes" refer to different species of cat-fish(es) whereas "cat-fish" refers to individuals (from one or more species) caught by fishermen. This distinction in the scope of reference between the form with an overt plural morpheme and the collective form is obvious to anyone who cares to examine ichthyological literature; for example:

- 9.19) "Butterfly fishes
 Butterfly fishes (freshwater)
 Butterfly fish, striped
 ...
 Carp, African
 Carps, toothed
 ...
 Herrings
 Herring, dog-toothed
 ...
 Horse mackerel, African
 Horse mackerels
 Horse mackerel, thread-fin
 ...
 Mulletts, grey
 Mullet, grey (golden)
 Mullet, grey (lagoon)
 ..."
- (Irvine 1947, Index).

And cf. Cooper (1934), Copely (1952), Davis (1953), Welman (1948).

In Davis we find a chapter entitled 'The Propagation of Pacific Salmons' and within its first paragraph:

9.20) "Salmon, like trout, build nests" (Davis 1953, 83)

"Salmon" here has plural reference (and concord) and it is generic.

Both the collective form and the form with a plural morph are used of fish nouns for generic reference, the sense of the former being something like 'the genus is a set of member fish' and of the latter 'the genus is a set of subsets (= species) of fishes.' The two forms seem to be in free variation, cf.:

9.21) Herring travel in large shoals.

9.22) Herrings travel in large shoals.

Likewise the class term fish/fishes, which also has two forms and two senses with identical reference. Fishes is typically used when a number of species or genera are being referred to, for example in the book titles The Game Fishes of Africa, Culture and Diseases of Game Fishes, Preliminary Survey of the Freshwater Fishes of Nigeria. However, we also find fish used with the same kind of reference in The Fish and Fisheries of the Gold Coast; the use of "Fish" instead of fishes in this title (of the book from which (9.19) is quoted) is presumably a matter of style, it does not seem to be motivated by any other consideration. In the index of this same book (Irvine 1947) we find "Cat-fish, sea" but the text indicated refers to "sea cat-fishes": this is possibly a typographical error, but the explanation is more likely to lie in the variability of usage characteristic of collectivised animal nouns.

Most fish nouns are obligatorily collectivised when they have plural reference, and the adjunction of a plural morph indicated reference to a number of species instead of a number of individuals. That is, in the plural they manifest the 'species factor', which was seen in p.240 ff. to be characteristic of certain hemi-countables, e.g.

- 9.23) "The wheats were predominantly Triticum aestivum ssp. vulgare types ..." (Finlay & Shepherd 1968, 159)

Revised Micronaire Finer-Fineness Scale for Use in Testing American Upland Cottons (U.S. Department of Agriculture 1950)

The Bamboos: a fresh perspective (McClure 1966)

"Non-wither teas" (Eden 1958)

A dozen wines stood ready for tasting.

Some of these same hemi-countables are 'mass' nouns: like collective or collectivised nouns, their k-form makes reference to readily separable natural units, cf.

- 9.24) coffee: beans, grains, grounds, ...
 sand: grains, ...
 sugar: granules, ...
 wheat: stalks, ears, spikelets, grains, ...

Despite the fact that the singular form of such hemi-countables denotes a plurality of 'natural units', it can only have singular NP-external concord,

- 9.25) The wheat is growing well, isn't it?
 *The wheat are growing well, aren't they?
 The spilt sugar was being carted away by ants.
 *The spilt sugar were being carted away by ants.

Thus these mass nouns can make only intensional reference, whereas collectivised nouns make only extensional reference - so that only in (9.27) is "elephant" collectivised:

- 9.26) The elephant is downwind of us.
 9.27) The elephant are downwind of us.

Both mass nouns and collectivised nouns therefore differ from ordinary collective nouns like herd, which can make either intensional or extensional reference! (cf, p.134 ff.)

Let us now, briefly, consider the collectivising of plants. Trees are quite freely collectivised (9.28), and so are cabbage, cauliflower, lettuce, and beetroot (9.29):

9.28) Dutch elm disease has reduced the numbers of elm to a few thousand.

These oak and beech must have been here for a couple of hundred years.

Four silver birch stood sentinel over the driveway, while three weeping willow drooped over the back garden.

Pine grow quicker than spruce.

9.29) She bought three $\left\{ \begin{array}{l} \text{cabbage} \\ \text{cauliflower} \\ \text{lettuce} \\ \text{beetroot} \end{array} \right\}$ for only 90p.

Old Tom planted some $\left\{ \begin{array}{l} \text{cabbage} \\ \text{cauliflower} \\ \text{lettuce} \\ \text{beetroot} \end{array} \right\}$ there that grew to an enormous size.

But other vegetables, flowers, and fruits, cannot per se be collectivised, cf.

9.30) *You only get three $\left\{ \begin{array}{l} \text{carrot} \\ \text{leek} \\ \text{onion} \\ \text{potato} \\ \text{rose} \\ \text{daffodil} \\ \text{daisy} \\ \text{hyacinth} \\ \text{tulip} \\ \text{apple} \\ \text{cherry} \\ \text{plum} \\ \text{blackcurrant} \\ \text{raspberry} \\ \text{strawberry} \end{array} \right\}$ for 90p.

It is noticeable that in both (9.28-29) the whole plant, or rather a number of whole plants, is collectivised; and there are sentences, of rather dubious acceptability, wherein vegetable, flower and fruit nouns are collectivised when the plants bearing these products are referred to, cf.

9.31) ?These { carrot
 potato
 turnip
 marrow
 cucumber
 melon
 hyacinth
 violet
 tulip
 iris
 apple
 plum
 cherry } are doing well; it must be the weather!

To range a denominator over the collectivised nouns of (9.31) has an adverse effect on the acceptability of the NP, presumably because it accentuates individuality within what is a very fragile collection. When these plant nouns are collectivised, as in (9.31), the NP which they head (on the surface) is understood as referring to a crop; thus these cucumber are doing well means something very much like this crop of cucumber { is } are doing well.

The collectivising of animal and plant nouns is evidently systematic and presumably rationally motivated. It can be accounted for, along with countability and what I have termed the categories of reference, if it is assumed that the characteristics of the phenomena to which nouns refer, or more exactly the language user's perception of these characteristics, is what determines the use of a particular linguistic categorisation; different perceived characteristics correlate with correspondingly different linguistic categories and classes, and presumably, in large measure, account for the existence of them. Just such a hypothesis is implicit in the semantic descriptions of parts of speech in many traditional

pedagogic grammars, and more recently, the claims made by generative semanticists about the nature of co-occurrence constraints. Hence I postulate the following pragmatic principle, the k-principle:

The k-form of the noun is used in referring to a phenomenon or set of phenomena whose perceived composition does not readily permit division into a number of 'natural units'; or, alternatively, whose 'natural units' are not regarded as significant -- either ordinarily, or in the particular context -- by the language user.

For example, liquids are not composed of 'natural units' so far as the ordinary language user is concerned; liquids are therefore normally referred to by uncountable NP headed by k-form nouns. The exception is where artificial units exist as in

9.32) Could I have three $\left\{ \begin{array}{l} \text{milks} \\ \text{beers} \end{array} \right\}$ please?

"Milks" means bottles, cartons, or cans of milk; "beer" means bottles, cans, or glasses of beer. Again,

9.33) Give me three $\left\{ \begin{array}{l} \text{sugars} \\ \text{coffees} \end{array} \right\}$ please.

"Sugars" means lumps (cubes) or spoonfuls of sugar; "coffees" may mean spoonfuls of coffee, cups of coffee, or even kinds of coffee, depending on context; the actual interpretation being determined for the occasion by a pragmatic interpretation rule. The unitising of hemi-countables into significant artificial units highlights the comparative insignificance, in most contexts, of one of the 'natural units' of the reference of nouns like coffee, sugar, tea, etc. cf. (9.24). Such nouns are collective terms for a mass of 'natural units' which can be referred to as beans, grains, leaves, etc. but which are not ordinarily significant enough as individuals to merit a simple noun as a common term of reference, and can only be referred to by means of a compound noun or

a phrase such as coffee bean, grain of coffee, etc. The situation is exactly analogous to the fact that in one language a simple noun has denotation which can only be expressed by means of a compound noun or a phrase in some other language. For example, in Eskimo there are the simple nouns

- 9.34) a. aput
 b. qana
 c. piqsirpoq
 d. qimuqsuq

denoting what we would have to describe using more complex constructions in English, viz:

- 9.35) a. snow on the ground
 b. falling snow
 c. drifting snow
 d. snow drift

cf. Boas (1968, 177). These facts are usually explained in terms of the following hypothesis: the Eskimo environment makes it significant for Eskimos to distinguish various kinds of snow by simple nouns, whereas the environment in which the English language developed presents no real need for such nouns¹⁰. (That there is no resulting limitation on the capacity

10. This explanation employs Zipf's (1949) principle of least effort. In all the languages which Zipf studied there is a tendency for the length of a linguistic expression to be negatively correlated with its frequency of occurrence. "There are countless familiar examples of English words which have been abbreviated as they increased in frequency. The automobile has become the car; television is TV; long-playing records are LPs. In French the cinématograph became the cinéma and eventually the ciné. The failure of such phrases as damp soft snow or father's brother's wife to abbreviate to a word suggests that these phrases are not often used, these categories not often named in English. The language that has a word for a category, especially a short word, probably has now or has had in the past frequent occasion to make reference to that category. We will go further and propose that the frequency with which a category is named is an indication of the frequency with which the category is used in perception and thought".

(Brown & Lenneberg 1959, 14)

of the English language to describe perceived phenomena is shown by (9.35); this could be regarded as evidence for pragmatically motivated lexical gaps.) The point to be taken is that natural phenomena are linguistically categorised according to those of their characteristics that are significant in a particular context or set of contexts; so that both interlingually and intralingually the (apparently) same phenomena may be referred to by one linguistic form in one environment or context, and by another, perhaps more complex form or construction, in another. The k-principle is a restricted application of this general principle.

I assume it was the k-principle which originally motivated the collectivising of hunted animals: the hunter was not primarily interested in animals as individuals, what was significant to him was either flesh for food or horns, skins, tusks, feathers, etc. for trophies; in other words the k-form was used because the 'natural units' were not significant to the hunter¹¹. But whereas this explanation is quite adequate to account for those nouns which are only collectivised in the context of hunting (and, more recently, conservation), it does not so obviously apply to those nouns that fall within the general constraint but outside the contextual constraint on collectivising: such nouns, mostly bird and fish nouns, are either usually or obligatorily collectivised in all contexts. The interesting difference between these nouns and the ones subject to the contextual constraint is that birds and fish(es) are hunted for food as well as sport, whereas exotic animals are primarily

10. (continued) This seems to me to be broadly correct, but Brown & Lenneberg (following Zipf) suggest that the reason for the relative frequency of "category" naming (and hence length of the naming expression) is the varying frequency of perception or thought of different "categories": yet surely it is the result of the varying significance of the "categories".

11. And classifiers like covey, flock, or herd would not be appropriate.

hunted (by native speakers of English, anyway) for sport and not food. Hunting for food phylogenetically antedates hunting for sport, and we would expect collectivising to apply first to animals hunted for food and then, by analogy, to those hunted for sport, perhaps with special constraints placed on the collectivising of non-food animals. If this hypothesis is correct, it not only explains the contextual constraint on collectivising exotic animals, and perhaps the fact that it is optional to do so, it also explains the fact that vermin are not collectivised even though they are hunted. Thus I conclude that the k-principle applies in all contexts to many nouns referring to animals hunted for food, and by analogy, though only under the contextual constraint, to nouns referring to animals hunted for sport¹².

Presumably, the k-principle applies with animals hunted for food just because they are significant as kinds of food and not as individual animals. I am proposing, then, that the motivation for using the k-form to refer to animals hunted for food is the same one that results in the k-form being used to refer to meat in sentences like

9.36) We're having $\left. \begin{array}{l} \text{lamb} \\ \text{rabbit} \\ \text{chicken} \\ \text{goat} \end{array} \right\}$ for lunch.

It was pointed out in Chapter 8 (p.267) that where the consumer eats only part of the animal at one sitting, the animal is not significant

12. It has already been remarked (more than once) that many animals which used to be hunted are now being conserved in game sanctuaries: and, paradoxical as it may seem, these observations on hunted animals apply equally to the same animals in conservation contexts.

Supporting evidence of the claim that the collectivising of hunted animals was motivated by their being a source of food is the fact that some domestic animals reared for food (inter alia) are referred to by collective nouns, viz. cattle, swine, ?sheep, whereas pets like dogs and cats, and beasts of burden like horses, mules or donkeys, are never collectivised.

as a 'natural unit', and the k-form meat noun is used in an uncountable NP. We might contrast (9.36) with (9.37) in which the food objects are significant as 'natural units' because one or more will be consumed at a sitting:

9.37) We're having $\left\{ \begin{array}{l} \text{pilchards} \\ \text{ham sandwiches} \\ \text{oysters} \end{array} \right\}$ for lunch.

The difference in reference between meat nouns and collectivised hunted animal nouns gives rise to syntactic differences: the meat noun makes intensional reference to a kind of substance, it is therefore lodged in an uncountable NP with singular concord relations, cf.

9.38) Beef is cheap this week.
*Beef(s) are cheap this week.

In this respect it is comparable with a mass noun like sugar, which is only open to making intensional reference, e.g.

9.39) Sugar $\left\{ \begin{array}{l} \text{is} \\ \text{*are} \end{array} \right\}$ getting more expensive along with everything else. Extensional reference to the 'natural units' composing the denotata of a mass noun can only be achieved by means of constructions like grain of sugar, etc. I have suggested that the reason for the relative complexity of the linguistic expression for such 'natural units' against the (correlatively) simple form given the mass noun, is its comparative insignificance in most contexts. The 'natural units' of e.g. sugar are ordinarily insignificant outside of the collection (or mass) which constitutes the denotation of the noun; hence only the collection as a whole is significant, and the noun makes intensional reference. In contrast with both the mass noun and the meat noun (9.38-39), the collectivised noun can only make extensional reference, e.g.

