

"ON THE SEMANTIC REPRESENTATION OF  
RELATIVE CLAUSES  
IN ENGLISH"

by

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- oOo -

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A B S T R A C T

Few recent studies of relativization attempt to deal with semantic distinctions between Restrictives (Rs) and Non-Restrictives (NRs), and none satisfactorily. But the distinctions are fundamental, and must be treated by rules having semantic and contextual orientation.

The functions of context are examined at some length, and it is suggested that many semantic and syntactic operations usually treated separately are in fact contextually-determined - by the general semantic coherence of the discourse, and by the operation of focus within it. The deictic implications of context-related Rs of several types are distinguished from those of the context-independent function of generic. Generic Rs are taken to be the fundamental R type. Evidence is presented suggesting that Rs and NRs derive from different sources. NRs are subsequently shown not exclusively to derive from conjunction, but often to exhibit more complex semantic relationships between antecedent and relative clauses, whereas Rs and their antecedent clauses are semantically single units. This difference is explored using a generative-semantic model, and suggesting how the context ultimately specifies not only R as against NR, but also the various types of R. Interpretive semantic models, it is suggested, cannot account for these distinctions at all; neither can sentence-grammars.

Conclusions

- Rs subjoin relative to antecedent clause, whereas NRs conjoin them (though not only with logical ' $\wedge$ ');
- The basic R is generic; other deictic types are regularly derived from generic contextually. Semantic theory must therefore account for context;
- The relationship of full- or partial-synonymy between (all) lexical items and (some) generic Rs suggests complete or partial identity of underlying semantic structure. At present, only Generative-Semantics (modified for context- and role-specification) can handle this;
- Considerable overlaps between relative clauses and focussed constructions appear to suggest that contextual focus may eventually determine all the distinctions involved.

'In the unlikely event of seeing a garden-warbler it may be recognised  
by the absence of any distinctive feature.'

Bolton Evening News

(quoted in Punch, June 1970).

To K., G., and A.,

sine qua non

A C K N O W L E D G M E N T S

Many people have, wittingly or not, contributed to the content of this thesis. I should like to thank especially my witting advisors, in particular John Lyons and Erik Fudge, who read an earlier version and made valuable and valued comments upon it. If I have failed to profit from this in places, it is due to my stubbornness and not their lack of perspicuity. I should also like to thank Jasper Buse, my supervisor of nine years' standing, several "generations" of students, and various conference audiences for their questions and suggestions. Particular thanks to Anne Harbin, who typed from a difficult manuscript with impressive ease and accuracy - I am very grateful to her. (I should also like to thank Suzanne Chatsfield, who typed the first draft). Finally, for her vast forbearance and encouragement, far beyond the call of duty - particularly during the last few months - I can't really thank my wife enough. However, I promise to try.

Parts of Chs. I, III, IV and V, in an earlier version, have been published (Werth 1974b).

## C O N T E N T S

	Page
Abstract	2
Acknowledgments	4
Chapter I: INTRODUCTION	7
1.1 Relativization in TG: a brief history	8
1.2 Identifying relative constructions	9
1.3 Aims, scope and model	14
Chapter II: DISCOURSE FUNCTIONS	18
2.1 Context-of-utterance	19
2.11 Immediate situation	19
2.12 Linguistic context	22
2.13 Cultural context	23
2.14 Criticisms: competence and performance	25
2.15 Grammaticality: contextualizability	29
2.16 Thompson 1971: "speaker assumptions about hearer knowledge" 31	
2.17 Presuppositions and pragmatic assumptions	44
2.2 Discourse	49
2.21 Discourse: informal characterization	50
2.22 Cohesion	61
2.23 Coherence	66
2.3 Focus and focus-movement	67
2.31 Focus: a brief review and outline	67
2.32 Focus-movement rules	79
Chapter III: CONTEXTUAL FUNCTIONS AND DERIVATION OF RELATIVE CLAUSES	85
3.1 The role of the determiner in relativization	86
3.11 Kuroda 1969a	86
3.12 Taglicht 1972; Baker 1973	90
3.13 Determiners and context in relative clauses	103
3.14 Van Dijk on determiners and relative clauses	114
3.2 The derivational source of relative clauses	119
3.21 Introductory summary	119
3.22 R and NR	123
3.221 Introduction	123
3.222 The distinction between R and NR	124
3.223 Do Rs and NRs both derive from conjunction?	129
3.23 R and cleft	137
3.24 R and pseudo-R	149

	Page
3.25 Further evidence for relative sources	155
3.251 Opening remarks	155
3.252 NRs, synonymy and contextual modification	156
3.253 Rs, lexicalization and logical notation	162
Chapter IV: LEXICALIZATION AND SYNTACTIC STRUCTURES IN A GENERATIVE- SEMANTIC MODEL	167
4.1 Assumptions	168
4.11 Generative semantics	168
4.12 The nature of semantic notation	171
4.13 Configurational assumptions	185
4.2 The proposed rules: first approximation	192
4.21 Configurational rules	192
4.22 Semantic primes	194
4.23 Some transformations	208
4.3 Lexicalization	219
Chapter V: THE DERIVATION OF RELATIVE CLAUSES	233
5.1 Restrictives: basic configuration	234
5.2 Context-specification	238
5.3 Non-restrictives	251
Chapter VI: REVIEW SECTION: SOME PREVIOUS WORK ON RELATIVIZATION AND SEMANTIC THEORY, AND DISCOURSE	264
6.1 Some transformational accounts	265
6.11 Pre- <u>Aspects</u> and "Standard-Theory" approaches	265
6.12 "Extended-Standard-Theory" approaches	283
6.2 Discourse study: a brief review	292
6.21 Zellig Harris 1963	293
6.22 Reid et al. 1968	296
6.23 Cromack 1968	299
6.24 Sinclair and Coulthard 1975	303
6.25 Van Dijk 1972	307
Chapter VII: SUMMARY AND CONCLUSIONS	313
References cited.	317

CHAPTER I

INTRODUCTION



## CHAPTER I: INTRODUCTION

1.1 Relativization in TG: a brief history

Our understanding of relativization has benefited rather sparsely from recent advances in semantic knowledge. As a glance at Stockwell, Schachter and Partee 1973, or Burt 1971, or Langacker 1972 will show, relativization is generally accounted for in terms of syntactic rather than semantic processes. This follows an approach laid down in its basic outlines by Carlota Smith in 1964. Smith attempted to capture the (semantic) distinction between restrictive relatives (R) and non-restrictive relatives (NR) by using syntactic dummy symbols (as they were subsequently called). Thus:

1. (a) NR They pointed to a dog, who was looking at him hopefully;
- (b) R They pointed to a dog who was looking at him hopefully.

Smith derives these from, respectively:

1. (a') { They pointed to a (A) dog.  
          A (A) dog was looking at him hopefully.
- (b) { They pointed to a (R) dog.  
          A (R) dog was looking at him hopefully.

As in the contemporary Katz-Postal-Chomsky model, a semantic distinction is captured syntactically and "embryonically" in the phrase-structure rules, subsequently to be interpreted by transformations, projection rules etc. (though at that early stage Smith made no reference to the semantic machinery). However like the Katz-Postal-Chomsky "Q", "Imp", "Neg" etc., Smith's "A" and "R" conceal more than they reveal. We are left with no idea how the distinction is to be drawn, nor what the content of these dummy symbols can be.

Jacobs and Rosenbaum 1968 replace this somewhat runic analysis of Smith 1964 with a purely structural account of the restrictive/non-restrictive distinction. They note a certain similarity between non-restrictives and certain conjoined sentences and derive the former from the latter, while retaining the NP-subordination account for restrictives:

2. (a) NR Hercules, who is not to be trifled with, will arrive soon.
- (b) R The argument which Palmerston presented disconcerted the protesters.

2. (a') Hercules will arrive soon, and Hercules is not to be trifled with.

⇒ Hercules, and Hercules is not to be trifled with, will arrive soon.

⇒ Hercules, WH + Pro + Hercules is not to be trifled with, will arrive soon.

(b') The argument (Palmerston presented the argument) disconcerted the protesters.

⇒ The argument (the argument Palmerston presented) disconcerted the protesters.

⇒ The argument (WH + Pro + the argument Palmerston presented) disconcerted the protesters.