Under the conditions described earlier, a deletion transformation - for which there is no better name than Collectivising - erases ONES from the prelexical structure of an appropriate NP, provided that One-ising has not applied to it. Incidentally, it has now become clear that Collectivising is an operation on NP and not on nouns.

A comparison of (9.41'-42') shows that the 'natural units' of the denotata of mass nouns are semantically insignificant; whereas those of collectivised NP are not. One would therefore predict that the form of linguistic expression for the extension of a mass noun would be more complex than the form of expression for the extension of a collectivised NP; and, conversely, that intensional reference to the denotata of a mass noun would be made by a less complex expression than intensional reference to the denotata of a collectivised NP: we see from Figure 9.2 that this prediction is absolutely correct:

	Mass Noun (<u>sugar</u>)	Collectivised NP (<u>elephant</u>)
Intension	sugar	herd of elephant
Extension	grains of sugar	elephant

Figure 9.2

Collectivised plant NP offer no surprises to the conclusions reached in the discussion of collectivised animal NP. Collectivised plants are not significant as individuals because they are perceived as a crop; for potential harvest as wood, food, or flower products.

This Chapter began by noting that some animal nouns may occur in k-form as heads of countable NP which have plural reference; even though, for many of the nouns, a normal plural form exists and could just as well

be used. Such NP have been collectivised. The class of collectivisable animal nouns was found to be limited to nouns that refer to mammals, birds, fish(es), and a handful of exotic reptiles, which are (or were until fairly recently) hunted for either food or trophies. Animals hunted for food are collectivised in all contexts, and it is by analogy with them that animals hunted for sport (or, perhaps, in more recent times being conserved in game sanctuaries) are collectivised, but optionally, and only in hunting (or conservation) contexts. I have remarked the instability of collectivising in the idiosyncratic behaviour of both individual nouns and language users; but one of the most peculiar things is the fact noted in (9.4) that with the exception of roe, roe-buck, and deer no nouns referring to hunted British mammals are collectivisable, although many bird and fish nouns are. It is peculiar because Britain is the land where the English language developed and one would have expected animals hunted there to be collectivised a priori. The following explanations suggest themselves.

(i) Apart from various kinds of deer all hunted British mammals are regarded as vermin. But this ignores the fact that rabbits and hares are hunted for food; and foxes (although often regarded as vermin) are hunted for the brush. (ii) Apart from deer none of the hunted British mammals go about in herds and so they must be hunted as individuals and so there is no reason to collectivise. But neither leopard nor rhinoceros are gregarious animals, and most collectivised fish are caught singly. (iii) Apart from deer all British wild mammals are small. The exotic game mammals which are collectivised are usually large or largish, and so are the domestic mammals which are collectivised, viz. cattle, swine and sheep; hence arises a hypothesis that their large size is a prerequisite for the collectivising of mammals: the speculativeness of this hypothesis is tempered by the fact that, according to Frank Kapelinski

(personal communication), such a constraint operates in Polish. This constraint looks slightly better when it is remarked that the set of collectivised (and larger sized) mammals is just the subset of mammals most likely to be hunted by the upper socioeconomic classes rather than the peasantry; so we might postulate that the collectivising of hunted animals was originally an upper class phenomenon which became incorporated into Standard English without being extended to all relevant nouns. This still does not explain why stags and foxes are not collectivised, and unfortunately the hypothesis can only be seriously sustained if we assume that birds and fish(es) were also the game of the upper classes alone. Prima facie this assumption seems untenable and I reject the hypothesis for lack of evidence. Parenthetically, I note that the guardians of cattle, swine and sheep would not have been upper class. (iv) A final hypothesis: foxes, otters, and badgers were not hunted for food and would therefore necessarily be subject to the contextual constraint on collectivising; if the contextual constraint were an historically late development (of which there is some evidence, cf. Ekwall 1914), the use of plural forms with these hunted animal nouns would already be an established convention by the time it came into existence, and for this reason they are not collectivisable. This hypothesis might inspire confidence if rabbits and hares (animals hunted for food) were collectivised; but they are not, and there is no evidence that the notion of collectivising was ever associated either positively or negatively with any of these animals and the nouns that denote them.

I conclude that none of these attempts is adequate to explain the anomalous non-collectivising of most British wild mammals. Henry Sweet (1898 ^{SS}994, 1966) has suggested that what I have called collectivised NP result from an historical failure to substitute the -(e)s suffix for

earlier plural forms. A fact not hitherto noted is that all collect-
 ivisable animal nouns which do also have plural forms take the regular
-(e)s plural: there is no collectivising among nouns that have an
 internal vowel change plural or a Germanic -en plural. (Collectivised
hippopotamus and rhinoceros have both the -s plural and the Latin -i
 plural, so they are debatable counterexamples; the issue is further
 muddled because their singular form terminates in -s.) However, a
 hypothesis that collectivising is simply an etymological quirk will
 not stand scrutiny. The favourable evidence is that (i) deer, sheep
 and swine derive from Old English neuter nouns which had unchanged
 plurals (in the nominative and accusative cases), and it is possible —
 even likely — that this characteristic has been retained. (ii) It is
 conceivable that cattle, cognate with chattels, is unmarked for plural
 on analogy with meat, the noun it replaced, which had an optional un-
 changed plural in Old English. (iii) Certainly none of fox, goat, hare,
otter or ox from Germanic, or badger, cony, rabbit or squirrel from Old
 French, had unchanged plurals in the past; and none of them is collect-
 ivisable today. (iv) Many fish nouns had unchanged plurals in Old Norse
 (as, indeed, they do in modern Scandinavian), and fish are collectivised
 in present day English. The unfavourable evidence is that (i) there are
 many nouns which had unchanged plurals in Old English but whose modern
 cognates cannot be collectivised. (ii) Trees are freely collectivised
 in present day English but the nouns for few, if any, derive from Old
 English nouns with unchanged plurals. (iii) In Middle English there
 were very many examples of nouns from diverse origins with optional un-
 changed plurals (cf. Ekwall 1914); among them even nouns like nail,
 derived from nouns of the Old English masculine first declension whose
 plural suffix -as was the model for the modern regular plural -(e)s.
 This widespread loss of plural noun inflexion was temporary, and lasted

no later than the 17th century; yet Sweet apparently believed that through this sea of change people clung to a handful of unchanged plural relics from Old English -- which seems unlikely unless there were a reason for their behaviour, such as I have proposed for collectivising. The hypothesis that the unchanged plural of animal and plant nouns is an etymological quirk fails to account for five facts: (i) the unchanged plural of plant nouns cannot possibly be accounted for in this way; (ii) the unchanged plural of animal and plant nouns is not in free variation with the regular plural that most such nouns have as well; (iii) of animal nouns, only those denoting animals hunted for food or sport may have unchanged plurals, and (iv) a subset of these nouns may only have unchanged plurals in hunting -- or more recently, conservation -- contexts; (v) the unchanged plural of nouns denoting exotic game cannot possibly be accounted for on etymological grounds because many of these nouns were not in use in Old English; this could be explained away if extensive analogical formation were allowed, but it would leave another problem: why restrict the analogical formation to exotic game? The account of collectivising I have given explains these facts in terms of a motivation for collectivising, and it is therefore a more satisfactory hypothesis than Sweet's. It is difficult to assess the importance of a noun's etymology in relation to its collectivisability. Although it has been shown that the derivation of a noun from an Old English unchanged plural cannot satisfactorily explain its being collectivisable in present day English, it is conceivable that the coexistence, during the Middle English period, of the unchanged plural noun with the regularised plural of the same noun, led to a bifurcation in usage of the two forms; and the consequent creation of a systematic distinction between collectivised and plural NP -- such as we have today. The reason that collectivising appears to apply only to nouns with -(e)s plurals is

a simple matter of statistical probability: only one noun, goose/geese, falls within the stated constraint on collectivising but takes a different kind of plural; in view of the large number of nouns which fall within these constraints but are not collectivised despite their -(e)s plural, the instance of goose is no surprise. Hence I would argue that collectivising is not in principle limited to nouns that have the normal -(e)s plural (and so there is no debate about hippopotami and rhinoceri after all; and is collectivised goose not possible?).

CONCLUSION

In Chapter 9 I have been discussing plural NP in which the head noun (denoting animals or plants) is in k-form even though a regular plural form of the noun is, in most cases, available for use. It was argued that the only feasible explanation for the existence of such NP, which I have named 'collectivised NP', is that the language user perceives their reference not to be significant as individuals, but as a source for harvesting food, trophies, or other goods. Thus, although collectivised NP have the predictable semantic structure of a plural and are classified by ONES, the latter is deleted late in the derivation by the Collectivising transformation (provided Onesing has not reduced the NP), which leaves the k-form animal or plant noun as NP head. The constraints on Collectivising are that if the regent denotes animals, they must be ones hunted for food or sport; and for some such nouns the NP must be used within a hunting or conservation context. Alternatively, if the regent is a plant noun it must denote trees or plants as wholes and not the fruit, flower or any other part of the plants. Obviously the constraints on this grammatical transformation are pragmatic.

The language user's perception of his intended reference not only affects collectivised NP, but also the whole gamut of the grammar of singularity and plurality. Discrete phenomena are classified by ONE(S), and, so, labelled through countable NP. Nondiscrete phenomena like liquids are labelled through uncountable NP, except where they are contained in conventional artificial units. Discrete phenomena which are only significant en masse, like salt or sugar, are referred to through uncountable NP, and their composite particles in the more complex classifier constructions such as grain of salt or granule of sugar, in which "salt" and "sugar" are uncountable NP. Thus countability in English nicely distinguishes for us the normally significant individuals from normally insignificant, and nondiscrete, phenomena. Individuals referred to in collectivised NP have, for the occasion, lost their significance as individuals, and this is indicated by the deformation of the countable NP. In Chapter 5 we saw that when a plurality is perceived as a singular, or conversely a singular is perceived as an extension of composite members, these perceptions are indicated by differences in the external concord relations of NP.

It has been my purpose to show that the grammar of singularity and plurality is not at all arbitrary but based on a system of correspondence with the perceived characteristics of the phenomena being referred to. There is reason to suppose that the Whorfian hypothesis is a relevant consideration in this matter, and that the conventions of the English language induce specific interpretations of natural phenomena not necessarily prevalent in other language communities; thus it seems quite reasonable to speculate that there exists a natural language in which all nouns referring to collections, regardless of the characteristics of the members of these collections, would have

plural concord relations to match their plural denotation: it would, for example, be irrelevant to an account of collective nouns in such a language to categorise natural phenomena as more suited to intensional than extensional reference, or vice versa. However, in the final chapter of this thesis I shall show that there are remarkable similarities across the world in the way humans perceive the salient characteristics of phenomena, and consequent similarities in the linguistic categories and classes that exist to label their perceptions.

Chapter 10

CLASSIFIERS: CROSS CULTURAL EVIDENCE FOR CORRESPONDENCE BETWEEN LINGUISTIC FORM AND THE PERCEIVED CHARACTERISTICS OF PHENOMENA¹

In the last chapter a regular correspondence was shown to exist between the linguistic representations of singularity and plurality and the perceived characteristics of the phenomena being referred to. In this chapter the same kind of pragmatic analysis is extended to data about noun classes in many languages, and it is argued that classifiers typically index some perceived characteristic of the phenomenon to which the classification refers. Consequently, the recurrence of similar noun classes in unrelated and geographically separated classifier languages shows that diverse language communities categorise perceived phenomena in similar ways.

There are remarkable similarities between classifiers for nouns in many unrelated and geographically separated languages from Africa, the Americas, Asia, and Oceania. I have surveyed more than fifty classifier languages², and although the reliability of my data is

1. Much of the content of this chapter has been published under the title 'Classifiers' in Language 53, 1977, 265-311. The published paper was based on research carried out in the course of writing this thesis.
2. The languages and most of my sources for data on them are as follows. Oriental languages: Chinese (Brainerd & Peng 1968, Hashimoto 1973); Japanese (Brainerd & Peng 1968; Chamberlain 1907; Jordan 1962; additional material from native speakers Taka Bluhme and Mungoji Tamazaki); Vietnamese (Emeneau 1951; Thompson 1965); Nùng (Saul 1965); Khmer (Jacob 1965, 1968); Thai (Haas 1942; Lanyon-Orgill 1955); Burmese (Becker 1975; Burling 1965; Hla Pe 1965); Melanau (Clayre MS); Bahasa Indonesia. Oceanic languages: Louisiade Archipelago (Ray 1938); Kiriwina (Malinowski 1920); Eniñiljaugwa (Worsley 1954) together with Gwi:ni and many N. and N.W. Australian languages (Capell 1940, 1942; Capell & Elkin 1937; Wurm 1972); Dyirbal (Dixon 1968, 1972). African languages: Proto-Bantu (Creider & Denny 1975; Wolf 1971); Bantu (Gregersen 1967; Guthrie 1948a, b; Johnston 1919, 1922; Kadima 1969; Werner 1919); Swahili (Wilson 1970); Loka (Winston 1962); Tonga (Collins 1962); Bemba (Givón 1969); Luyana (Givón 1970); Luganda (Francis Katamba, a native speaker - private communication);

(continued on next page)

variable, I am fairly confident that the traits observed in the classifier systems I have investigated constitute a complete and universal set.

Classifiers are defined on two criteria: (a) they occur as morphemes in surface structures under specifiable conditions; (b) they have meaning in the sense that a classifier denotes some salient perceived or imputed characteristic of the entity to which an associated noun refers (or may refer). Perhaps all languages have classifiers; English, for example, which is not generally regarded as a classifier language, possesses nouns which exactly correspond to Thai, or Burmese, or Tzeltal lexemes everyone agrees to be classifiers, cf. (4.37-39). Perhaps it should be a defining characteristic of classifier languages that they have at least some classifiers whose distribution is entirely restricted to classifier constructions: but then the Classifier Nouns seem to qualify English as a classifier language. So, rather than distinguish between classifier languages and non-classifier languages (as I did in Allan 1977) I would now admit only that some languages make more extensive superficial use of classifiers than others; with a caveat that such a difference might not be apparent if the deep structure of the languages were compared.