While this is preferable to the Smith account because less gnostic, more explicit, it still does not explain the semantic distinction.

Broadly speaking, Jacobs and Rosenbaum's account is still the standard treatment of relativization in TG. The few attempts which have been made to capture the semantic distinctions in question have for the most part been both (a) inexplicit, and (b) inaccurate as to the precise nature of these semantic distinctions: inexplicit, since the proposed executive machinery for handling meaning is either unmanageable (in the case of projection rules), at least for relativization, or vague and unformalized (in the case of "speaker-hearer assumptions"); inaccurate, since in most treatments it is assumed that NRs merely add information to the matrix clause, and as for Rs, some accounts at least consider that they too somehow add information, though in some way inexplicably different from NRs. I shall be reviewing this work in chapters II, III and VI particularly.

## 1.2 Identifying relative constructions

Several candidates offer themselves for preliminary consideration as relative constructions:

3. (a) The man who sold you the pork-pie was acquitted of murder last Tuesday;
- (b) The man who sold you the pork-pie is a barber;
- (c) It was a barber who sold you the pork-pie;
4. (a) The fact that I discovered led to Bill's acquittal;
- (b) The fact that I discovered further evidence led to Bill's acquittal;
5. (a) What lay on the table was the tissue;
- (b) What we want is Watney's;
- (c) The one (who) we want is Genghis Khan;
- (d) Who we want is our own affair;

6. (a) The thing that gave you a fright was a monster from the deeps;  
 (b) The thing that gave you a fright came from 20,000 fathoms;
7. (a) The grouse moors, which offer breathtaking views, are in a remote part of Scotland;  
 (b) The grouse moors, which offer breathtaking views, are very popular with photographers;
8. (a) Joan poured Sam a large whiskey, which in the circumstances was very kind (of her).  
 (b) That Joan poured Sam a large whiskey was in the circumstances very kind (of her).  
 (c) It was in the circumstances very kind of Joan to pour Sam a large whiskey.

These sentences fulfil certain superficial conditions:

- (i) All of them (except the last) contain possible relative pronouns, i.e. wh- words, or that.
- (ii) Most of them have this formative immediately following a NP which might constitute the antecedent of a relative clause.
- (iii) Those which lack such a potential NP antecedent include some which have, traditionally or sporadically, been claimed to be relative clauses.
- (iv) The remainder appear to be closely related (not to say identical), semantically and syntactically, with some of the claimed relative-clause sentences: it might be argued that they are derivationally related, which might in turn suggest important implications for derivational priority.

(3a) is a typical R, as all will agree. (3b), too, appears to be structurally of a piece with (3a): I shall argue, however, (Ch. III), that (3b) represents a distinct construction, which I hereby dub pseudo-relative. Pseudo-relative shares some attributes with true relative constructions (most obviously their surface form) and some with focussed constructions such as cleft (3c), and pseudo-cleft (5a,b). In other words, there is some "squishiness" between relative and cleft constructions.

(4) both contain that-clauses, but only (4a) is a true relative, since that is there a surface descendant of an underlying repetition of fact. That in (4b), however, bears no such relationship to fact, and is merely a subordination-marker. (It may, incidentally, be the case that that is merely a marker of subordination even in relative clauses. Compare, in this regard: (i) the archaic which that, etc., now obligatorily either which or that, or in object cases, optionally neither, and (ii) the

philosophical and legal usage such that, which incorporates the restrictive-ness of an R but not its identity condition, since the "antecedent" must be repeated:

9. (a) The book<sub>i</sub> which<sub>i</sub> John read ...  
 (b) The book<sub>i</sub> such that John read it<sub>i</sub>...

Indeed, it is tempting to postulate that the form which may be derived historically from it, wh-shifted to the front of its clause and combined with such:

10. wh-it such that → which that).

(5a,b), as mentioned, are pseudo-cleft constructions ((5a) is from Kuroda 1969a), such as:

11. (a) What I want to know is, who are the masters now?  
 (b) What bothers me is this morning's news;  
 (c) What came through the window was a brick.

All of these are focussed versions of non-pseudo-cleft Ss:

12. (a) I want to know who are the masters now;  
 (b) This morning's news bothers me;  
 (c) A brick came through the window.

The only account available to me of the derivation of pseudo-clefts (Nakada 1973) argues that they derive from "self-generated" question-and-answer pairs, e.g:

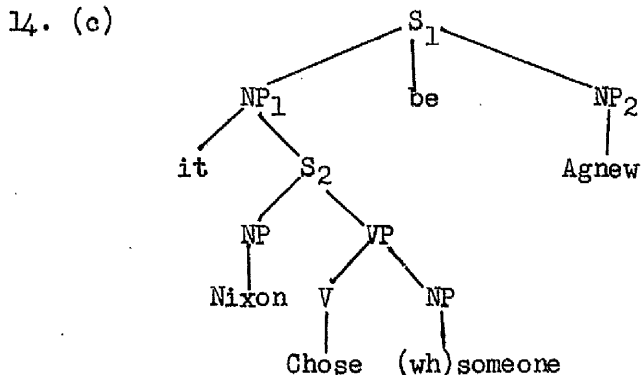
13. (a) What did the lightning strike? The house ⇒  
 (b) What the lightning struck was the house.

(Conversely, Harries (1972) derives wh-questions from pseudo-clefts). Akmajian (1970) explicitly sets aside the problem of pseudo-cleft derivation. His chief concern is to derive clefts such as (3c) from an underlying (though, he says, not necessarily deep) pseudo-cleft. I regard this as essentially correct, although some of the details of the transformations he suggests are rather doubtful. For example, he regards a sentence such as (5c) or:

14. (a) The one who Nixon chose was Agnew,  
 as pseudo-cleft (in fact this is his opening example and therefore presumably intended to be typical). I would argue that (14b) was a typical pseudo-cleft:

14. (b) What Nixon wanted was re-election,  
 and that (14a) while functionally equivalent to (14b) in some ways, is actually closer along the squish syntactically to a true relative. Akmajian nevertheless seems to regard (14a) as both pseudo-cleft and

relative, though as I shall show in Ch. III, it behaves differently from both. Furthermore, in the course of his derivation from pseudo-cleft to cleft, using the underlying structure in (14c):



Akmajian applies what he calls the Relativization Rule, which converts the wh-marked node into a relative pronoun. But if this is relativization it is a very odd and idiosyncratic application of the rule: notice that there is seemingly no condition of co-reference either stipulated or in fact possible in the rule input. Moreover, Akmajian regards sentences such as (14d) as more fundamental than (14a):

14. (d) Who Nixon chose was Agnew.

(He mentions (p.164) that many speakers find (14d) and all pseudo-clefts beginning with wh- words other than what unacceptable, and suggests that for these speakers the rule converting pseudo-cleft to cleft is obligatory, except for those with what. However, the exception is hard to account for, as he notes, and also this leaves the derivation of his original pseudo-cleft form (e.g. (14a)) rather problematical). From all this, it would seem that Akmajian considers pseudo-clefts to derive from relative clauses, which, since they are wh-marked, are one of the two likeliest candidates for the source, the other being wh-questions (c.f. the references to Nakada (1973) and Harries (1972) above). In Ch. II, however, I shall argue that pseudo-clefts result from rules triggered by Focus-placement, and as such are related to questions, which are also triggered by Focus-placement of a sort. Both, though, derive essentially from simple sentences, in my view: both Akmajian's and Nakada's solutions to the source of pseudo-clefts exclude the intuition that the post-copula element (the focus point, in Akmajian's terminology) belongs both semantically and syntactically in the wh-clause. If this can be effected, it avoids the need for the totally superfluous and wasteful rule of Reflexive Correction, suggested by Akmajian to account for the apparent

flouting of the clausemate condition for reflexivization in:

14. (e) It was myself that I shaved;  
 (f) The one I shaved was myself;  
 (g) It is me who has to protect myself,

since if the pronoun underlying the reflexive form starts off in the same clause as its antecedent, there is no problem for reflexivization. Thus underlying both (14e,f) is (15a):

15. (a) I shaved myself,  
 and underlying (14g) is something like (15b):  
 (b) [I protect myself] has to be.

(15d) appears to be very much like the pseudo-clefts I have just discussed, though unlike (14d) it is fully acceptable despite its apparent headlessness. However, as I shall show in Ch. III, it in fact contains an embedded question, and might occur in response to:

16. (a) Who do you want?

Conversely, it has no synonymous single-clause counterpart, equivalent to (12b,c) or (15a):

- (b) \*We want our own affair.

(6a,b) are minimal pairs for the true-relative/pseudo-relative distinction, despite their semantic and partial syntactic similarity. What distinguishes them is their relationship to an equivalent single-clause sentence:

17. (a) A monster from the deeps gave you a fright;  
 (b) \* (Came) from 20,000 fathoms gave you a fright.

Indeed, on closer inspection, I believe it will be found that thing in (6b) has more inherent content to it than thing in (6a), (such as might be discovered in an utterance like "Run! Here comes the Thing!").

(7a,b) are both NRs, quite clearly, but they illustrate a distinction which I shall be investigating, namely a difference as to the degree of coherence between the matrix and relative clauses. (7a) is the classical NR, which merely "adds information" to its matrix. (7b), on the other hand, does more: the NR provides the reason for the predicate of its matrix, or in other words it performs the same semantic function as a subordinate clause introduced by because or since among others. I shall examine this question in section 3.252 and Ch. V.

(8a) is the other main variety of NR, viz. one whose antecedent is a Predicate or S, and not merely an NP. Such NRs, however, appear to be closely related to bisentential constructions like (8b), and its extra-posed and raised derivate (8c), in that all three fall into the same

natural semantic divisions of 'reported action' + 'comment'. I shall have little more to say about this type of NR.

My investigation, then, will centre on the true relative clause, as exemplified by (3a), (4a), (6b) and (7a,b). ((8a), though perhaps a true relative, will not concern me greatly since my chief interest is in the relationship between antecedent NP and relative clause). To the extent, however, that I shall argue for a certain squishiness in defining relative clause constructions, and given also that my concern is basically semantic rather than configurational, I shall from time to time be considering most of the other constructions in (3) - (8) as well.

### 1.3 Aims, scope and model

My aims in writing this study are threefold:

- (i) to demonstrate that interpretivist models are simply incapable of handling the process of relativization, and specifically the problems raised in specifying it semantically,
- (ii) to demonstrate that a generative semantic approach, on the other hand, is adequate to the task, and at the same time putting forward an analysis of and derivation for relatives,
- (iii) to emphasise the importance of context-sensitive discourse grammar, both generally in Grammatical Theory, and specifically in the derivation of relatives.

The semantic theory which I shall be outlining is, of course, extremely tentative and tenuous, more so in some aspects than in others - it is, needless to say, at a rather primitive and programmatic stage. I feel, however, that it incorporates - embryonically, as yet - the best and most useful ideas of the Generative Semanticists and certain others, such as Charles Fillmore. I believe it to have the potential for capturing such elusive notions as "Semantic Field", "collocation", "lexical set", "polysemy" and others, and I have also used it in an attempt to explain semantic change (see (Werth, 1974a). Since all of the most important constraints on relativization appear to be semantic in nature, rather than syntactic as conventionally supposed, relative clauses present an ideal situation for the testing of a semantic theory. Like all true hypotheses, however, my suggestions and speculations are - indeed must be - open to question and attempted refutation, since only in this way can any progress be made in charting the murky waters of linguistic meaning.

In the following investigation, my purpose is not to explore the syntactic processes involved in relativization to any depth, since in any case I believe these to be fairly superficial. What I am interested in here is the semantic origins of the restrictive/non-restrictive distinction, and its implications for linguistic theory. (In Ch. VI, therefore, I discuss previous work at some length, but from this semantic rather than syntactic viewpoint). The core of this study, however, is a proposal for a semantic theory in which the distinction in question can be accounted for. The model which I propose is Generative Semantic owing much to the work of George Lakoff, James McCawley, John Ross and others (see the references to these linguists below, passim), with additional machinery to account for at least some of the effects which the context has on meaning. In Ch. II, therefore, I explore at some length the relationship between sentences (particularly, of course, those containing relative clauses), and their context, both verbal and situational. In the course of this, certain assumptions about the social function of language are brought out, which may still be somewhat unorthodox in a linguistics whose mainstream is even now restricted in many ways by the dictates of neo-Bloomfieldianism. Despite this, there is a growing number of philosophers and linguists prepared to investigate questions concerning the function of language in social situations, most of them looking to the pioneer work of Grice (1968) (which I have not myself been able to see) for their starting-point.

Many of the semantic quiddities of relative clauses can be located in the deictic implications of the antecedent NP's determiner. I shall therefore devote a large proportion of Ch. III to the close study of this surface form, and will conclude that the different senses of the determiner derive from different effects of the context upon but a single basic sense, the generic.

(in Ch. II)

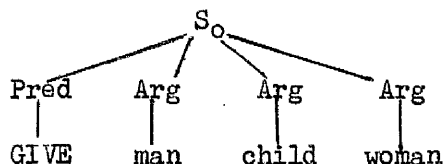
I shall also propose that the executive apparatus in discourse is the placement of Focus, and that many of the conventional transformational rules (whose domain is ordinarily taken to be no more than the sentence) are in fact context-sensitive, and moreover triggered off by Focus. In particular, there may be grounds for supposing that all movement rules are motivated in this way, but I would certainly propose such machinery for Passive, Questions, Clefts, Topicalization and Dislocation at least.



As well as examining the function of determiners in relative clauses, Ch. III also looks at the desiderata for the description of relatives, in terms of their relations with other constructions (briefly reviewed in the previous section), and argues for a semantic source identical to that postulated for many (perhaps all) lexical items.

Ch. IV outlines the Generative Semantic (GS) model, and examines its assumptions and its relationship with the Standard Theory (ST) of Chomsky (or specifically, the Aspects-model of 1965). The main innovations in the present work are the incorporation of (i) Fillmorean-type roles, and (ii) a contextual coherence rule. In the VSO structures normally used by GS-ists (and indeed in the SVO structures of ST), the different arguments, or NPs, attached to a Predicate are left undifferentiated as to their function. Thus structures like:

18. (a)



are CONVENTIONALLY interpreted as man, Subject; child, Direct Object; woman, Indirect Object. (I am not, for the moment, considering the possibility that the Indirect Object might be an embedded S with the predicate TO. I would argue that this adds unnecessary structure and processes to the derivation). However, that conventional interpretation (18b) excludes others which arguably have the same underlying structure (18c,d):

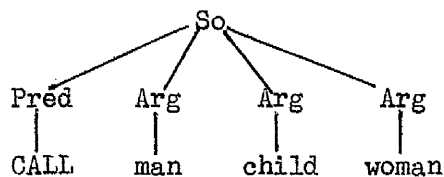
18. (b) (The) man gave (a) child (to the) woman;

(c) (The) man gave (a) child (to unspecified) (for the) woman;

(d) (The) man gave (a) child (to unspecified) (as a) woman,

while other Preds with the same structure as (18a) will actually order their arguments differently:

19.



Furthermore, if, as Postal seems to believe (e.g. 1974: 20 fn., 51 fn., 385), at least some transformations require grammatical relationships to

be stated in their governing conditions, then such relationships must be derivable in underlying structure. I shall argue that grammatical relationships cannot all be stated in configurational terms, as suggested in Chomsky (1965:71), and that they are, in any case, semantic in nature. The incorporation of roles into semantic (or deep) structure would seem to provide the correct amount of specification required there, and also allow any semantic relationship conditioning a transformation to be explicitly stipulated.

My second innovation, aimed at accounting for intersentential relations, is a global coherence constraint (suggested by van Dijk 1972), which differs from those discussed in G. Lakoff 1971 in this way: Lakoff makes a distinction between local and global constraints; the former apply to contiguous trees in a single derivation, the latter to non-contiguous trees. Van Dijk's global coherence constraint applies to (obviously, non-contiguous) trees between different derivations within a single discourse. In fact, a discourse may be defined as a series of derivations in sequence for which the global coherence constraint holds, i.e. in which successive (not necessarily contiguous) sentences are partially similar. Thus a global derivational constraint is a well-formedness condition, or filter, on a single sentence-derivation, whereas the global coherence constraint guarantees connectivity between successive sentence-derivations. In the present study, it functions primarily as a device for handling the deictic implications of relative clauses. G. Lakoff, actually, has independently identified constraints of this extended kind, which he calls transderivational constraints (1973), c.f. section 5.2 below, for discussion.