2. (continued) Fula (Arnott 1967; Taylor 1953); Tiv (Abrahams 1940; Arnott 1967); Birom, Ganawuri, Anaguta, Irigwe, Kaje, Rukubwa, More, Dakarkari (CNRS 1967, various authors). American languages: Nootka (Swadesh 1939); Eyak, Tlingit, Haida (Krauss 1968); Navajo (Davidson et al. 1963; Ervin & Landar 1963; Hoijer 1945; Landar 1964, 1965; Sapir 1932); Dogrib, Mattole, Chipewyan, Galice (Davidson et al. 1963); Coeur d'Alene (Reichard 1945); Yurok (Haas 1967); Ojibway, Cree (Denny & Odjig 1972, Denny 1974, 1976a); Toba (Denny 1976a); Tarascan (Friedrich 1970); Tzeltal (Berlin 1968); Yucatec (all the data are from native speaker Ramón Arzápalo, to whom I am deeply grateful); Eskimo (Denny 1976a).

TYPES OF CLASSIFIER CONSTRUCTION

There are four types of classifier construction: the numeral classifier construction, the concordial classifier construction, the predicate classifier construction, and the intra-locative classifier construction. Languages generally have only one kind of classifier construction: those with the numeral classifier construction are called numeral classifier languages, those with the concordial classifier construction are concordial classifier languages, and so on. I will illustrate each of these types in turn.

NUMERAL CLASSIFIER LANGUAGES

Numeral classifier languages are the paradigm type. They are called 'numeral classifier' languages because a classifier is obligatory in many³ expressions of quantity. For example consider Thai⁴

10.1) khru· lâ·j khon 'teacher three person' = three teachers

10.2) mā· sî· tua 'dog four body' = four dogs

In all numeral classifier languages the classifiers occur in anaphoric or deictic expressions as well as in expressions of quantity, e.g. Thai

10.3) mā· tua năn 'dog body that' = that dog

10.4) tua năn 'body that' = that [animal, coat, trousers
or table]

10.5) sî· tua 'four body' = four (of them) [animals, coats
trousers, or tables]

3. It is not necessarily the case that all nouns are classified; in Burmese and Vietnamese there are large numbers of nouns which do not occur with a classifier. In Khmer classifiers are used in formal but not colloquial speech (cf. Jacob 1965, 145); the same thing happens in Thai with certain classifier constructions, cf. Haas (1942, 204).

4. Examples from Haas (1942). All examples are given in the orthography used in the source quoted.

So the label 'numeral classifier' is something of a misnomer, but it will serve to identify the type.

It has been suggested by Emeneau (1951, 93) and Greenberg (1972 7ff.), correctly I think, that in numeral classifier languages classifiers function as unit counters when they do not denote other quanta. Burling (1965, 252, 262) drew attention to the parallelism between the Burmese constructions

10.6) nwâ θôun káun 'cow three animal' = three cows

10.7) nwâ θôun shé 'cow three ten' = thirty cows

'Ten cows' can be either nwâ shé káun or nwâ ta shé 'cow one ten'.

This sort of parallel is not unique to Burmese, it occurs in Chinese, Japanese, and Ojibway to name but three other languages, and Greenberg (op. cit.) speculates that collections or amounts of 'ten', 'dozen', 'hundred', etc. are treated rather like collective nouns in many classifier languages, as indeed the latter two are in English. Greenberg cites the following parallels in Thai:

10.8) bûrî sǎŋ muan 'cigarette two stick' = two cigarettes

10.9) bûrî sǎŋ sǎŋ 'cigarette two pack' = two packs of cigarettes

10.10) bûrî sǎŋ lǎ 'cigarette two dozen' = two dozen cigarettes

Note the similarity between the literal and the free English translations in (10.9-10), which is of course missing in (10.8) although all three Thai constructions are parallel.⁵ Quite clearly the three classifiers

5. I have translated the Thai muan by 'stick' because in West African English, towards the Pidgin end of the spectrum, I have heard stick used as a unit counter for cigarettes, e.g. in a phrase like two sticks of cigarette (cigarettes are sold individually by street and market traders).

are 'counters', muan being the unit counter. At this point it might be useful to recall example (10.1):

10.1) khru' lâ·j khon 'teacher three person' = three teachers

Compare this with the English phrase

10.11) three members of the jury.

"Members" is the English unit counter for, amongst many other things, most collections of human beings: in fact it might be both more realistic and revealing to translate (10.9) as 'three members of the teaching profession'. Like Thai classifiers and, indeed, classifiers in all types of classifier languages, English unit counters vary with the associated nouns, cf. head of cattle, piece of cake, grain of sugar, etc.; and like classifiers they denote some characteristic possessed by the denotatum of the noun they occur with; furthermore they can be used without the noun when its reference is either understood or unnecessary in the situation of utterance, cf.

10.12) The jury is nicely balanced, five members are women.

10.13) That member [+ paralinguistic indication of referent] is debarred.⁶

Unit counters in English are used only with uncountable NP, and pluralia tantum nouns, and it is only the unit counters that show a variation in grammatical number; Greenberg (loc. cit.) points to the parallel in classifier languages: if grammatical number (singular, dual, paucal, plural) is marked at all on classifier constructions it is usually marked on or by the classifier and not on the noun, which has the characteristic of a mass, collective or uncountable noun. But in Yucatec the plural is

6. This comparison has explicatory function and cannot be pushed too far. We can speak of 'members of the human race' but to talk of 'this' or 'that member' would be very odd.

optionally marked on the noun in classifier constructions, cf.

10.14) oš^v tul maak 'three animate person' = three people

10.15) oš^v tul maakooob 'three animate persons' = three people

And in Algonquian the plural is obligatorily marked where the classifier counts discrete objects but is absent where the translation into English is a partitive expression, cf.

10.16) nīšw-āttik kīšikkak 'two-sticklike cedars' = {two cedars
two cedar poles

10.17) nīšw-āttik kīšikk 'two-sticklike cedar' = two pieces of cedar

From (10.16-17) it seems that Algonquian instantiates a system of unitising intermediate between the type found in English and the type exemplified in Thai. When counting in English there are nouns, or rather NP, which require unit counters, and others (countables) which do not. In Algonquian the two kinds of noun exist but both require unit counters (except for those nouns which are not classified, cf. Denny 1975, 3). In Thai there is only one type of noun in so far as no quantified nouns inflect for plural, but unit counters are usually necessary.

CONCORDIAL CLASSIFIER LANGUAGES

Concordial classifier languages are those in which classifying formatives are affixed (usually prefixed) to nouns, their modifiers, predicates and proforms. Many African (Bantu and Semi-Bantu) and Australian languages are of this type. E.g.

10.18) basika bantu bobile⁷ 'ba+have+arrived ba+man ba+two' =
two men have arrived

"ba" is the plural human classifier.

7. Tonga, cf. Collins (1962).

- 10.19) Visu vidogo viwili hivi ambavyo nilivinunua ni vikali sana⁸
 'vi+knife vi+small vi+two vi+this vi+which I+bought+vi
 are vi+sharp very' =
 these two small knives which I bought are very sharp

"vi" is the plural inanimate object classifier.

- 10.20) bedjin bugala bune:wur bramarimari waral bunana⁹
 'b+man b+that b+big b+went+away I+saw b+him' =
 that man who went away, I saw him

"b" is the classifier for males.

There is more than a little controversy over the status of the Bantu languages as classifier languages, and there must be some equivocation over the inclusion of concordial classifier languages as true classifier languages. This problem is taken up (and, hopefully, dismissed) below.

PREDICATE CLASSIFIER LANGUAGES

The third type of classifier language is the predicate classifier type. Hoijer (1945) drew attention to the fact that Navaho verbs of motion/location consist of a theme such as give or lie and a stem which varies according to certain discernible characteristics of the "object or objects conceived as participating in an event whether as actor or goal" (op.cit. 13). E.g.

- 10.21) béésò sì ǰá 'money lie-perfect+of+round+entity' =
 a coin is lying (there)
- 10.22) béésò sì níl 'money lie-perfect+of+collection' =
 some money (small change) is lying (there)

8. Swahili, cf. Wilson (1970)

9. Gwi:ni, cf. Capell (1940)

- 10.23) béésò sî -ltsòòz 'money lie-perfect+of+flat+flexible+entity'
a note (bill) is lying (there)

Similar classificatory verb stems occur in other Athapaskan languages¹⁰ and the noun classes they identify correspond remarkably with those of numeral and concordial classifier languages.

Many North and Northwestern Australian languages are of the concordial classifier type, but one of them appears to have a separate set of predicate classifiers. Worsley (1954) shows that the primary classificatory prefixes of Enindiljaugwa (Andiljaugwa in Capell 1942, Andiljaugwa in Wurm 1972) are of the concordial type, but in addition there are optional secondary prefixes¹¹ totally unconnected with the primary prefixes, that may occur both with verbs where there is noun incorporation, and with adjectives. These secondary prefixes are much more like the American and Oriental classifiers than the primary concordial prefixes are. Unfortunately I have been unable to find reference to these predicate classifiers anywhere but in Worsley's paper, Worsley (1954, 284) suggests that they may be dying out; it would be interesting to know more.

10. Cf. Davidson et al. (1963), Landar (1964, 1965), Krauss (1968). Athapaskan languages are spoken in Western North America.

The classificatory stem apparently consists of two morphemes, one aspectual, the other classificatory, e.g.

Aspect	general & round	animate	set	mass
imperfect momentaneous	ʔaah	thyeeh	nííʔ	tʔááh
imperfect continuative	ʔáh	thyé	tʔaah	tʔaah
perfect	ʔá	thí	nil	tʔaaʔ
progressive	ʔááʔ	thyééʔ	niʔ	tʔih
iterative	ʔááh	thyééh	niʔ	tʔih
optative	ʔááʔ	thyééʔ	nííʔ	tʔááh

From Landar 1965, 330).

11. Worsley's term, but actually infixes.

INTRA-LOCATIVE CLASSIFIER LANGUAGES

Intra-locative classifier languages are those in which noun classifiers are embedded in some of the locative expressions which obligatorily accompany nouns in most environments. Only three languages of this type are known to me, but they come from completely separate families and it is possible that they may each be related to other languages of this type. Toba (cf. Denny 1976a), an Amerindian language, has a set of locative noun-prefixes for objects 'coming into view', 'going out of view', 'out of view' and 'in view'. The first three are non-classificatory, but for objects in view there are three prefixes which classify the accompanying nouns according to the arrangement and/or shape of their referents, viz. 'vertical (extended) object in view', 'horizontal (extended) object in view' and 'saliently three dimensional object in view'. The noun classes thus identified correspond to noun classes in other kinds of classifier languages. In Eskimo (cf. Denny 1976a) objects in view are classified as 'extended' (saliently long) or 'nonextended'; but the classifiers have no separate form, being expressed by morphemes that are syncretically locative: thus there are two morphemes for each of 'here', 'there', 'up there', 'down there' and 'out there' corresponding to the two noun classes. In Dyirbal (cf. Dixon 1972), a North East Australian language, there are four noun classifiers (one a null form) suffixed to the locative morphemes 'visible and here', 'visible and there' and 'not in view': Dyirbal is the only one of these languages to classify non-visible objects. The four noun classes have similar composition to those of other Australian classifier languages; a matter discussed below. The Dyirbal intra-locative classifiers appear in interrogative words (e.g. for 'what object?') and are used as demonstrative pronouns, cp. numeral classif-

-ier languages; Eskimo is similar in this respect, and very likely Toba too -- though I have too little data to confirm this.

CHARACTERISTICS OF CLASSIFIERS

I have said that Enindiljaugwa instantiates two types of classifier language, the concordial classifier type and the predicate classifier type. Friedrich (1970) purports to show that in Tarascan classifiers are found both in noun phrases and verbal groups; if this is correct, Tarascan is both a numeral classifier language and at the same time a predicate classifier language. But the evidence does not bear out this conclusion. There can be no doubt that Tarascan is a numeral classifier language because of the many quantifying constructions on the pattern of

10.24) $\text{ɕimá-ni } i\check{c}úhku \text{ } i\check{c}úskuta$ 'two flat tortillas' = two tortillas

10.25) $\text{ɕimá-ni } i\check{c}úhku$ 'two flat' = two (of them) [flat entities]

In addition there are verbs which occur only with nouns of a particular class; for example verbs meaning 'be fat, thick' are tepá- if the entity they predicate is in the long (saliently one dimensional) class, tayá- if it is in the flat (saliently two dimensional) class, poré- or toyó- if it is in the round (saliently three dimensional) class. In the sentence

10.26) $imá \text{ } \text{ɕimá-ni } i\check{c}áhku \text{ } \check{c}kárri\check{c}ani \text{ } ekuá\text{-}kuáparatastksí$

'they two long logs piled+up+long+things+by+the+wall' =

they piled two logs by the wall

the verb ekuá- 'pile up long things' contrasts with takú- 'pile up flat things' and the latter could not be used in (10.26).

Thus the shape characteristics of referents which are identified by numeral classifiers are, not unexpectedly, relevant in some noun-verb

collocations in Tarascan whereas English, for instance, has no identical constraints. But the co-occurrence of the Tarascan verbs with particular classes of nouns is not marked by any set of formatives in the verbal group which can be seen to classify those nouns in a comparable way to Athapaskan classificatory stems. Instead, noun-verb collocation in Tarascan is conditioned by covert co-occurrence constraints of the kind familiar in English. Although there is no exact parallel in English what I have in mind is, for example, that the verb eat 'ingest solids' contrasts with the verb drink 'ingest liquids' so as to classify the object eaten as solid, where drink classifies the stuff drunk as liquid. Or take the verb admire, which classifies the admirer as animate and usually human:

- 10.27) John admires sincerity.
 10.28) At least something admires John.
 10.29) *Sincerity admires John.

If (10.28) seems odd it is because "something" is classified by "admires" as animate, and we would expect the NP to refer to a human being; but it doesn't, and so it has to refer to an animal. This deduction seems to me no less certain than the classification of béésò in (10.21-23) above, or "tət'e" in the Dogrib sentences¹²

- 10.30) tət'e niyeh-2a 'bread I+pick+up-(aspect)+of+round+entity'
 = I pick up a loaf of bread
 10.31) tət'e niyeh-tšì 'bread I+pick+up-(aspect)+of+flat+flexible
 +entity' = I pick up a slice of bread

The relevant difference between the Athapaskan and the English verbal groups is the inclusion of a classificatory stem in Athapaskan (e.g.