Also in Ch. IV, which constitutes the formal core of the present work, I give configurational rules and outline a theory of lexicalization (owing much to the work of James D. McCawley). Ch. V shows how restrictive relatives, derived post-lexically, are related to lexical items, derived pre-lexically (I cannot over-emphasize at this point, furthermore, the value and influence on my thinking of that most seminal article, Bach 1968), and then derives non-restrictives (which do not have similar relationships with lexical items), and accounts for the semantic distinction between R and NR. Ch. VI is a critical review of previous work on relativization in TG, with particular reference to its semantic representation. I also append a section briefly reviewing previous work in the analysis or specification of discourse.

CHAPTER II

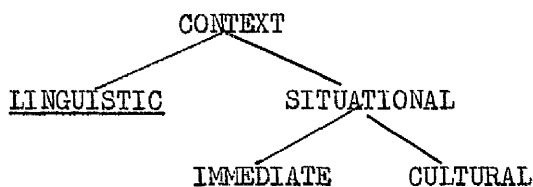
DISCOURSE FUNCTIONS

CHAPTER II: DISCOURSE FUNCTIONS

2.1 Context-of-utterance

Informally, we can divide the context of an utterance into three broad types:

1.



The notion of context in linguistics is one that is invoked more often than it is discussed. Within linguistics, it is probably fair to say that more attempts to capture the idea have been made in Britain and Europe than in America (though in American anthropology and sociology a considerable amount of "programmatically" discussion has taken place; the comparative neglect in American linguistics is presumably another heritage of Bloomfield). Most of the attempts to provide a descriptive framework (rarely more) for situation have concerned the immediate situation (or "setting"); in linguistics, at least, (and this is true of both Europe and America, as far as I am aware), very little work on the cultural assumptions underlying a language and society has ever been attempted. I do not undertake to repair these disparities here. The following merely reviews and, occasionally, suggests, directions of study.

2.11 Immediate situation

In Britain, J. R. Firth's outline for studying the "Context of Situation" (Firth 1950), namely:

- 2. A. The relevant features of participants: persons, personalities.
  - (i) The verbal action of the participants.
  - (ii) The non-verbal action of the participants.
- B. The relevant objects.
- C. The effect of the verbal action.

(Firth 1950: see 1957:182)

arose out of a need first formulated in anthropology to be able to describe the situation surrounding language, and its formulator, Bronislaw Malinowski, saw this in terms of cultural assumptions (1930:301 sqq.). Firth's schema, though, apparently excludes cultural information (or rather, does not explicitly include it). Elsewhere, however, (e.g. 1935; see 1957:32) he visualizes Context of Situation as embedded in the

"Context of Culture". In terms of Fig. (1), however, (2) clearly does include information from both the linguistic context (A(i) and C: but why not the events leading up to the verbal action?) and the immediate situational context (A - but only if this is meant as a separate category from A(i),(ii); if A(i),(ii) are meant to be exhaustive subcategories of A, however, then the only situational information it contains concerns actions. C does give situational information, however). These questions aside, though: the most telling problem in the schema is deciding, in a principled way, what is "relevant".

Firth's Context of Situation was transmuted and incorporated by Halliday and his associates into a theory of language functions (or rather, several related theories). Perhaps the most developed of these in practical terms is the most recent: Sinclair and Coulthard 1975, in which discourse is a linguistic level lying between Grammar and Non-linguistic Organization. The exponents of discourse (and specifically, classroom discourse) are: lesson, transaction, exchange, move, act, in descending order. These ranks are each linked to the next below through classes of the lower rank realizing structures of the higher rank. The three major acts (the lowest rank of discourse) are elicitation, directive and informative and they overlap to a considerable degree with the grammatical categories (realizing the rank of clause) interrogative, imperative, and declarative. That the fit is not complete, however, can be seen by the common occurrence of, for example, interrogatives having a directive function. Sinclair and Coulthard therefore suggest two "intermediate areas"<sup>1</sup> where distinctive choices can be postulated", (p.28): situation and tactics. Tactics is more or less equivalent to part of what I have in (1) called the linguistic context, that part which deals with the "syntagmatic patterns of discourse". (I would conceive of the linguistic context as accounting for paradigmatic possibilities, however, as well as syntagmatic occurrences). Situation is said to include "all relevant factors in the environment, social conventions and the shared experience of the participants" (ibid.). The resemblance to Firth's

1 I find this notion of "intermediate area" somewhat hard to grasp: since this appears in the context of a lack of fit between grammar and discourse, I take it this is where situation and tactics have their domain. I can understand the latter as being of concern to both grammar and discourse, and therefore in some sense intermediate between them; but this seems to apply to situation not at all, since if anything it surely ought to be subsumed under "Non-linguistic Organisation".

Context of Situation in (2) above is obvious: I doubt not that Sinclair and Coulthard would acknowledge as much. The difficulty, however, as they freely admit, is again to determine what is "relevant". Now, clearly, relevance depends upon your theory, explicit or implicit. So far, we lack a theory of situation: linguistics in this respect is today in a rather similar position to linguistics twenty years ago in respect of syntax. There are plenty of programmes (e.g. Slama-Cazacu 1961; Hymes 1964, 1971; Goffman 1964; Ellis 1966; Cazden 1970), and even some taxonomic frameworks, some more comprehensive than others (e.g. Sinclair and Coulthard 1975; Halliday 1972). But perhaps this historical similarity can be of help. Pre-Chomskyan syntactic studies were orientated towards the description of the data: sentences, utterances, phonetic sequences, or whatever. Chomsky's invaluable innovation was to show that the central mysteries of language were its acquisition and creativity, and that these could not be explained without a general theory of (all human) language, allowing the formulation of language-specific grammars (aimed at accounting for all and only the grammatical sentences of each language), having formal universals (types of rule, permitted types of configuration etc.) and substantive universals (categories, and later, features, and still later, constraints or filters). Situation study is in the pre-revelation stage now: attempts are being made to describe the data (participants, social conventions, settings etc.), with varying success, but all of this is in vacuo. If the analogy with syntactic study may be pursued, we now need a general theory of (human interaction with) situations, allowing the formulation of culture-specific situation-"grammars" (perhaps aimed at accounting for all and only the possible situations in the culture). If, in view of the complexity, the infinitude and the ill-determinedness of the notion of "possible situation", it might be objected that this goal is impossible in principle, I would only point out that the widely-accepted goal of modern transformational syntax "to account for all and only the grammatical sentences of the language" is based on the no less complex, infinite and ill-determined notion "grammatical sentence". Just as we can analyse sentences into basic configurations plus filtering rules, the former matching the meaning of the sentence, the latter regulating its form, so, I surmise, we ought to be able to analyse situations into basic configurations of elements plus, perhaps, rules relating these to actual situations. But situational study is at an immediate disadvantage: the basic elements of syntax, whichever competing theory you use,

have been used and studied for centuries, so that they at least provide a starting-point for setting up configurations. Situation has no such categories or elements ready-made - it must be the first urgent task of its study to isolate them. My own hypothesis would be that the way in which human beings structure situations is semiotically equivalent to the way they structure language (not because of any requirement of the primacy of language, but because this way of dealing with externals is a fundamental characteristic of the human mind). Seiler (1970) points out that any semiotic system includes these three basic notions:

3. (i) Categories (or: units, elements, constituents);
- (ii) Relations;
- (iii) Properties (or: features).

Taking the above hypothesis one step further, then, we might apply (3) to situations, with the following result:

4. (i) "Objects", material or abstract, discrete or complex, and including an "Ego";
- (ii) Relations: see below;
- (iii) "Predicates"; whatever is attributed to the objects.

The "relations" might include relationships between objects and space (location-direction), between objects and time (point-frequency-duration), between objects and modes of existence (quantification), and between objects: power (status, importance, property), resemblance, order (pattern, class), including those between "ego" and the other objects: perceptive, affective, moral and social relations. The "predicates" might include subdivisions of form (size, shape, structure etc.), presence or absence of mobility (motion, growth, change) and causation; there might, further, be relations between objects and predicates: volition and manner come to mind. All of the foregoing is undoubtedly over-simple, and it is not really a proper part of the present work to develop a full-blown theory of situation. But theories of discourse clearly need a firm basis in such a theory, as do theories concerning language variety (register, "sociolect" etc.).

#### 2.12 Linguistic context

So far, I have mainly discussed immediate situation. Firth, at least, as I have mentioned, provides a place in his scheme for linguistic contextual information. But apparently the only suggestion made by him in

print for incorporating information of this sort concerned collocation, which he defined (1956; see Palmer 1968: 106) as "the company [words] usually keep". (He also distinguished collocation from "contextual meaning", "which is the functional relation of the sentence to the processes of a context of situation in the context of culture" (1951; see 1957: 195), though it is difficult to see how collocation is not contextual). The study of linguistic context in its entirety, however, is obviously the task of discourse grammar (or "text grammar"), a field of study which has emerged only comparatively recently, and which I review in some detail in section 6.2 below. As we have already seen, the scholarly heirs of Firth, the Hallidayans, have made this logical extension to Firth's ideas. Sinclair and Coulthard's 1975 book is Towards an Analysis of Discourse (note: "analysis", rather than "grammar"), and this is attempted by the erection of a taxonomic framework of categories and exponents, which is applied to the data. See section 6.2 for further comments.

### 2.13 Cultural context

Cultural context has been widely studied by anthropologists, ethnologists and sociologists, and a certain amount of formalization has been achieved (e.g. in the work of C. Lévi-Strauss). In linguistics, it has been but sporadically discussed. Interesting work has, however, been done in recent years on small aspects of this mammoth task by the Lakoffs and their associates (e.g. G. Lakoff 1969, Gordon and Lakoff 1971, R. Lakoff 1971a), taking up work on conversational logic by the philosopher H. P. Grice (e.g. 1968). An early, informal statement of the notion appears in George Lakoff's 1969 article during discussion of the following sentences:

5. (a) John told Mary she was ugly, and then she insŭlted hím.  
 (b) John told Mary she was beautiful, and then she insŭlted hím.

(where the accent indicates contrastive stress, and the micron reduced stress). Lakoff points out that (a) and (b) are well-formed relative to the following presuppositions:

6. (a) That John told Mary that she was ugly entails that John insulted Mary;  
 (b) That John told Mary that she was beautiful entails that John insulted Mary,

and that any English speaker's linguistic competence will pair sentences



(5a), (5b) with the presuppositions (6a) and (6b) respectively. "However", Lakoff goes on to say, "most English speakers come from a cultural background that makes the following assumptions:

7. (a) Telling a woman that she is ugly constitutes an insult (under normal conditions);
- (b) Telling a woman that she is beautiful does not constitute an insult (under normal conditions)".

(1969: 1971 version, pp.336-7)

Lakoff then goes on to distinguish between ill-formedness, which is defined for matched sentences and presuppositions, and deviance, concerning "the use of a sentence in a given context" (*ibid.*).

In Gordon and Lakoff 1971, this distinction is to some extent formalised in logical structures, although as the authors admit, many of the elements therein are unclear and "fudged". This, they concede, is inevitable in a first statement of an innovating principle. However, what is important is that such a statement should have predictive value and be refutable, therefore improvable.

Briefly, Gordon and Lakoff set up contextual conditions (which state social assumptions about speech acts, and derive spiritually from Grice's Cooperative Principle), specifically, those dealing with the, respectively, sincere and reasonable use of speech acts. An example of the former analyses the sincerity conditions governing requests (2 sqq.):

8. "if a sincerely requests of b that b do R, then a wants b to do R, a assumes that b can do R, a assumes that b would be willing to do R, and a assumes that b will not do R in the absence of the request."

They then observe that the speaker can convey a request in one of two broad ways: taking the conjuncts in the then-clause of (8), the speaker can either assert what is predicated of a (viz. want..., assume...), or else question what is predicated of b (viz. FUTURE + verb, can + verb, would be willing to + verb, will not + verb). This constitutes a set of conversational postulates derived from the contextual conditions governing the sincerity of requests.

What Gordon and Lakoff are characterizing here are some of the cultural assumptions at least of English, though one would imagine those I have cited to be very general. In particular, we are here encountering social conventions, as opposed to linguistic rules, governing the use of

language in a social context. If this were all that the conventions did, then linguistics could continue to draw the now-traditional distinction between competence and performance, with all information concerning language in use part of the latter. However, there is a crucial area of overlap: meaning. If one of the tasks of a semantic theory is to correctly characterize and account for meaning-relations, such as ambiguity, synonymy etc. (e.g. Katz 1972: 4 sqq.), then it seems difficult or impossible to distinguish between cases of those involving competence rules exclusively and those involving both competence and performance rules. Thus the sentences:

9. (a) Are you going to let the Syndicate protect you?

(b) You're going to let the Syndicate protect you.

may or need not be synonymous, and each of them is ambiguous, several ways. Clearly, though, if these facts had to be described using an interpretivist model (see Ch. VI), a completely ad hoc set of deep structures would have to be concocted, in order to account for all the distinctions, using competence rules exclusively. But if the model is expanded to allow for performance information, as Gordon and Lakoff have done, then the meaning-relations of (9) can be satisfyingly described in a non-ad hoc manner.

#### 2.14 Criticisms: competence and performance

Katz and Bever 1974 criticize Gordon and Lakoff 1971, Lakoff 1968c and other papers by Lakoff, chiefly on the grounds that they relativize the notion of well-formedness and extend the notion of competence to include "a host of non-grammatical facts about the way things are in the world such as what speakers, hearers, people spoken about, etc. believe" (p.22). Katz and Bever are undoubtedly correct in their assertion: Lakoff does extend and muddy the "classical" notion of competence with data from language use. But I would maintain that the notion of "competence" is a notoriously muddy one, anyway: it is instructive that in order to define this concept, Katz and Bever have to fall back on the equally unclear pretheoretical criterion of "antecedently construed as grammatical ... as the result of both our intuitions and the work of descriptive grammarians of the past" (p.51). This does not seem to exclude Lakoff's work.

When Chomsky first drew the distinction between competence and performance, it is perfectly clear that by the latter he meant to include the "pathology" of language in use: mistakes, false starts, hesitations, memory limitations, lapses of attention, concentration and so on. The distinction was a necessary corrective to the declared ideals of corpus-based theories of language description, (which in practice actually made the same exclusions, though covertly). The crucial distinction between grammaticality and acceptability, using the example of multiply self-embedded constructions, made it clear that the process of self-embedding, a process of competence grammar, was perfectly grammatical. The fact that acceptability declines sharply after two or three applications of the rule is related to a short-term memory limitation in human performance. C.f. also Katz and Bever: "linguistic competence is distinguished from performance primarily in a negative way by the fact that the latter involves matters not relevant in the explanations of such intuitions [i.e. about aspects of sentence structure], e.g. limitations stemming from the nature of the organism's psychological mechanisms, which restrict immediate memory, computation time, and information access" (p.23). If such limitations did not exist, if human beings never made mistakes, were always unflinching fluent, and so on, the notion of performance, as originally conceived, would have no practical value: "competence is reflected by ideal performance" (Chomsky 1965: 4). Thus we might match Katz and Bever's charge that Lakoff has (illicitly in their view) extended the scope of competence, by charging the Katz-Chomsky axis with a parallel extension of the scope of performance, to include the non-pathological facts of language in use. Thus, Katz and Bever again: "the competence principles that determine the grammatical and anything else that combines with them to produce performance" (p.19, italics mine).