12. From Davidson et al. (1963).

Navaho ʔá, thá, thí, nil, khá, ʔ sooz, ʔóót, ʔooʔ, tʔaaʔ, tʔool, lá, tiéé? -- exemplified in the perfect aspect) as a surface marker for noun classification which has no compeer in English, nor indeed in Tarascan. Therefore neither English nor Tarascan are predicate classifier languages. More generally, if a language has noun classes entailed by co-occurrence constraints between nouns and their modifiers or predicates, this does not make it a classifier language; if it did, every language would be a classifier language, and the label would become meaningless.

There are three ways of deciding whether or not classifiers have meaning i.e. denote perceived or imputed characteristics of the entity (or entities) to which the associated noun refers. One is to use native speaker intuition (cited, for instance, by Friedrich 1970); a second is to use a foreign observer's intuition about the composition of the noun classes revealed by classifiers; the third is to introduce new words and objects to a number of native speakers and see what classifiers they use with them. Any of these methods will reveal that for the most part classifiers do have meaning. There is no doubt about the consistency with which native speakers of classifier languages assign new loanwords to a class. The phonological form of the word may predispose it for inclusion in one or another class to avoid confusion; but if this is not the explanation for a classification, and if loanwords are not all lumped into one class (as they tend to be in Tiv, for example, cf. Arnott 1967, 67), then a semantic basis for classification is to be expected. The strongest evidence of semantic classification is the ability of native speakers to classify new objects consistently and without difficulty on the basis of their observed characteristics; this ability is vouched for in such diverse languages as Burmese, a numeral classifier language (Burling 1965, 249), Dyirbal, an Australian intra-locative classifier language (Dixon 1968, 119f.), Fula, a West African concordial

classifier language (Arnott 1967, 54f.) and Navaho, an American predicate classifier language (Ervin & Landar 1963, 51; Carrol & Casagrande 1959, 27). In the simplest case a noun is classified on the basis of some characteristic shared by its referents. Such a characteristic may be culture free and obvious to any human being, or it may be culture bound, for example women are sometimes classified with animals (and separate from men) in Kiriwina (Malinowski 1920). The classification of mythical entities can depend on their imputed status within the culture: in Burmese, the Bhudda and associated icons are in a different class from ghosts and ogres, which are classified with animals (Burling 1965). In Dyirbal most birds are classified with women because in the people's mythology they are the reincarnation of women; but other birds are classified with men, again because of their mythological status (cf. Dixon 1968).

If classifiers were meaningless the use of different classifiers with the same noun would have no semantic effect; but in fact it does, and different classifiers are used with the same noun (or noun stem) both in normal straightforward discourse and also in verbal play to focus on different characteristics, or imputed characteristics, of the referent, cf. (10.21-23) above, Denny (1976b), Friedrich (1970), Johnston (1922, 514), Landar (1965) and Sapir (1932). No such thing is possible with European gender which does not classify inanimate objects according to perceived or imputed characteristics¹³, although it does

13. When continental European languages borrow nouns from English there is a problem of assigning them to a gender. Occasionally, though very rarely, this is done because of phonological similarity with an existing word. In Germanic languages the neuter tends to be used, followed by the masculine; among German academics, some say das Handout and some der Handout. Alternatively the gender of a near translation equivalent is given to the loanword. In French, English nouns become masculine unless they refer to females. Thus there is no real semantic basis for gender assignment in European languages, though a tendency towards it is revealed by the maintenance of gender for semantically similar nouns. It is true too that slang words tend to have the same gender as their standard equivalents.

for the most part reflect the sexual differentiation of human beings and higher animals. But there are only a few nouns in continental European languages that can take more than one gender in order to distinguish different sexual reference; there is, for example, Italian il ragazzo, la ragazza, French un élève, une élève, Slav surnames in -ski, -ska. But this sort of thing is exceptional and by no means the rule; and there are just as many examples where the gender of the noun is inappropriate to the sex of the referent, cf. French le professeur, elle est en classe, or cet animal de femme, etc. Although the German feminine noun Magd reflects the sex of the maid it refers to, the addition of the diminutive suffix creates a neuter noun Mädchen: I think it is significant that in a European language the characteristics of the referent are less influential than the syntactic reflex of a diminutive suffix. By and large European gender is semantically empty, and the gender morphemes of European languages are not classifiers in the sense in which I have been using the word.

It was remarked earlier that there is more than a little controversy over the status of Bantu languages as classifier languages. The great Bantu scholar Guthrie (1948a, 1948b) would not allow that what he pointedly called 'genders' had any semantic basis at all. This point of view is not shared by Denny (1976a, 1976b), Denny & Creider (1975), Johnston (1919, 1922), Werner (1919) or Worsley (1954). There is evidence to support either point of view. For example Arnott (1967) compares noun classes in Tiv and Fula showing that whereas there are semantic groupings in Fula, though by no means only one to each classifier, the Tiv noun classes are extremely heterogeneous in content and little short of being semantically arbitrary¹⁴. Most Bantu languages are more

14. Abrahams (1940, 7) says that Tiv noun classes may be phonologically but not semantically apprehended.

like Fula than Tiv, which can perhaps be thought of as a limiting case. If the papers from the Aix-en-Provence conference on African noun classes are examined (CNRS 1967) it will be found that noun classes are nearly always exemplified by a set of semantically homogeneous words, thus substantiating the view that Bantu and Semi-Bantu classifiers do have meaning; however, some participants in the conference seem very loath to accept such a principle (see, for example, Richardson 1967, 378) and close examination of the data proves that classifiers in African languages are typically more polysemous than Oriental or Amerindian classifiers, and there is a good deal of semantic overlap, particularly between the inanimate object classes 5/6, 7/8, 9/10.

The fact that the classifiers in these languages range over some pretty heterogeneous classes undermines the universalist claim that classifiers can be identified by the semantic characteristics of the class of nouns in their domain. To save the day it is possible to postulate that semantically identifiable classifiers can be discerned in concordial classifier languages; but it often turns out that semantically distinct classes have homophonous classifier forms. Consider for example the Fula classifier ki.

"KI. Trees

Bladed instruments (knife, razor, sword).

Also grass-shelter, armpit, life."

(Quoted from Arnott 1967, 66)

There would seem to be three classes here, and thus three covert classifiers with homophonous realisations. The class of trees and the class of bladed instruments both have a component of length (salient one dimensionality). In European culture life might well be associated

with trees, but this is not necessarily so for the Fulani. Grass shelters and armpits clearly have something in common, but seem to be quite distinct from the other two classes, although there are various possible connections between the former and trees: both give shelter, both are vegetal, and grass is saliently one dimensional -- although this is not a characteristic of the grass shelter. The problems of analysing Fula ki are fairly typical of concordial classifiers; but the principle that classifiers have meaning can be seen to be tenable for them. The least one can do is to conclude (with Worsley 1954) that Bantu noun classes are by no means devoid of semantic significance.

of

Much the same can be said/the classifying primary prefixes in Australian languages: unless the kind of culture bound explanation of noun class composition that Dixon gives for Dyirbal can be extended to other languages, one can only speak of a semantic bias in Australian noun classes and not honestly of a semantic basis. To savour the problem consider the fact that animal nouns are distributed among five classes in Enindiljaugwa's primary prefix system, the percentages for each class being 19%, 18%, 23%, 33% and 7% (data from Worsley). Yet according to Dixon (1968) Dyirbal classifiers are semantically based; and since Dyirbal noun classes seem to have much the same heterogeneous composition as the noun classes of other Australian languages, despite its being of a different type of classifier language, one might hazard a guess that Dixon's claim can be generalised. So the facts are equivocal for and against the semantic basis of Australian classifiers, much as they are for classifiers in African languages. Because African and Australian languages compose the sum of concordial classifier languages known to me, I conclude that if classifiers in concordial

classifier languages are not devoid of any semantic significance, they do not seem to have much either.

ASSIGNMENT OF NOUNS TO CLASSES

The relationship between noun and classifier in classifier languages is typically explicable but not always predictable without extensive knowledge of the relevant language. However it is not unusual for a noun class to include a number of members which have apparently been arbitrarily assigned to it, although a rational explanation might turn out to be available to the industrious scholar. Many people have pointed out that one class in fact falls into another. For example there are many languages in which most animals fall into one class, but certain animals are assigned to another, e.g. Navaho 'frog', Tarascan 'walking stick insect', or Thai 'elephant'. The facility with which the characteristics of entities within a given class can be discerned varies from the straightforward to the impossible, both interlingually and intralingually (cf. Krauss 1968, 195). Most classifier languages (about a third of Adams & Conklin's (1973) sample of Asian languages) have a residual class of inanimate objects some or all of which are not assigned to one of the nameable classes, e.g. the khù class in Burmese, the 9/10 class in many East African languages (though this is also the 'animal' class), the e2n class in Yurok. Burling (1965, 261) writes

"Burmese speakers readily advise the learner of the language to use khù when in doubt, and I have heard children use khù in situations in which an adult would probably use a more precise classifier."

Whether the same holds for the residual class in other languages I don't know. Haas's (1942, 201) suggestion that the foreign learner of Thai

should learn the classifier along with the noun (which she compares to learning the gender of French nouns) has some pedagogical value, but it ignores the fact that nouns often occur with more than one classifier (Burling makes great play of this). The system is clearly not too rigid, or verbal play with classifiers would be impossible, and a competent native speaker would have more difficulty classifying objects than he appears in fact to do.

Some classifiers in some classifier languages are uniquely associated with particular nouns and can be said to have identical denotation with them: for example Thai ch^hyag uniquely classifies elephants such that in the phrase X sⁱ· ch^hyag "X" can only be replaced by the noun ch^həŋ?, whereas for example in Y sⁱ· tua "Y" can be substituted by any animal name except ch^həŋ?. Comparable with ch^hyag are the Fula classifier kol 'calf', Kiriwina sa 'bunches of betel nut' and all the repeaters like Burmese qéin 'house'. It is rather puzzling that unique classifiers should exist because they reduplicate in full the information carried by the associated noun, and I think that one or both of the following explanations may account for their existence. (i) The information is worth duplicating because of its significance: I am no social anthropologist, but this strikes me as a possible explanation for the Fula, Kiriwina and Thai examples because the objects denoted are prized possessions in the respective speech communities. (ii) Perhaps the noun and its classifier were originally borrowed from some other language and have maintained their relationship separately from native classes; or, alternatively, the class may once have been larger but in the course of time all the other nouns have dropped out of use or been reclassified.

However, neither explanation is helpful with Burmese repeaters,

where (from a syntactic viewpoint) the noun is copied into the empty classifier slot causing its repetition in the quantifying phrase (cf. Denny 1975); but why just a few nouns should be classified in this way mystifies me. To add sauce to the mystery most Burmese repeaters (and those of other Oriental languages) seem to have a salient locative component, and refer to topographical features, villages and states, etc.

Most classifiers denote some such salient characteristic of the associated noun: for example Thai khon and its translation (near) equivalents in many languages denote 'people' and classify nouns for 'men, women, teachers, farmers, labourers, etc.'. Not only natural taxonomic superordinates like 'people' or 'animals' but characteristics like shape, size and consistency are also bases for classification. Thus in many languages there is a classifier for round or saliently three dimensional objects, e.g. louñ in Burmese, kway in Kiriwina, ʔá in Navaho, qim̄ in Nootka or ira in Tarascan. It often happens that a noun may be used with different classifiers either to deliberately focus on some characteristic of its referent, or simply because the referent happens to bear characteristics that are compatible with more than one classification: for example ribbon is characteristically both long and flat and may be classified as either in Tarascan (cf. Friedrich 1970, 385) and no doubt in other languages too. Worms are animals and have a distinctively ropelike shape, in Yurok they may be classified either way (cf. Haas 1967, 359). In Kiriwina tree branches are usually classified by kay, but for special focus on a forked branch the classifier lila is used (cf. Malinowski 1920, 55). In Navaho the noun béésò denotes 'money' but may be differently classified to refer to a coin, to small change, or to a note (bill), cf. (10.21-23) above. A river may be differently classified in Burmese to refer to a line on a map, a

path to the sea, a connection between two points, and just a thing (cf. Becker 1975). Similar distinctions can be made in Yurok where ci·sep' refers to 'flowerbush' when classified by ek'wo?n, but 'flower' when classified by oh. In Luganda, the stem -ganda can be classified by lu- to refer to the language, by mu- to refer to a single person, ba- to refer to Ganda people, bu- to refer to the Ganda country, and ki- to refer to their culture.