Competence is an abstract, formal object which explicates the internalized language-rules of a speaker. Its relationship to those rules cannot be claimed to be more than analogical. Since it is an abstract, formal object, the criteria for defining, describing and assessing it must themselves be abstract and formal. It is noteworthy that as soon as any attempt is made to make the notion more pragmatic, e.g. by relating it to "psychological reality", it becomes quite clear that competence is entirely different in nature from a "real-world" system, since it is a hermetically-sealed device. This is why the

notion of intuition providing the data for constructing a grammar of competence has never been satisfactory (c.f. the quotation from Katz and Bever p.51 above). Katz and Bever correctly observe (p.16) that we cannot decide questions of grammaticality using a formal grammar, unless we have independent means of assessing and constraining grammars, and they note that "semantic explications" have this function. But once you allow semantic data into your competence grammar, you are opening the floodgates of language meaning, belief systems, context and so on (as Chomsky himself has always been aware). This immediately relativizes the notion of competence, by forging vital connections between it and semantic primes, since these latter can have no content unless they correspond with real attributes and properties (cf. Searle 1972: 22): competence is still a formal object, but no longer an exclusively abstract one. Notice that competence as expounded by Chomsky is neutral between speaker and hearer. If, however, we were to look at "hearer competence", i.e. what is constituted in understanding sentences, even if we were to ignore the effects of language-use (context etc.), the process would be one of interpretation, i.e. hypothetico-inductive. "Speaker-competence", on the other hand, is clearly compositional rather than interpretive (not in the sense of actual sentence production, but in the sense of rules relating deep structures to surface structures). Generative Semantics has abandoned the traditional Chomskyan definition of competence, therefore, in favour of a speaker-oriented one, in which belief-systems such as those of (5), (6) and (7) are in some sense "selected for expression" by the speaker. Notice that surface-structure interpretation rules, as used in the "Extended Standard Theory" (EST), appear to be, at least to a degree, hearer-oriented.

A competence model, making black-and-white distinctions of grammaticality, has undoubtedly been an essential idealizing stage in linguistics, just as an idealized model of the atom or the gene is essential in physics or genetics. A model is a metaphor for the relationships which exist in the universe between elements of different types, and also elements of the same type. But there are important insights for the linguist, just as there are for the physicist or geneticist, from studying the interactions and, one might say, distortions of the model in real situations.

This constitutes my justification for the inclusion of context in linguistic theory. The insights it provides include the explanation of

deictic processes and the motivation for focussing operations of all kinds, from sentence-stress to movement transformations.

To sum up, then, the distinctions between the various senses of (9) are almost all social in cause, which is to say that they fulfil different sociolinguistic/ speech-act/ conversational functions. We clearly cannot define a speech-act such as questioning by formal criteria alone; instead, I would suggest that all such definitions must be couched in terms of a tacit contract between the participants in the speech-act. When asking a question (i.e. genuinely requesting information), the questioner, by signalling in a certain way, both verbally and paralinguistically, should be considered to have agreed to embark on a certain sort of activity, whereby, for example, the questioner would be expected to allow his listener the opportunity to answer. The "agreement" can be broken in both directions: on the speaker's side by not allowing his listener to reply, or by answering himself, i.e. by turning what has been assumed to be a genuine question into a rhetorical one, and thereby altering the nature of the conversational contract (e.g. from a conversation into a harangue, speech, or lecture, for instance); and on the listener's side by remaining silent (refusing to take part at all), answering inappropriately, or whatever. Gordon and Lakoff's work, therefore, is an important exercise in the formalization of these ideas, which belong in the theory of language. The data concerned were earlier simply not included either under classical competence or classical performance: Lakoff wishes to include them in the former, Katz and Bever in the latter. I would argue that it really does not matter, since the original dichotomy was simply an operational decision to exclude irrelevant data. Linguistics has now reached the stage where perturbations in the original, context-independent model are becoming too violent to ignore, so that a theory of contextual influence must now be constructed to explain them: whether such a theory is regarded as a performance function does not really matter, so long as it is not thereby shrugged off as "empiricist" (Katz and Bever) or "pragmatic", and in some way outside of pure linguistic theory. (In any case, theories of natural language can never be "pure" in the mathematical sense, since they must always have some empirical application, and also, as I have shown above, some connection with realia).

### 2.15 Grammaticality: contextualizability

The notion of grammaticality, as we have seen in the previous section, is intimately bound up with that of competence. However, interpretivists like Katz seem to use the two notions in circularly arguing for each other: thus, competence rules derive from an absolute distinction between grammatical (well-formed) strings and non-grammatical (ill-formed) strings, while at the same time, judgements of grammaticality must derive from competence rules. As we have seen, judgements of grammaticality depending upon performance facts are stigmatized as "empiricist".

However, as I shall show in Ch. VI, the very machinery of Katzian interpretation depends to some extent upon belief-systems etc. R. Lakoff's (1971b) paper on conjunction shows that the choice of and, but etc. depends on knowledge of pragmatic presuppositions and deduced assumptions. Sentences whose presuppositions match may be conjoined with and, roughly speaking, and those with contrastive presuppositions with but. It may be thought that this begs the question. After all, why shouldn't any conjunction of two clauses be regarded as fully grammatical, and even indeed fully well-formed semantically, any oddity then being viewed as a pragmatic problem? In any case, it is probably possible to devise a situation which will interpret any conjunction of clauses. If you try to account for such pragmatic oddities, as the generative semanticists attempt to do, by making grammaticality relative to belief-systems, etc., you are really stretching the notion of grammaticality too far, it may be argued, (and is, e.g. in Katz and Bever, op. cit.). But on what grounds can "semantic" be delimited in this aprioristic way? By what criteria are we to judge "semantic well-formedness"? Clearly, these things are defined in one's semantic theory, rather than a priori, so that some of the above objections really boil down to the problem of evaluating different theories, which is of quite a different order. Furthermore, what we regard as "grammatical" depends entirely upon how much our grammar is defined as embracing: and it is not unusual to define it as including semantics. In practical terms, though, grammaticality is a notoriously ill-defined notion: it straddles the basic conflict between the goal of specifying a universal linguistic theory (and even to some extent a universal grammar), and, in the face of this, the fact of linguistic variation (down to idiolect and beyond). The latter forces

us to compromise the former to the extent that we have to use "grammatical" to mean "in respect of Language X": this is already to relativize the notion. The GSists (and George Lakoff in particular), would merely claim that "grammatical for Language X" really includes "grammatical for Culture X", which, if seen in perspective, is not a revolutionary broadening of the idea. Not even Lakoff, I think, would go so far as to attempt to account for the belief-systems of individuals. I would therefore suggest that the term "grammatical" as it has always been used in TG is nothing other than a mealy-mouthed equivalent for "easily contextualizable", while conversely, I suggest that "ungrammatical" as used in modern linguistics cannot mean anything other than "uncontextualizable", or to be more precise "having a low probability of contextualization". Bazell 1964, however, distinguishes between a grammatical constraint, and a semantic restraint, the former analogous to the rules of a game, the latter to the dictates of sensible play. He argues that the former should not intrude upon the latter: grammatical distinctions do not necessarily have a "semantic tie-up", though they sometimes do. Bazell argues that the restrictions on, e.g. the verb scatter are semantic and not syntactic (Chomsky 1965 takes the opposite view); Bazell's view of the scope of syntax is therefore narrower than Chomsky's: his view of the scope of semantics is therefore, perhaps, correspondingly broader.

To give an instance of this notion of contextualizability, it is a commonplace of the newly-emerging field of discourse grammar that the restrictions on conjoinability (cf. Gleitman 1965) are semantic in nature: it is not the case that any two sentences may be conjoined:

10. <sup>#S</sup> Edward Heath is a Maoist and Trill makes your budgie bounce  
with health,

but this is a natural consequence of the fact that the same pair of sentences cannot form a coherent discourse:

11. <sup>#D</sup> Edward Heath is a Maoist. Trill makes your budgie bounce  
with health,

(where <sup>#S</sup> and <sup>#D</sup> mean "ungrammatical as a sentence", and "as a discourse", respectively). We should be asking therefore, why the disconnected sentences (10) and (11) are incoherent. The informal answer is that there is no rapprochement between their subject matter, they do not occur within the same "universe of discourse", "semantic field" etc. Thus, one could say that (10) and (11) are "ungrammatical" with a fairly clear

conscience, unless one were of the opinion I have expressed above, that the conjunction of any two clauses is grammatical, any oddity being "pragmatic". To be sure, if absolutely pressed, one can in fact think of a context for both (10) and (11):

12. "Give me any two slogans",

(which is in fact an invitation to provide a disjoint list), or even, in a "flyting" vein:

13. "Edward Heath is an ailing Fascist budgerigar who is incapable of anything else but eating his Trill while Rome burns"

(in which context, (10):(11) are contradictory and corrective in purpose).