The speaker's particular requirements in conveying his meaning and/or gaining a special effect may lead him to use an unusual classification, ranking somewhere on a scale between dead metaphor and innovation. For example diminutive classifiers can be used in Bantu languages and Japanese, in place of the normal human classifier, to express either affection or contempt; diminutives, of course, may have a similar function in many languages including non-classifier languages like German and Italian. Classifiers are occasionally vehicles for verbal play (including verbal abuse) and figures of speech. Thus in Japanese there is the possibility of abusive classification of human beings by both the animal classifier and the general inanimate classifier; no doubt many other languages are similar in this respect. Tall people can be reclassified by one of the long classifiers in Bantu (Johnston 1922, 514), Japanese, and Yucatec; again, in Yucatec and also Tarascan (Friedrich, 1970), women may be jokingly referred to as round objects. David Arnott has kindly shown me a children's riddle in Fula where the clues lie in the different classifiers. Sapir (1932) notes two instances of punning in Navaho which hinge on reclassification; and Landar (1965) notes what is possibly a case of metonymy, where a classifier appropriate to a bag containing nails was used instead of the classifier for the nails themselves. Again, Friedrich (1970, 386) cites the innovative classification of a Volkswagen Beetle as a round

object in Tarascan where cars are normally classified as long objects (reasonably if you consider the salient shape of American cars over the last fifty years); he also notes an instance of the long classifier used for asses' ears, when ears are normally classified as flat: it is easy to see the motivation for the reclassification in these cases and quite obvious that the classification is dependent on salient and inherent characteristics of the referent rather than being a simple reflex of the noun or its denotation. But the speaker of Tarascan is not unrestricted in his use of classifiers; for example, fruits, seeds, and beans are usually classified as round (saliently three dimensional) but bananas are classified as long (saliently unidimensional), which seems reasonable; yet the Mexican broadbean is not classified as flat despite its being saliently two dimensional and there being an appropriate classifier available. A similar convention applies to bananas in Garo, a Sino-Tibetan language, where bananas are included in the round class along with other fruit (cf. Adams & Conklin 1973, 2). This imposition of convention over perception must qualify any claim that noun classification freely operates according to the salient characteristic of the referent. It may be true that most noun classes have been established on a perceptual basis, but presumably most classification is fossilized by conventions that restrict innovation. There are for example well formedness conditions in Thai which restrict the use of the classifiers tua and chyag as exemplified in

- 10.32) nu· sî· tua 'snake four body' = four snakes
 10.33) chá·ŋ? sî· chyâg 'elephant four rope' = four elephants
 10.34) *nu· sî· chyâg 'snake four rope'
 10.35) *chá·ŋ? sî· tua 'elephant four body'

A foreigner with no competence in Thai might predict on perceptual grounds that 'rope' is a suitable classifier for 'snake', and 'body'

a suitable one for 'elephant': yet (10.34-35) violate well formedness conditions. If the translations of tua and chyag are not misleading- this is an example of linguistic convention disposing of an ambiguity in the matching of classifiers with nouns. I conclude that there are some nouns that are by convention variably classified as a result of the intrinsic characteristics of their denotata, and other nouns that may be reclassified in certain situations of utterance which will only be defined by analysis of the pragmatic rules for each language; so far as I can see the constraints on innovation will not be discovered until such analyses are undertaken.

CATEGORIES OF CLASSIFICATION

Languages vary considerably in the number of classifiers they have, but seven categories of classification can be identified: (i) material, (ii) shape, (iii) consistency, (iv) size, (v) location, (vi) arrangement, (vii) quanta. The first five are either rare or nonexistent in languages like English, which have not hitherto been regarded as classifier languages, but it is probable that all languages have arrangement and quanta classifiers. The seven categories intermesh and many classifiers combine two or more of them and so are subject to componential analysis in terms of these categories and their various subcategories.

The material category is instantiated by all classifiers which typically refer to the essence of entities referred to by nouns; it has subcategories 'animate', 'inanimate', and one for the classifiers of verbal and abstract nouns. (The label 'material' is not altogether appropriate but to talk of an 'essential category of classification' seems to me far more misleading.) The shape category has the dimensional subcategories 'saliently one dimensional', 'saliently two dimensional'

and 'saliently three dimensional'; and the nondimensional subcategories 'prominent curved exterior', 'hollow' and 'anular'. It frequently combines with the consistency and/or size category in classifiers like 'fabriclike', 'seedlike', 'sticklike', etc. The third category of classification is consistency with the subcategories 'flexible', 'rigid' and 'non-discrete'. The first two nearly always combine with the shape and sometimes the size category, and only the non-discrete subcategory normally occurs alone, in classifiers for amorphous substances and aggregates. Size has the subcategories 'big' and 'small', and it frequently occurs with the shape and less often the consistency category, only occurring alone in classifiers in African languages.

Many classifiers are labelled by material names like 'sticklike', 'fabriclike', 'planklike', 'stonelike', 'bushlike', 'seedlike', etc. And it seems likely that the original criterion for noun classification was material, but as the application of the classifier was extended from identical to similar entities (cf. the suffix -like on all these labels) the material connection weakened in significance to be superseded by the configurational parameters of shape, consistency, and size, implicit in the paradigm constituents of the class. It follows that the smaller the number of classifiers in a language the more likely they are to be configurational instead of material. (The assumption here that classes tend to broaden rather than narrow gains some support from the reports of Greenberg (1972, 33) and others that in at least some Oriental languages there has been a shift towards general classifiers, particularly in popular speech.) The move from material criteria to classification by shape is justified by perception psychology, cf.

"The visual field never appears as an undifferentiated pattern of light, shade, and colour. It is broken up into discrete entities or shapes; these whenever possible become categorised as objects,

but when this proves impossible, they are classified in terms of their shape or form." (Vernon 1954, 16)

Although this refers to the recognition of particular entities, parallel preferences presumably exist in recognising the extension of classes; and surely shape would not necessarily be the only classificatory criterion under such circumstances, but recourse might also be had to consistency and size. Thus it would seem that the configurational categories derive from the material category.

The first four categories of classification, i.e. the material and configurational categories, all refer to the salient inherent characteristics of entities as perceived or imputed in them by the speaker (at least, when he is conscious of classifying). The same is true for some, but not all instances of the fifth category of classification, location. Yucatec, Kiriwina, Burmese, Thai, Nùng and Vietnamese all have classifiers for plots of land; and most Oriental languages have a number of separate classifiers for countries, gardens, fields, villages, staircases, and other saliently and inherently locative nouns. Both Enindiljaugwa and Kiriwina have classifiers for the compartments of a canoe, and there are inherent locational characteristics to some arrangement and quanta classifiers. There are locative prefixes in Bantu languages with corresponding concordial particles, forming a system exactly similar to other concordial classifiers in those languages, which are the only instances of this category manifest alone in classifiers; what is more, they are split into an inherent state pa- classifier (class 15) which is roughly akin to English noun place, and the contingent location classifiers (classes 17 and 18) which correspond to English prepositions and identify the roles of the

referents of associated noun.¹⁵

The last two categories of classification, the arrangement and quanta categories, do not classify entities according to their inherent characteristics. Because these are the categories found in every language, it would seem that what defines a typical classifier language such as Thai, from an atypical one like English, is the possession of a large number of inherent state classifiers.

The sixth category of classification is that of arrangement; it categorises classifiers of three kinds. Firstly there are the classifiers which identify an object or objects in some specific and non-inherent configuration (thus involving the categories of shape, size, and consistency). Some examples of this subcategory are the Burmese classifiers for 'pleats' and for 'folds'; the Kiriwina classifier for a 'twisted off piece', and there are a number of Tzeltal classifiers listed by Berlin (1968) such as

10.36) ʔa2b'ehc' laso 'two loop rope' = two loops of rope

10.37) ʔa2soht laso 'two coil rope' = two coils of rope

Notice that the two English nouns loops and coils have the same function as the Tzeltal classifiers: in other words they too are classifiers; and being nouns they may occur as heads to constructions which modify, and may severely restrict, the class of potential referents: consider examples like

10.38) two large loops of rope

15. The location category is not necessarily entailed in classifiers of intralocative classifier languages; rather the contrary: because classifiers are embedded in the locative system they cannot themselves be locative, thus locative nouns in Dyirbal do not take classifiers, cf. Dixon (1972, 57). The only trace of the location category in the three intra-locative classifier languages so far identified is as a minor component of the Toba arrangement classifiers.

10.39) two seven inch in diameter half twisted loops of rope

10.40) forty-nine polished and framed arabesques of cedarwood

The length of classifier constructions of this type in English is only bound by pragmatic constraints on utterance length, and thus in principle there is an unbounded number of arrangement classifiers in English. If classifier languages like Tzeltal permit modifications of arrangement classifiers along the same lines as English, the same must be true for them too.

The evidence from English, Tzeltal, and Kiriwina is that verbs are a productive source for this subcategory of arrangement classifiers, cf. English pleat, fold, twist, coil, loop, curl, etc.

Secondly, the arrangement category comprehends those classifiers which identify an object or set of objects in a specific position, thus intersecting with the category of location (with a minor function here). In this subcategory are found the Toba classifiers for 'an extended perpendicular object' and 'extended horizontal object'; the Ojibway and Navaho classifiers for 'objects in parallel'; and the Thai and Kiriwina classifiers for 'objects in a row'; etc.

Finally, the arrangement category intersects with the quanta category in a subsidiary capacity to turn up in those classifiers which identify objects in some kind of specific noninherent distribution; I am thinking of classifiers like 'heap', 'clump', 'bunch', 'herd', etc.

Semantic relations between arrangement classifiers and inherent state classifiers vary from the predictable, e.g. between 'pleat' and 'saliently two dimensional and flexible', to the totally diverse: e.g. 'in a row' will occur with virtually any common noun.

This brings me to the seventh and last category of classification,

quanta. A very large number of classifiers fall into this category, which has nearly a dozen subcategories. One is the subcategory of grammatical number, which applies only to concordial and predicate classifier languages. Many North Australian languages have separate morphological classifier forms for singular, dual, and plural nouns from the predominantly male and female classes. Typically, Bantu and Semi-Bantu languages have five or six pairs of morphologically distinct prefixes classifying virtually identical sets of entities, one form for a single entity, the other for a number of them; one of the latter, class 6, also has a collective-cum-uncountable sense and classifies non-discrete substances. Athapaskan (predicate classifier) languages mostly¹⁶ have one plural classifier for all collections of entities regardless of their singleton class; they also have a classifier for mass nouns and another for (?arranged) collections, which falls into the collection subcategory (see below). Intra-locative classifier languages have no quanta classifiers at all. Numeral classifier languages have either no quanta classifiers, e.g. Tarascan and Yurok, or they have a much larger set of quanta classifiers than other kinds of classifier languages -- doubtless as a result of the special relationship between quantification and classification that gives rise to their typological label.

There is a subcategory of collection classifiers some of which combine with the arrangement category (as pointed out above), e.g. 'bunch', 'cluster', 'crowd', 'herd', 'pair', etc. Others combine with the volume subcategory, e.g. "basketful", "handful" and "stalk" in the following constructions: a basketful of chickens, a handful of rice,

16. Western Apache has three, cf. Basso (1968).

a stalk of bananas. There is a subcategory of instance classifiers 'kind of', 'sort of', etc. A subcategory of partitives which includes 'piece of', 'quarter of', 'head of', 'sheet of', and in many Oriental languages 'one of a pair'. There are also the number names like ten, dozen, hundred, thousand, etc. which sometimes replace other classifiers, and sometimes co-occur with them. Finally, there are the measure subcategories of dimension, volume, weight, and time.

Not surprisingly, measurements based on universal human properties and experience recur in many languages. Dimension and volume can be computed against the human body to give 'foot' (length), 'handspan', 'cubit', 'fathom' or 'armspan'; 'armful', 'handful', 'mouthful', and so on. The only weights that recur regularly are those adopted from standard European terms: Mayan languages, however, use 'shoulder load' and 'hand load', which have echoes in Burmese. Cyclic time expressions for day, month, year, and the like turn up in almost every language.

The seven categories of classification range over all the predictable bases for noun classification with the exception of colour. The fact that there is not a single colour classifier in any language is very surprising because social psychologists have presented ample evidence that human beings from very different cultures spontaneously use colour, in experimental situations, to group objects and the linguistic expressions that refer to them, cf. Bruner, Olver, and Greenfield (1966), Carroll & Casagrande (1959), Corah (1964), Gay & Cole (1967), Lenneberg (1953), Lloyd (1973), Serpell (1969), Suchman (1966), Suchman & Trabasso (1966). What makes it even more puzzling is that grouping by colour is said to be ontogenetically prior to grouping by shape.¹⁷

17. But the only experimental evidence I have found reported shows that shape is significant earlier than colour. Gibson (1969, 385-6) describes an experiment by T.G.R. Bower in which infants of 70, 98 and 126 days old were tested for their reactions to (i) a disappearing object; (ii) an object which disappeared but then reappeared with changed shape but the same colour; (iii) an object which disappeared

And perhaps more pertinent is the fact that colour is a salient characteristic of many entities including the omnipresent sky and vegetation. As a characteristic of objects it is neither more nor less arbitrary than size, shape, or consistency; and although the boundaries of colour terms are notoriously difficult to define, the subdivisions of size, shape and consistency have almost equally imprecise boundaries. There is no other salient characteristic of a range of entities which fails to be represented by one of the categories of classification: neither smell, taste, nor sound¹⁸, for example, seem to me surprising omissions. Is there any explanation for the absence of colour classifiers? There are two disadvantages to colour as a category of classification. Firstly, colours vary with the ambient lighting, and in the dark become muted and even indeterminable, so that classification by colour would only be effective part-time. Secondly, consider that pictograms use shape but never colour to convey their meaning (though colour may be used as an embellishment), and that black-and-white drawings and photographs which represent the shape but not the colour of their subject, detract but little from their recognisibility; a shapeless blotch of colour, on the

(17 continued). but then reappeared with the same shape but a different colour. The youngest infants were startled only by (i); the middle group by (i) and (ii), and the oldest group by (i), (ii) and (iii) -- which would seem to show that a change in shape is recognised earlier than a change in colour.

18. Readers familiar with Berlin (1968) might doubt this claim, but the sound classifiers which Berlin finds in Tzeltal are, like so many of his 'classifiers', rather different from the kind of classifiers discussed hitherto. There is no classifier for sounds in general, or for loud or soft sounds, wooden or metallic sounds, except for the equivalents of certain English nouns such as for example: ɬan 'sound emitted from blows on metal objects' English clang; ɬin 'sounds emitted from vibrating object (e.g. bell) due to blows' English ting; p'iʔ 'flatulation' English burp; pihp 'sounds of horn or trumpet' English beep; p'oht 'sounds of popping corn, cracking cinders in fire, etc. English pop; cf. Berlin (1968, 171). The onomatopoeic Tzeltal lexemes, like their English equivalents, each denote a different kind of sound not further differentiated lexically. So far as I can tell these sound 'classifiers' do not primarily occur in constructions equivalent to two clanging kinds of sound and there is no evidence that either they or Berlin's 'action' classifiers are classifiers within the terms used here. I take it that the borderline cases between classifiers and nouns are 'repeaters' like Thai khon, tian, taw, etc.

other hand, does not directly portray any entity, and may only be understood to do so if accompanied by formal or verbal clues. Hence, on its own, colour would not make an effective category of classification, and in combination with, say, shape, it would still suffer spells of ineffectiveness because of the diurnal cycle.

It is no coincidence that the existing categories of classification closely correspond to what Locke (1689) called the "primary qualities of bodies": these he identified as solidity (my 'consistency'), extension (my 'shape' and 'size'), motion or rest (included in my 'material'), number (my 'quanta', and perhaps even the 'non-discrete' subcategory of 'consistency'), and figure (my 'shape'). Primary qualities are "utterly inseparable from the body in what estate soever it be" (Locke 1689, II. viii.9), but "secondary qualities" like colour, taste, smell and sound "in truth are nothing in the objects themselves, but powers to produce the various sensations in us" (op.cit. II.viii.10). Notably none of these secondary qualities is a category of classification in any language; we might therefore look to Locke's differentiation between primary and secondary qualities of bodies to reveal the essential feature of noun classification in classifier languages, because it should be identical with that which distinguishes the primary qualities of bodies. Locke (1689, II.iii.1) points out that whereas secondary qualities can be perceived by only one of the five senses, primary qualities are perceivable by more than one, and he names the senses of both sight and touch (op.cit. II.v). By and large it is the senses of both sight and touch which are involved in the perception of the characteristics of noun classes manifest in the seven categories of classification; but many of the noun classes included within the material category are abstract or otherwise non-manipulable (I have in mind classes for islands, villages, countries, etc.) but in such cases it is clear that the characteristics

of the class are not perceived by one sense alone, as for instance colour is. Hence the following universal constraint can be established:

The characteristics denoted by the categories of classification must be perceivable by more than one of the senses alone.

It is a constraint that embodies the proverb about putting eggs into one basket.

TYPES OF CLASSIFIER AND TYPES OF LANGUAGE

Many classifiers recur in all four types of classifier languages. Classifiers for animates, food, saliently one dimensional objects, saliently three dimensional objects, and for a residual class of general inanimates turn up in numeral, concordial, predicate and intra-locative classifier languages. And many other kinds of classifier recur in two or three types of classifier languages. Of the languages I have examined, classifiers for bladed or pointed objects, trees, and (humpshaped) objects with a prominent exterior curve, occur in numeral, concordial and predicate classifier languages; male and female classifiers are found in numeral, concordial, and intra-locative classifier languages. Classifiers for abstract or verbal nouns, and for implements, are found in both numeral and concordial classifier languages; those for boats, saliently two dimensional objects, and seedlike objects recur in both numeral and predicate classifier languages. It may be a consequence of the inadequacy of my sampling, but it would appear that there are no classifiers shared by predicate, concordial, and intra-locative classifier languages which are not also found in numeral classifier languages; the explanation may simply be that Oriental languages typically have many more classifiers than other classifier languages; but whatever the reason for it, the fact justifies the earlier historically

motivated description of numeral classifier languages as the paradigm type.

CONCLUSION

The recurrence of similar noun classes in many widely dispersed languages from separate families, spoken by disparate cultural groups, demonstrates the essential similarity of man's response to his environment. There can be no doubt that classifiers reflect perceptual groupings and that reclassification can be used to indicate the speaker's evaluation of what he perceives as unusual. To say that a classifier has meaning is to mean that it indicates the perceived characteristics of the entities which it classifies; in other words, classifiers are linguistic correlates to perception, and when the perception of a certain phenomenon changes, the classifier may change concomitantly; though there are constraints on the freedom with which this may come about. As we saw in Chapter 9 a similar correlation obtains between the perceived characteristics of phenomena and their representation through noun phrases that are either uncountable, singular, plural, or collectivised, and whose external concords can indicate either intensional or extensional reference. The k-principle involves the speaker in making judgements about appropriate forms on the basis of his perception of the salient characteristics of phenomena in just the same sort of way as the speaker using classifiers. The k-principle was postulated to explain the pragmatics of certain English NP forms, and I have not discussed its applicability to other languages, although *prima facie* its relevance extends beyond English. In the present chapter I have discussed the perceptual basis for classification in unrelated, and geographically separated, classifier languages from Africa, the Americas, Asia, and Oceania, which results in the universal recurrence of similar

noun classes.

That languages should classify entities along similar lines is not surprising if one takes the view that, between human beings, perceptions are generally similar and they stimulate a cognitive classification of the world which is reflected by linguistic categories and classes. It would appear, however, that some people, including proponents of the Whorfian hypothesis, do not take such a view. The recurrence of similar classifiers in all classifier languages apparently refutes, in a crucial area of language, a 'strong' interpretation of Benjamin Lee Whorf's (1956,221) claim that

"users of markedly different grammars are pointed by their grammars toward different types of observations and different evaluations of externally similar acts of observation, and hence are not equivalent as observers but must arrive at somewhat different views of the world."

Whorf's statement here may be given a 'weak' interpretation, namely that a language directs its speakers towards certain aspects of phenomena, but, because perception is independent of language, other aspects of the phenomena can be perceived and commented on if necessary by circumlocution. Alternatively his statement may be given a 'strong' interpretation, namely that perception is wholly constrained by language. On this interpretation it is a strange coincidence when speakers of two markedly different and unrelated languages end up having similar perceptions; and a fortiori, when the noun classes of classifier languages reveal that similar perceptions are shared by a wide range of people in many parts of the world, speaking unrelated languages, and even with differing kinds of classifier systems. The credibility of a 'strong' interpretation of the Whorfian hypothesis is thus utterly destroyed. It is the Whorfian hypothesis given a 'weak' interpretation,

which explains the conventions that control the processes of k-formation and classification; and I have already discussed some of the situations in which these conventions give way to reclassification on the basis of salient perceived characteristics of entities. Brown & Lenneberg (1959, 17) wrote

"In general it looks as if there is a potential for sensory discrimination characteristic of the whole human species. Language communities do not differ in this potential but rather in their manner of categorising potentially discriminable experience."

The comparison of classifiers in diverse languages shows that the manner in which language communities categorise sensory experiences is not so different after all.

SUMMARY REMARKS

I have discussed in turn the surface forms of singularity and plurality in English noun phrases, the deep structures from which these forms derive, and finally the kind of nonlinguistic stimulus which gives rise to the grammatical forms and processes described previously.

I adopted the thesis that deep structure consists of a set of semantic items mothered by category nodes such as N, Adj, QArt, and related to one another in syntactic structures composed by sets of well formedness conditions on node constituency and configuration. The category nodes in the configuration are directly dominated by bar-X nodes, if (and only if) bar-X is endocentric on X — the leftmost category node dominated by it. Either individual semantic items, or configurations of them, can be lexicalised. NP is a bar-N node, converted into NP under certain specified conditions.

The leftwing constituents of NP (of which were identified Articles, Num, Adjectives, and adnominal Nouns) are recursive predicates; each one ranging over all the constituents to its right up to and including the NP head. Because of the universal principle that an argument governs the kind of predications that can be made of it, the NP head must logically govern the well formedness of NP's leftwing. All leftwing constituents (except perhaps for the possessive pronoun) are directly generated, none being introduced by transformation. Here is the major difference between the left and the rightwing of NP: except for NP which are classifier constructions, all rightwing NP constituents are Swooped into the NP from clauses outside the host's mother S; this is what explains the different characteristics of prehead and posthead modification. Articles, quantifiers, definites, and specificity were

all examined in order to establish a model of NP grammar within which to discuss singularity and plurality.

The discussion of surface forms of singularity and plurality ended with a careful consideration of number concord relations. It was seen that NP-internal number discord is contradictory; but NP-external number can be pragmatically conditioned to differ from NP-internal number in order to indicate the abnormal perception of a plurality as a singular, a collection as an extension of its members, or — less frequently — an individual as the sum of its parts.

Turning to the deep grammar of number and countability, it was argued that the deep head of countable NP is the semantic item ONE for the singular, and ONES for the plural. ONE(S) is not found in uncountable NP, so its presence defines NP as countable. ONE(S) is usually Number Absorbed into its left sister noun during lexicalisation: but occasionally it surfaces as one(s)¹ - which has traditionally been described as a pronoun. It was because of the general inadequacy of attempts to introduce one(s) by Pronominalisation, and because there are instances of it that will in any case have to be directly generated, that I proposed one(s) should be directly generated (as ONE(S) in deep structure) on all occasions that it surfaces. But then, in order to state the necessary identity conditions between the NP containing one(s) and the NP governing it, ONE(S) has to be present in the deep structure of every potential governor: that is, every countable NP.

Some English classifiers have peculiar number characteristics, indicated by k-form plurals. It was discovered that these Classifier

1. Either because no Noun is predicated on ONE(S) in deep structure, or because the Noun has been deleted by the redundancy reduction transformation Onesing.

Nouns, as I called them, can head countable NP; and that ONE(S) is also a Classifier Noun - being the unit classifier in English. Thus, countableness is governed by a classifier in the deep structure of English NP; and a previously undiscovered similarity has been revealed between a language with grammatical number (English) and numeral classifier languages (such as Thai, or Yurok).

If countability is defined in the NP by the classifier ONE(S), it is clearly a feature of NP and not of nouns; and an interesting effect of my analysis is that the underlying form of the noun is the same whether it enters a countable or an uncountable NP. However, it is well known that nouns have different susceptibilities to the countability of the NP they head; and this was investigated in Chapter 7. Twelve grades of countableness were discovered in English nouns.

Having described the surface forms of singularity and plurality, the significance of concord, the characteristics of collective nouns, the countability of NP, and countability preference among nouns, our comprehensive survey of the grammar of singularity and plurality was almost complete.

In Part IV I turned to pragmatic considerations of the grammatical forms that had been discussed. It was noted that several interpretations are possible of NP like NP[lamb]: but that these interpretations cannot be accounted for in deep structure representations. Instead a set of pragmatic interpretation rules are postulated which take account of context and custom in order to assign referential interpretations to sentence constituents. No attempt was made to specify the number of such rules that might be necessary, nor define the terms to be used in them; but, in making linguistic descriptions, pragmatic interpretation rules are surely a necessary addition to grammatical

rules.

Turning specifically to the pragmatics of singularity and plurality, I examined the curious phenomenon of collectivising; where a plural NP is, on the surface, headed by a k-form noun.² It was argued that this only occurs where the reference of the NP consists of organisms perceived under certain conditions to be insignificant as individuals. It was then shown that there is a consistent correspondence between the grammatical forms of singularity and plurality, and the perceived characteristics of the reference labelled through the use of these forms. Thus, normally insignificant individuals are referred to en masse in uncountable NP and are not classified as units by ONE(S). Normally significant individuals are classified as units; but where, in a given context, they are insignificant, they may be Collectivised by the deletion of ONES from the underlying structure of the NP referring to them. (It is impossible to discover from English whether ONE is deleted from underlying NP structure under conditions appropriate to Collectivising, because the effect would not be marked in surface structure.) Collections can be perceived either intensionally or extensionally.

Finally, a detailed investigation of data on classifiers in many unrelated and geographically separated languages, showed that there are indeed regular correspondences between linguistic form and the perceived characteristics of phenomena; and that the correspondences are similar across languages. This confirms that the methods used earlier in describing the pragmatics of singularity and plurality in English are applicable to other linguistic data in other languages. And so the conclusions reached about the pragmatics of singularity and plurality are justified; and there is every reason to think they are correct.

2. This rounds off my study of the grammar of singularity and plurality.

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APPENDICES

Appendix A.

DENOTATION AND REFERENCE

Semantic relations are of two kinds: there are sense relations like implication, synonymy, or antonymy, which hold between one linguistic item and another linguistic item; and there are external relations that hold between linguistic items and nonlinguistic phenomena. Denotation and reference are the two kinds of external semantic relations. From the outset I will assume that neither denotation nor reference is limited to single lexical items and that constituents like NP and S also both denote and refer; it is conceivable that verbs and other predicates do the same. Presently I shall justify this assumption.

Take the sentence

A.1) My husband is the President of the United States.

Supposing this were to have been uttered in 1962 by Jackie Kennedy, wife of John Fitzgerald Kennedy, it would have been true. Were the same woman, but now Jackie Onassis, to have said the same thing in 1973, her statement would have been false. The statement is invariable, but its reference is bound by utterance conditions including variables such as the speaker, the time and place of utterance, and the spatio-temporal location of the nonlinguistic phenomena being referred to (either actually or under pretence). What is said can - and on most occasions will - be judged true or false in relation to nonlinguistic phenomena. I will symbolise a referring utterance by the formula

UC_i |referring utterance|

in which UC_i symbolises the identity of the conditions under which the

particular utterance is made: different conditions resulting in difference in reference will be indicated by a different subscript¹. For example a representation for (A.1) uttered by Jackie Kennedy in 1962 could be

A.2) UC_a | My husband is the President of the United States |
and uttered by Jackie Onassis in 1973

A.3) UC_b | My husband is the President of the United States |

Although the utterance conditions may change so that the reference of a linguistic item may alter, its denotation remains invariable.

(A.1) denotes the male spouse of any speaker, who is the chief executive of power in any organisation or body politic called the United States. This must give the impression that denotation is paraphrase: it is not. But representing denotation necessarily leads to tautology; for a simple example, to say cat denotes 'feline object' is to paraphrase, to say it denotes 'cat' is accurate, but obscure. The only way to avoid tautology is to duck out of formal representation of denotation altogether by saying something like "Cat denotes whatever it is you understand by that word." What is true of the denotation of cat is true of the denotation of (A.1), and so I prefer to represent its denotation accurately, but obscurely as (A.1) embraced by single quotes, thus

A.4) 'My husband is the President of the United States'

The denotation of a linguistic item is invariable because it is not applied by a speaker to any nonlinguistic phenomenon; in consequence

1. This is, of course, far too gross for a proper analysis of reference. For example, is reference to himself by Louis XIV in 1649 the same as reference to himself by Louis XIV in 1713? This is one of the many problems of reference that need not concern us. The present formula is sufficient to distinguish reference from denotation: which is its purpose.

there are no grounds on which to judge it true or false, happy or misapplied. Suppose that in 1630 Cardinal Richelieu said, inter alia,

A.5) UC_c |...|the present King of France ...|

No doubt he intended, and was understood, to refer to Louis XIII. And suppose Danny Cohn-Bendit has used the same form of words to an English reporter during les événements of 1968, viz.