However, the ludicrous and desperately metaphorical nature of this particular context (13) is a fairly clear sign that the contextualizability of (10) and (11) is low, i.e. that they are "ungrammatical" in the suggested sense, (cf. Jackson 1972, who even contrives to make quite an acceptable poem contextualizing Colourless green ideas sleep furiously (p.54) !).

Context (12), on the other hand, is a metalinguistic request, the response to which will be citation forms. Thus, to say that (10) is S-grammatical or that (11) is D-grammatical is in some sense equivalent to saying that such a sequence as Henry black if vow seven you is S- (or D-) grammatical when given in response to the request "Give me any six words". But cf. Ruth Kempson 1973a: 126 for a different view.

#### 2.16 Thompson 1971: "Speaker assumptions about hearer knowledge"

Sandra Annear Thompson's 1971 paper: "The deep structure of relative clauses" is an attempt to prove that both R and NR relatives derive from underlying conjunction, despite the usual assumption that the former, at least, is the result of an embedding operation. The author asserts that there is no structural difference between R and NR, and that the perceivable semantic difference is "a function of the presuppositions which the speaker has about the extent of his hearer's knowledge" (p.82):

"The differences between restrictive and non-restrictive relative clause sentences are not of the sort that ought to be represented structurally: instead they are differences representing a speaker's decision about how to present to the hearer information present in the underlying representation" (p.87)

As an example of this assertion, Thompson takes the NR and R sentences:

14. The boy, who works at the library, is majoring in philosophy.

15. The boy who works at the library is majoring in philosophy.



These, she says, both have the underlying representation:

16. (Boy works in library) (boy is majoring in philosophy)

"For [14] the speaker has decided that the boy is already known to the hearer; the speaker is adding two pieces of information about the boy. For [15] the speaker assumes that the hearer knows about the boy who works at the library; the can be used with this NP, and the information which the speaker assumes to be new appears as the main predicate" (*ibid.*)

Presuppositions also figure in her account of the choice between definite and indefinite (which, she says, has no effect upon the meanings of the nouns and verbs and the relations among them), and also the selection of which of the underlying conjuncts is to become matrix and which constituent sentences. Take the following underlying conjunction:

17. (I met girl) (girl speaks Basque)

According to Thompson, depending on "certain suppositions on the part of the speaker about what the hearer knows", any of the following sentences can be realizations of (17):

- 17. (a) I met a girl and she speaks Basque.
- (b) There's a girl who speaks Basque, and I met her.
- (c) I met a girl who speaks Basque.
- (d) A girl I met speaks Basque.
- (e) The girl I met speaks Basque.
- (f) I met the girl who speaks Basque.

(a)-(d) (which the reader will notice all have an indefinite article before girl) represent a speaker presupposition that his hearer knows nothing about the speaker's meeting with any girl, nor about any girl's linguistic abilities with regard to Basque. (e) and (f), (which both have a definite article), however, presuppose the first and the second conjunct respectively. Thus (a)-(d) are, presumably, to be taken as synonyms, and (e) and (f) are converses, as far as presupposition and assertion are concerned. The claim that Thompson is making, therefore, is that the focus distinction which exists with definite noun heads and relative clauses is neutralised with indefinite noun heads and relative clauses, which latter she regards as synonymous with the equivalent sentences conjoined in any order. It has been maintained (by Chomsky 1970) that focus and presupposition are complementary notions (which Chomsky furthermore regards as superficial), and I take this to be essentially correct for some results of focus and some presuppositions.

Thus in

- (e) The girl I met speaks Basque  
           PRESUPPOSITION            FOCUS

the presupposition is the "old", "given" information and the focus is the "new" information (with an overlap across the antecedent of the relative clause, of course). This I take to refer to the identical phenomena to which the terms TOPIC and COMMENT traditionally apply (but see section 2.3).

Let us return, however, to our examination of Thompson's paper. Let us call the conjuncts of sentence (17), (17<sup>1</sup>) and (17<sup>2</sup>). A point to be noticed straight away is that (17) seems incomplete; we need to stipulate at least:

- (a) an existence predicate (E): 'There exists girl',  
 (b) an identity condition (I) on the 'girl' of (E), the 'girl' of (17<sup>1</sup>) and the 'girl' of (17<sup>2</sup>).

Now, (17a) implies (E), (17<sup>1</sup>), (I), and (17e);

(17b) implies (E), (17<sup>2</sup>), (I), and (17f);

(17c) implies either (A):

(E), (17<sup>1</sup>), (I), and (17e); [= (17a)]

or (B):

(There exists someone), (I met someone),

(someone = girl), (17<sup>2</sup>);

(17d) implies either (A):

(E), (17<sup>2</sup>), (I), and (17f); [= (17b)]

or (B):

(There exists someone), (someone speaks Basque),

(someone = girl), (17<sup>1</sup>).

The significance of differentiating (A) from (B) is that sentences (17c) and (17d) are ambiguous between:

(17cA) I met some girl and the girl I met speaks Basque.

(17cB) I met someone, namely, a girl who speaks Basque.

(17dA) Some girl speaks Basque and I met the girl who speaks Basque.

(17dB) Someone speaks Basque, namely, a girl I met.

Sense (B) in each case is clearly restrictive, though in a different way from sense (A). Sentences (A) represent short discourses, i.e. sentence-sequences, connected in this case with and; a full-stop would

have been equally acceptable. The connectedness between the two halves of (17cA) and (17dA) is more or less the sort of thing that Thompson calls presuppositions (although she asserts that in the case of sentences (17c) and (17d) there are none; as I have shown above, the use of pronouns, either personal or relative, constitutes in itself a use of presupposition different from that in sentences (17e) and (17f) only in that the preceding context is explicit rather than implicit - and this is a result of the artificial limitation of examples to sentences only). Thus (17a)/(17cA) and (17b)/(17d) demonstrate the definitization function of Rs in that anaphoric the is semantically equivalent to a relative clause containing "given" material, (cf. Thorne 1972a). (17cB) and (17dB) on the other hand show a more clearly embedded R whose function is to define its antecedent noun and contrast it with other tokens of the same type. This particular function is the restrictive effect par excellence, and is often rather difficult to pinpoint with indefinite heads, though perhaps a different example may clarify the situation:

18. I met a king who had just abdicated.

Now, a king who has just abdicated is no longer a king, but an ex-king. Therefore, sense (18A), equivalent to (17cA) and (17dA) is contradictory. But sense (B), equivalent to:

(18B) I met someone, namely, a king who had just abdicated  
makes perfect sense, since it also makes sense to say:

(18<sup>1</sup>) The king has just abdicated,

whereas it no longer makes sense to refer to that person as a king, tout court. More telling examples can be constructed. For example, some of Chomsky's instances (1965:77) of "purely semantic (or "pragmatic") incongruity":

19. I'm memorizing the score of the sonata I hope to compose some  
day,

20. That ice-cube that you finally managed to melt just shattered,  
are clearly related to the contradictory sense of sentences like (18).  
The (18A)-type sense of

21. (a) I drank that ice-cube that you finally managed to melt  
(which is a perfectly grammatical and "sensical" sentence) would contain  
a selectional deviation, namely

21. (b) \*(I drank that ice-cube)

whereas the (18B)-type sense is completely acceptable and is in fact the  
way in which the sentence must be interpreted.

In the same way, (17c) (which I claim from the above evidence must be taken as a restrictive relative, i.e. as sense (B)), does not merely imply 'I met a girl', but rather 'I met a Basque-speaking girl'. Let us try another test, by replacing I met in (17c) with another matrix S:

22. The Foreign Office requires a girl who speaks Basque.

Now clearly, if it were logical to deduce from that that the Foreign Office simply required a (non-specific) girl, they would have no cause for complaint if they were deluged with hundreds of non-Basque speaking girls after the job advertised. In fact, however, they have every reason for expecting that all their applicants will be girls who speak Basque.<sup>2</sup> Contrast this with:

23. The Foreign Office has interviewed a girl, who speaks Basque and is a member of the Basque Separatists.

From this, it is quite logical to deduce that the Home Office has interviewed a girl. We can see, therefore, that even indefinite nouns can take either R or NR, although the distinction is often obscured by the lack of contrastiveness evinced by an indefinite.