A.6) UC_d |... the present King of France ...|

Either he would have been taken to misapply the expression the present King of France when he was intending to refer to the present (or rather current) President of France and presumably to say "the present President of France"; or more than likely, he was deliberately misapplying the title the present King of France satirically to Charles de Gaulle. In either case the NP makes at least some sense because the divergence between its denotation and its reference in (A.6) is slight. Suppose, however, that some speaker were to utter

A.7) UC_e |... the present King of France ...|

with intent to refer to the garden wall; he would almost certainly fail because he has broken all linguistic conventions, there being not even a metaphorical connection between the garden wall and the denotation

A.8) 'the present King of France'

(A.7) is nonsense. What we have seen in these last few examples is that the denotation of a linguistic item identifies the kind of characteristics one might expect to find in the reference to which it is applied; where this fails the linguistic item must have been misapplied to the reference. Thus evaluations of truth, falsehood, happiness, or misapplication arise. Such judgements of (A.5-7) in no way affect the

denotation of the NP quoted in these examples; in each one the denotation is invariably (A.8): it was in 1630, it is today, and it will be tomorrow.

A linguistic item can be uttered without intent to refer, and may be understood as nonreferring, but it will always denote either in whole or in parts. (A.8) is one example; but in addition almost all the linguistic examples in this thesis are nonreferring, yet denoting. Take the example of my uttering the nonreferring

A.9) The herd are grazing on the new grass.

No one can legitimately say to me in response to this any of

A.10) UC_q |Lot's of new grass, thanks to the rain. |

UC_r |Don't they look super? |

UC_s |That isn't a herd old boy, it's a flock! |

All such replies are nonsensical because they presuppose that in (A.9) I was referring to nonlinguistic phenomena, when I was not. There are legitimate responses to (A.9), of course: for example someone might respond to it by saying that many speakers of English will not allow plural subject-verb concord in such a sentence; and I could in reply justify the grammaticality of (A.9) by invoking its denotation, and say that herd denotes a group of animals and it is this plural denotation which makes plural concord possible for other speakers of English².

Proper names have meaning in so far as they denote and may be used to refer. For example the noun John denotes a male human being called John; in a nonreferring expression it will be pronominalised to he and not she; cf.

2. See p.133ff.

A.11) John is a teacher, isn't { he?
*she?

And there is no natural anomaly in the nonreferring sentences

A.12) John is a lovely girl, isn't he?

A.13) John is a lovely girl, isn't she?

These two sentences have different denotation and hence are differently interpreted: in (A.12) "John" must be a male dressed up as a girl for some reason; in (A.13) "John" must be a female with a male's name; it is an exceptional denotation for John and were (A.13) a referring expression we could say that the name has been misapplied at some point in time - though not necessarily on the present occasion of use. The denotation of John, like the denotation of cat, or the denotation of my husband is the President of the United States, delimits a class of potential referents to whom the label may be properly applied by identifying certain characteristics which we might expect to find in them. It is important to remark that denotation is not a class of potential referents, however; in fact it is a contradiction in terms to talk about denoting a referent, even a potential referent. The denotation of John can be paraphrased 'a male human being given the name of John', and this allows that any male human being called John is potentially, but not necessarily, an appropriate referent of the noun John. There may be certain other objects which can also be appropriately referred to as John but which are exceptions to the usual scope of its denotation; were this not the case there would be nothing odd about (A.13).

Some philosophers have held that reference either presupposes or entails the existence of the phenomenon in physical space and time; but no such assumption is made in this thesis. For example, if a drunk says

A.14) UC_{f₁} |I can see a luminous pink elephant flying towards me. |
 then it would be perfectly legitimate for someone to reply presupposing
 that the drunk has referred to some nonlinguistic phenomenon, e.g.

A.15) UC_{f₂} |Has that flying luminous pink elephant hit you yet? |
 or UC_{f₂} |Has it hit you yet? |
 or UC_{f₂} |Well I can't see it. |

In any such reply the respondent refers to the same grotesque creature that the drunk introduced into conversation, using normal devices for coreference. Thus although flying pink elephants do not exist in the familiar world, they may quite legitimately be referred to linguistically. And it is not even necessary that the drunk believes in the existence of the creature he has referred to; he may have been lying, perhaps pretending to have hallucinations to fake his degree of drunkenness: any of which would make no difference to the fact of his having made reference although (A.14) would then be a false statement. I do not think there is any room for doubt that in (A.14) "a luminous pink elephant flying towards me" is linguistically referential.

I have assumed without hitherto justifying it that denotation is a property not only of single nouns like cat but also of NP like a black cat sitting on the wall. If cat denotes 'cat' or 'feline object', and a black cat 'a black cat' or 'one black feline object' the difference is an increase in the complexity of denotation correlating with the increased complexity in NP structure; but there is no alteration whatsoever to the meaning of the term denotation. It should not be surprising that NP denote in a way entirely analogous to nouns: they apparently do so across languages, such ^{that} ~~as~~, for example, the single Eskimo noun

aput has a denotatum that can only be expressed through the English phrase falling snow. Exactly similar correspondences occur within one language; for example the phrase feline object is co-denotational with cat. The semantics of single lexical items is not different in principle or in kind from the semantics of phrases otherwise it would not have been possible for Weinreich (1966, 419 & 446), McCawley (1968b, 1971a), Green (1969) and others to argue that a single lexical item can be a mapping onto a multi-branched phrase marker representing its semantic structure. There is, therefore, nothing for the linguist to gain, but a generalisation to miss, if he refuses to admit that denotation is a property not only of single lexical items but also of phrases.

In the phrase a black cat, "cat" denotes 'feline object'; "black" denotes 'the property of blackness'; "a" denotes 'one indefinite one'; "black cat" denotes 'black feline object' or 'feline object with the property of blackness'; and "a black cat" denotes 'one indefinite feline object with the property of blackness'. Thus each lexical item denotes, and so do combinations of lexical items. The question What does X mean? asks for the denotation of "X". But Who/What do you mean (by) 'X'? questions the reference of "X". Consider

- A.16) A: UC_{g₁} | John is the president. |
 B: UC_{g₂} | What do you mean by 'president'? |

It should be clear that B is not asking the denotation of the word president, but for an explanation of the intended reference. And consider

- A.17) A: UC_{h₁} | That dog is chasing the little black cat. |
 B: UC_{h₂} | What do you mean 'cat'? |

Here B is questioning the reference of A's "cat" presumably because he perceives the little black object being chased to be something different. B speaks as if A's "cat" refers, and so it does, though not sufficiently to identify the referent. Inter alia A is referring to an object being chased, and he identifies that object through the NP "the little black cat", thus it is the whole NP which identifies the referent. But "cat" identifies the feline characteristic of the referent, and "black" and "little" identify other characteristics of the referent, so to that extent they each refer.

I have just said that it is the NP which identifies a referent, but consider the following dialogue overheard by my friend Snoopy:

- A.18) A: UC_{z₁} | That dog is chasing the little black cat. |
 B: UC_{z₂} | What? The little black cat is sitting beside me here! Oh, that little black cat! |

Snoopy guessed from the dialogue that there were two nonlinguistic phenomena to each of which the label the little black cat was applicable, and that B at first lighted on the wrong one and took it to be the referent of A's remark. To identify the correct referent it was necessary for B to make recourse to the whole of A's statement, which reveals the referent to be the little black cat being chased by the dog. Thus an NP may not in itself be sufficient to identify the intended referent; indeed, if the referent is to be picked out of a crowd, so to speak, several propositions may be required to accomplish it successfully.

In conclusion, reference results from the application by the speaker of a linguistic item to some nonlinguistic phenomenon. Any such application has spatio-temporal location and is subject to various other conditions of utterance which necessarily affect the evaluation of the

relationship between the linguistic item and its reference, expressed in terms such as true or false, happy (appropriate) or misapplied. Denotation has none of these characteristics. It does not result from anyone applying a label to nonlinguistic phenomena and so is abstracted from utterance conditions and is invariable through space and time; furthermore there are no grounds on which it can be judged true, false, happy or misapplied. Yet any linguistic item identifies the characteristics we might expect to find in phenomena that it might be applied to, and this is its denotation.

Appendix B

THE RESULTS OF A VERY INFORMAL QUESTIONNAIRE ON K-FORM PLURALS
FOR ENGLISH CLASSIFIERS

In what was originally a casual attempt to discover what people's reactions are to various K-form plurals for English classifiers (cf. Chapter 6), a questionnaire was distributed to 22 native speakers of English from England, Scotland, Ireland, Australia, and the U.S.A. The original idea for the questionnaire was off the cuff, an impetuous straw poll to discover the reactions of other native speakers to expressions for which I had wavering intuitions. It was not a planned survey of the speech habits of native English speakers, and I had no intention of publishing the results: because of this there was no attempt to randomise the presentation of expressions; would-be respondents were handed the questionnaire informally and requested to check through it when they had the time; and these respondents were all teachers or wives of teachers who by no means form a cross-section of the population. On returning the questionnaires, some people reported they had gone through it very quickly, just checking off what seemed OK because they feared that thinking about the expressions would confuse their grammatical intuitions (!); such people invariably accepted fewer of the expressions presented than those who reported that they had thought about each one before making a decision as to its acceptability. Some subjects returned the questionnaire without comment on their manner of checking.

The expert no doubt recoils in horror, and in view of the casual nature of this survey I have not placed any emphasis on its results in

Chapter 6, relying instead on my own intuitions. Yet these are confirmed by the results of the questionnaire, and it is partly for that reason, and partly for general interest, that I have decided, after all, to publish it. Possibly this field may be investigated again and the present survey used as a caveat against improper construction and method of presentation, as well as, I hope, a guide to the expected findings.

The questionnaire was presented in the following form:

"I should be grateful if you will indicate which of the following phrases and sentences are OK* for you; I should also welcome any comments they may provoke from you. Please indicate roughly where you lived between the ages of 5 & 15.

*i.e. those which might be used by yourself or people known to you¹.

-
1. two pound of flour
 2. two stone of potatoes
 3. two hundredweight of coal
 4. two ton of scrap iron
 5. two foot of dowelling
 6. two mile of bad road
 7. two pair of trousers
 8. two kind of apples
 9. how many pound of potatoes do you want?
 10. how many hundredweight of coal do you want?
 11. how many ton of scrap iron did you sell?

1. This note was omitted from the first few copies of the questionnaire but explained verbally to the recipients; it was penned in on later copies.

12. how many ton do you reckon that ship displaces?
13. how many pair of pants did you pack?
14. how many pair of gloves does that make it you've lost?
15. how many kind of apples do you grow here?
16. they bakery uses many pound of flour each day.
17. there must be many ton of scrap iron in that car dump.
18. he has given me many foot of dowelling free.
19. there is many mile of bad road between here and Marsabit.
20. give me both pound of sugar.
21. he bought several pound of flour.
22. this flour weighs about two pound.
23. give me both pounds of flour.
24. there was pound of flour in the store.
25. two precisely measured foot of dowelling
26. two full pound of flour
27. two pound or more of flour
28. this dowelling measures two foot
29. two pound or more of flour²
30. four pair at least of new shoes in a fortnight
31. two inch of handmade lace
32. two ounce of tobacco
33. two full pounds of flour
34. two dozen of them
35. two dozen of eggs
36. both dozen of them were broken.
37. we saw about two hundreds.

2. Because of a typing error this item is identical with 27. It should have had a plural marked classifier. All but one respondent gave the same response to 27 and 29, see Table 1.

38. we bought two dozens of them.
39. two full score were counted.
40. that twelve pound of oranges I got wasn't enough.
41. those twelve pounds of oranges I got weren't enough.
42. the herd was grazing peacefully.
43. the herd were grazing peacefully."

The rubric in the questionnaire was intended to encourage people to indicate not only which expressions they would use themselves, but also those expressions they thought other people might use even though they wouldn't themselves. This instruction was successful with less than half the respondents (9 out of 22). The request for comments was included in the hope that people might note such things as dialect differences, their doubts about the grammaticality of an expression, and so on; on the whole it was ignored, and none of the comments made is significant enough to warrant repetition. Table 1 (see next page) presents the responses, + marks the positive ones, the negative ones are left blank.

The tremendous differences between speakers in their judgements of grammaticality surprised me and to some extent must be explained by a poor attention to the task in hand on the part of some respondents, for which the casual presentation of the questionnaire is no doubt to blame. I cannot believe that dialect differences account for the disparity between a minimum of two positive responses and the maximum of thirty-six. Yet despite the apparent inadequacies of the questionnaire there is a reasonable degree of agreement on some items, and some evidence of dialect differences.

Respondents generally agreed in their judgements on seventeen items,

Expression number	Respondent identification letter																				Number of positive responses	Expression number		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T			U	V
1	+										+						+	+	+	+	+		8	1
2	+		+						+	+	+	+					+	+	+	+	+		12	2
3	+	+	+		+				+	+	+	+					+	+	+	+	+	+	16	3
4	+								+	+	+	+					+	+	+	+	+		10	4
5	+								+		+	+					+	+	+	+	+		10	5
6	+										+	+					+	+	+	+	+		7	6
7	+								+	+	+						+	+	+	+	+		10	7
8											+						+	+	+	+	+		5	8
9	+										+						+	+	+	+	+		7	9
10	+	+	+						+	+	+	+					+	+	+	+	+	+	15	10
11	+								+	+	+	+						+	+	+	+		8	11
12	+										+	+					+	+	+	+	+		8	12
13	+		+								+						+	+	+	+	+		9	13
14	+										+						+	+	+	+	+		7	14
15																	+	+	+	+	+		6	15
16												+					+		+				3	16
17												+							+				2	17
18												+											1	18
19																							0	19
20																				+			1	20
21												+							+	+	+	+	6	21
22	+											+	+				+	+	+	+	+	+	10	22
23	+	+	+						+	+	+	+	+				+	+	+	+	+	+	18	23
24																							0	24
25										+		+	+										3	25
26	+											+					+			+			4	26
27	+										+	+					+	+	+	+	+		10	27
28	+											+					+	+	+	+	+		7	28
29	+										+	+					+	+	+	+	+	+	11	29
30	+										+						+	+	+	+	+		7	30
31												+					+	+	+	+	+		6	31
32												+	+				+	+	+	+	+		6	32
33	+	+	+	+	+					+	+	+	+				+	+	+	+	+	+	19	33
34	+		+	+	+	+				+	+	+	+				+	+	+	+	+	+	17	34
35										+	+	+					+						5	35
36	+				+							+	+								+	+	6	36
37																	+		+				2	37
38																		+		+	+		4	38
39	+		+		+						+	+					+	+	+	+	+	+	12	39
40												+					+	+	+	+	+		5	40
41	+											+					+	+	+	+	+	+	9	41
42	+		+	+	+	+	+	+	+	+	+	+	+				+	+	+	+	+	+	21	42
43		+									+							+	+	+	+	+	7	43
Total for each respondent	26	5	9	2	6	2	4	17	11	9	36	18	4	7	26	3	24	32	35	19	31	14		
<p>Key to respondents: A,B both from Melbourne, Australia; C,D from California, E,F from Massachusetts, G from Missouri, H from Wisconsin, U.S.A.; I,J from Ireland; K,L,M from Lowland Scotland; N from Leeds, O from Leicester, P from Cumbria, Q,R from South Lancashire, S from Birmingham, T,U from London, V from Isle of Wight, England.</p>																								

TABLE 1

numbers 8, 16, 17, 18, 19, 20, 23, 24, 25, 26, 33, 34, 35, 38, 40 and 42. The standard deviation in response for this set of items as a whole is only 1.76. Items 19 and 24 were agreed by all twenty-two respondents to be ungrammatical, and three other expressions were agreed by twenty-one of the respondents to be either grammatical (42) or ungrammatical (18 and 20). On the other hand there was general disagreement (in the nature of eleven for and eleven against) about ten of the items, numbers 2, 4, 5, 7, 13, 22, 27, 29, 39, and 41; the standard deviation in response to this set is 1.9. (The SD in responses to the two sets of most-agreed-upon and most-disagreed-upon items is 6.7.)

A glance at Table 1 shows that the major disagreements are probably not idiolectal but a function of national dialect differences. The national averages of positive responses show a polarity between English speakers (from England) and American speakers: the English average 21 positive responses, the Scots 19, the Australians 16, the Irish 10 and the Americans 7. If we consider items 1 through 15, which exemplify k-form plural classifiers (cf. Chapter 6), the proportion of responses is 14.5% positive against 85.5% negative for the Americans C through H, but 60% positive against 40% negative for the English N through V. Blank American lines contrast with English crosses for items 22, 27, 29 and 41 which constitute the rest of the disagreement set described above. Only 39 is an exception to an apparently clear distinction between English and American dialects in respect of the disagreement set, which thereby becomes an asset to the survey instead of the fault it originally looked to be.

The content of the questionnaire is not entirely homogeneous, yet most items relate to the testing of the grammaticality of k-form plural classifiers such as are discussed in Chapter 6. Taking just the first

eight expressions on the questionnaire, all of them containing k-form plural classifiers, it is not surprising that the national averages for positive responses show a rank order which closely corresponds to that given above for total scores: out of the first eight items the English average 5, the Australians and Scots 4, the Irish 3, and the Americans 1. It is only possible to speculate on the reasons for these differences in dialect. I have suggested that the k-form plural classifier in English is cognate with similar forms in Scandinavian and North Germanic, and noted that it is under seige from the regularising principle in the shape of a sibilant suffix to mark all plural forms. It would seem from Table 1 that the English still retain the k-form plurals, although these are much commoner in speech than in the written language - which already seems to have fallen to the regularising principle. In this one respect I would suggest that the spoken language has stronger links with the past than the written language. Lowland Scots shares the same historical influences from North Germanic and Scandinavian as the English over the border, and it is hardly surprising that the responses of Lowland Scots to k-form plural classifiers is similar to that of the English. Australia has a population very largely of English origin who apparently took their language habits with them. The only comment I can make about Irish English is that my two informants are not from the part of Ireland once conquered by Vikings. The Americans, with the lowest number of positive responses, have obviously fallen to the regularising principle where the plural is concerned. To complement the negative evidence considered already consider the fact that five out of six Americans gave positive responses to the expression two full pounds of flour (33) with its plural marked classifier; the sixth did so at first but then scored out this reply (heaven knows why). I conclude there is general agreement among

Americans about the grammaticality of this expression and take it as positive confirmation that Americans require plural marking on measurement classifiers in plural contexts. (The exception seems to be hundredweight, cf. 3, 10 and below) The only other plural marked measurement classifier in the questionnaire was in 23, but from Americans it got only three positive responses and a fourth which was scratched out (not by the same person as scratched out 33); because this contains the same classifier, pounds, as 33, I can only conclude that it was not marked as grammatical because of its location on the questionnaire. I would not accept it as a counterexample to the plural marking constraint on American grammar.

Is there any other evidence for a regularising propensity in American English? Items 42 and 43 may appear to offer such evidence; these items contrast intensional with extensional reference to a set, respectively. For most Americans there is no such contrast; an intrinsically collective countable noun like herd has only the concord possibilities regular to countable nouns, namely, singular with herd and plural with herds: the concord of herd with the plural, as in 43, is irregular. The one American exception to this was H, who said she was doubtful about the rectitude of 43 because she never uses it herself, but she thinks it is becoming acceptable as a result of contact with British English. Thus it is justifiable to conclude from comparing American responses to 42 and 43 that they prefer the syntactically regular version, 42.

This conclusion may be justified, but Table 1 shows that a propensity to regularity in the number concord of intrinsically collective countable nouns does not correlate with a propensity to regular plural marking on measurement classifiers -- observe the negative Scottish response to item 43. Even the English prefer regular 42 to irregular 43, though in a ratio

of 1 : 0.45 as against a ratio of 1 : 0.16 for the Americans. All that can be said is that Table 1 shows Americans to be more consistent in their preference for regular forms than the English or the Scots. The only explanation I can think of for this would be that American English tends to regularity as a result of being learned and spoken by immigrants and the children of immigrants of non-English speaking stock. Rather in conflict with this hypothesis is the fact that Scandinavian and North Germanic immigrants might have been expected to calque English classifiers on the unchanged plurals of the mother tongues: slight evidence that this has taken place here and there can be found in the survey. H, who makes the largest positive response among Americans is from a German family in Wisconsin, a state with many people of Scandinavian and Germanic origin; and C, who makes the second highest positive score among the Americans, has a German father and speaks fluent German. But the Standard English which the children of immigrants will have been taught does not have the k-form plural classifiers and even people from German and Scandinavian families would likely be schooled out of such eccentricities. (If it is objected that k-form plurals have not been schooled out of British English, I would answer that the major source for a grammatical and acceptable standard is school for the immigrant and immigrant offspring, but the home for the native speaker.) What about people of native English speaking stock in America? I don't know; their usage would be a matter for further investigation. But they, like the British, are prey to the regularising principle, and if regularising has been given a boost by the influx of non-English speaking immigrants as I have suggested, then the regular forms would be expected to overwhelm the irregular k-form plurals - as, indeed, appears from Table 1 to have happened.

The judgements of grammaticality made by respondents to the question-

naire broadly confirm my own given in Chapters 4 and 6. The one significant difference between 'consensus English' and my own idiolect is in the judgement of item 38, two dozens: only 4 (18%) of the respondents found this acceptable. However, only 2 found two hundreds (item 37) acceptable; which weakly confirms my intuition that two dozens is better than two hundreds (see p.101f.).

In terms of relative acceptability, the rank order of the k-form plural classifiers used in the questionnaire is as follows: most acceptable is hundredweight, then stone, foot, ton, pair, pound, mile, kind - which is least acceptable. Ton and pair come out equal. I am not surprised to find hundredweight the most acceptable (it is even accepted by 50% of the Americans!) because of the etymology of the word. Historically it derives from the expression a NUMERAL weight where the numeral usually referred to the number of pounds; thus, a hundred weight was presumably a hundred pounds, and the extra 12 pounds was probably the 'heavy weight' version of it - perhaps it was originally a bonus, that became a right. Clearly a four hundred weight requires no -s on the head noun because it is not plural; later when hundred weight collapsed into hundredweight with reduction of the secondary stress on "weight", the result looked for all the world like a measurement Classifier Noun in the same class as pound; then, four hundredweight seemed irregular with a preceding it, and regular with a plural -s suffixed to it. But the etymology of hundredweight, and the fact that other measurement classifiers may fall within the scope of a plural denominator but occur in k-form, seem to have combined to influence the retention of the k-form plural of hundredweight in many more dialects than that of pound, stone, or foot. For the most part, the relative acceptability of the k-form plural of the various classifiers in consensus English, as tested

in the questionnaire, corresponds to my own intuitions; my only dissent from the rank order given above is that I would place pound towards the top of the list; it may score low because it is the most commonly used weight in everyday use and so more pressured by the regularising principle than other weights, but I have no supporting evidence for this speculation. The calibration used for rank ordering the acceptability of these k-form plural classifiers is the mean number of positive responses per expression containing the classifier out of the first fifteen items; this causes a slight distortion because some classifiers occur only once, and others two or three times. Taking just the first eight items in which each of these classifiers only occurs once does not substantially change the rank order of acceptability, but it does make foot, ton and pair all equally acceptable; on this basis the ratios of acceptability are hundredweight 1, stone 0.8, foot, ton and pair 0.67, pound 0.53, mile 0.47, and kind 0.33.

That concludes my discussion of the results of my survey, which bear out my own grammatical intuitions as applied in Chapter 6. To me one of the most interesting discoveries has been just how far people differ in their judgements of grammaticality - although, admittedly, the questionnaire covered a very grey area. Whether one can fully trust the non-linguist in his reports on grammaticality I do not know. I suspect it may be a mistake to present him with a long list of items for grammatical grading; this invites over-conservatism because the non-linguist is unused to thinking about the language he uses, and in defense against the fear of being branded an ungrammatical speaker, he will concentrate on what is believed to be the 'correct' form, which in the area surveyed means the most regular form. A preferable way to tackle the problem might be to present an expression orally, ask what it means, and then

ask the subject to repeat it to see if any changes are made; if there are changes they should be queried to establish whether they constitute a 'correction' of the stimulus sentence. The subject's feelings about the stimulus expression might be questioned in any case. Whether such a time consuming method of presentation would have affected the judgements made on the expressions in my questionnaire I shall never know; but the disparity between a minimum positive response of two items and a maximum positive response of thirty-six items (out of a total of forty-three) is too great to put down to dialect or even idiolect differences.

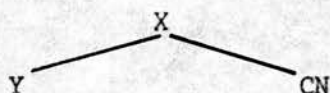
Appendix C

A LIST OF THE WELL FORMEDNESS CONDITIONS, PRAGMATIC INTERPRETATION
RULES, AND PRAGMATIC PRINCIPLES REFERRED TO¹.Well formedness conditions

- WFC 2.1 Any bar-N node not daughter of a bar-N node is replaced by an NP node. (p.34)
- WFC 2.2 Any node which is mother to $\widehat{NP^S}$, $\widehat{NP^{Prep P}}$, or conjoined NP, is NP. (p.34)
- WFC 2.3 Given two semantically identical NP in consecutive sentences
(i) either the two NP are not coreferential, or if they are coreferential the second one in sequence is definite
(ii) if it is definite the second NP may be coreferential with the first
(iii) if it is indefinite the second NP is not coreferential with the first
(iv) if they are coreferential and the second NP is indefinite, the structure is ill formed. (p.62)
- WFC 2.4 Where an NP of a certain configuration is predicated as generic, it may occur in contexts otherwise restricted to definite NP. (p.70)
- WFC 2.5 The bar-N node which directly dominates an Article node is converted into an NP node. (p.85)
- WFC 4.1 In a partitive NP the quantified (or classified) NP must contain the quantity denoted by the QP. (p.109-110)
- WFC 4.2 A bar-N node which is the right sister to QP invariably converts to NP. (p.118)

1. All these are presented informally.

- WFC 5.1 Any bar-N node must consist of a predicate on an argument, and only unbarred N is free of this condition. (p.154)
- WFC 5.2 A bar-N node which no longer dominates a predicate may be Pruned if and only if its remaining daughter is unbarred N. (p.154)
- WFC 5.3 For any pair of NP, say NP_i and NP_j , NP_j is subjected to Onesing under the stated identity conditions provided it does not bear all primacy relations to NP_i . (p.160)
- WFC 5.4 The demonstrative is plural if and only if it ranges over the NP head ONES. Otherwise it is singular. (p.168)
- WFC 5.5 An NP which dominates conjoined (i.e. anded) heads has plural external concords. (p.168)
- WFC 6.1 Given NP subtree



- (i) if and only if CN is ONE(S), then either (a), Y may be N or Adj and X is \bar{N} ; or (b), Y may be CN and X is \overline{CN} ; otherwise the structure is ill formed.
- (ii) if and only if CN is a classifier other than ONE(S), then Y is Num, and X is \bar{N} ; otherwise the structure is ill formed. (p.210)

Universal well formedness constraint UWFC 1:

The classified noun cannot be interposed between the quantifier and the classifier. (p.95)

Pragmatic interpretation rules

- PIR 8.1 An uncountable animal NP will refer to the meat of the animal denoted by that NP when its clause mate is an NP or a sentence

predicate referring to the preparation, presentation,
or consumption of food. (p.276)

PIR 8.2 An uncountable animal NP will refer to the skin (hide, pelt, fur) of the animal denoted by that NP when its clause mate is an NP or sentence predicate referring to apparel or accessories to apparel, the wearing of apparel, furniture, the creation of an artifact, or any leather-oriented object, place, or process. (p.277)

PIR 8.3 Where the uncountable animal NP does not command an interpreter, the topic of discourse will assign it an interpretation. (p.280)

Pragmatic principles

The interpreter control principle: Any interpreter higher in the hierarchy controls the interpretation of the uncountable NP against interpretation by an interpreter lower in the hierarchy. (p.283)

The k-principle: The k-form of the noun is used in referring to the phenomenon or set of phenomena whose perceived composition does not readily permit division into a number of 'natural units'; or, alternatively, whose 'natural units' are not regarded as significant -- either ordinarily, or in the particular context -- by the language user. (p.300)

The classificatory principle: The characteristics denoted by the categories of classification must be perceivable by more than one of the senses alone. (p.343)