Such differences of implication as those I have discussed in the foregoing paragraphs, like the differences of presupposition and focus mentioned earlier, are properties of the discourse-function of sentences, and this can be demonstrated by their behaviour in responses, since the form of a response will depend on the presuppositions etc. expressed or implicit in the question. I shall give this facet of the question more careful scrutiny presently, contenting myself for the time being with a very perfunctory observation about the questions to which sentences (17a-f) might be responses:

24. (a) {What did you do } when you were out?  
 (c) {Did anything happen }  
 (b) } Is there anybody interesting in the village?  
 (d) }  
 (e) Did any of those people speak a foreign language?  
 (f) Did you run into any of those interpreters?

<sup>2</sup> However, F. Rasquin points out that (22) might be ambiguous, particularly if is looking for is substituted for requires, between the sense in which the F.O. is looking for some known girl with that attribute, and the sense in which any girl who fulfils that condition will be suitable (which is the sense I have used above). French would distinguish between qui sait parler le basque and qui sache parler le basque, (cf. McCawley 1970a:175, on a similar distinction). Both are restrictive, but they reflect different underlying specification.

The (a)/(c) question concerns an event or an action; the (b)/(d) question concerns persons encountered; (e) presupposes that some people had been encountered and invites some subset of that group to be observed for a special property, namely, speaking a foreign language; and (f) presupposes that the listener has met some people, and that there is a group of interpreters, and asks whether the two sets intersect. The responses are separately appropriate to these questions (and possibly to other questions too, of course - which will, however, given an "unmarked" intonation pattern in the response, be of the same general semantic structure as these). Thus (17a) concerns an event, 'I met a girl', and adds some descriptive information about the girl; (17c) is similar, but the information about the girl is more closely connected with the main response. (17b) is about a particular person, 'There's a girl who speaks Basque' (and the information about her is closely connected as in (17c)) and adds that the speaker met her; (17d) presents the same information in a more tight-knit form. (17e) isolates one of the group presupposed in the question, 'the girl', and specifies which foreign language she speaks. (17f) answers that the two sets do intersect at least to the tune of one of the interpreters, and adds that this was the interpreter responsible for Basque and was a girl. (However, the same sentence, particularly with marked intonation, could imply quite different presuppositions, e.g.

25. There exists a girl who speaks Basque  
(and we have discussed this previously)

If we can stipulate the presuppositions, though - from the context - we can specify the precise form of the sentence and its stress-pattern, up to free variation.

It should be noted that in her discussion of Rs, Thompson nowhere examines plural noun instances, which is unfortunate since they provide clear illustrations of the set intersection notion. However, I shall be discussing these myself to some extent presently (see sections 3.12 and, briefly, 5.2).

Later in her article, Thompson reiterates the assertion that "the differences between restrictive and non-restrictive relative clause sentences are not of the sort that ought to be represented structurally; instead they are differences representing a speaker's decision about how to present to the hearer information present in the underlying representation", (p.87). We have seen that there are greater differences than

Thompson notes. Are these amenable to such a notion as "speaker's assumptions"? Thompson uses the sentences:

26. The boy, who works at the library, is majoring in philosophy,

27. The boy who works at the library is majoring in philosophy, and claims that in (26) the speaker decides that 'the boy' is known and adds two pieces of information about him, and that in (27) the assumed known portion is 'the boy (who) works at the library', which then has one item of information added. Let us begin by attempting to contextualize these sentences: (26) could never (or more accurately is highly unlikely to) appear as the opening S of a discourse, or as an isolated S (apart from in linguistics books, that is): it would have to be uttered in a situation where an individual was known as "the boy", or perhaps "the Boy", i.e. as a Proper noun, or at least a "homophoric" noun (see below). Alternatively, if there were both a boy and a girl present in the situation, say, (26), accompanied by appropriate paralinguistic signals, could represent a first-mention utterance with contrastive force (John Lyons [personal communication];. He adds also that this does not affect my argument, provided that "previous mention" means something like "already included in the universe of discourse"). As is made clear in section 2.11, I do in fact regard the immediate situation as in some sense semiotically equivalent to verbal context. However, even so, and even with a boy and girl simply begging to be contrasted, and a whole pantomime of gestures and grimaces, I must say that (26) still strikes me as a very unlikely discourse-initiator (though note I do not discount it entirely, cf. section 2.15). In fact, English has other deictic strategies for dealing with that sort of situation, notably this and that. These, it has been argued elsewhere, (in Thorne 1972a, and by Lyons himself, 1973), might be regarded as equivalent to this... here and that...there respectively, and therefore not as anaphoric at all, but cataphoric! (Lyons 1973 actually regards this interpretation as only one, admittedly the most usual, of four possible interpretations of that in that boy). (26) would usually presuppose a defining context such as:

28. As I was walking down Oxford Street yesterday, a boy tripped over in front of me and dropped a pile of books on my feet. (26), and he had been walking along, sunk in Kant, and not looking where he was going.

The speaker can "assume that the referent of 'the boy' is known to the hearer", therefore, since that referent has been explicitly pinpointed in the preceding discourse, and the syntactic behaviour of the NR in question can be accounted for quite easily by rules already in existence for intrasentential phenomena. (27), on the other hand, could easily start a discourse off, because it is self-defining: the contextualization of the head N is contained in the whole NP, which functions as a unit:

29. (27), but the man who works in the garage is taking a course in cake-making.

Notice that the same context is queer for sentence-conjuncts representing Thompson's suggested DS for Rs:

30. ?The boy works at the library and  $\left\{ \begin{array}{l} \text{he} \\ \text{the boy} \end{array} \right\}$  is majoring in philosophy, but the man who works in the garage is taking a course in cake-making,

partly because The boy who works at the library can be cataphoric and can therefore initiate a discourse, whereas The boy works at the library is not and cannot; and partly because the antithetical structure of the whole sentence (30) calls for isomorphism, present in (29), where The boy who works at the library is paralleled by The man who works in the garage and is majoring in philosophy is paralleled by is taking a course in cake-making. Even pronominalisation of the second the boy in (30) does not rescue the sentence from oddity as a discourse-initiator. Conversely, it should be remarked that (28) is quite acceptable with (26) replaced by the conjuncts underlying it, but becomes quite unacceptable with (26) replaced by (27). These facts demonstrate that the head noun of NRs cannot simply be assumed by the speaker to be known to the hearer, but must occur preceded by a prior reference in the discourse. (Proper noun heads, which can of course take NRs, seem to be the exception to this generalisation):

31. Arthur Molestrangler, who once was the darling of Europe, now lives in Comparative Obscurity, a little village in Sussex. (31) could occur as a discourse-initiator, particularly in journalistic English. However, I would maintain that proper nouns are very different from common nouns, both semantically and syntactically, in that their use subsumes a vast amount of defining material. Compare the following sentences as discourse-initiators:

32. #Last week, a man broke into a bank in Wapping  
33. \*#Last week, the man broke into a bank in Wapping

34. #Last week, the man who broke the bank at Monte Carlo broke into a bank in Wapping

35. #Last week, Sir Alec Douglas-Home broke into a bank in Wapping ((33) is of course acceptable as a non-initiating sentence). (35), I would argue, is similar to (34) in that the appellation Sir Alec Douglas-Home stands as a label for any subset of a large number of attributes associated with that individual, and represented as restrictive clauses, e.g. 'The man who was Prime Minister of Great Britain from 1963-1964', 'the man who was Foreign Minister from 1970-1974', 'a man who is fond of Grouse-shooting', 'a man with a skeletal appearance' and so on. I am claiming, therefore, though without arguing the case here, that proper nouns are definite descriptions, and as such are similar to restricted common nouns. In fact, I would argue that the use of proper nouns is in principle no different from the use of common nouns, except that proper nouns have no (or very limited) class-attributes. If I use the common noun table of an object, my listeners have prior knowledge of what some of the attributes of that object might be, by virtue of its membership (if correctly identified) of the class 'tables' and of their knowledge of that class. If, however, I refer to some object as Harold Wilson or Ontario, my listeners do not have that kind of knowledge, since there is no class of 'Harold Wilsons' or 'Ontarios'. Nevertheless, that apart, when I use either a proper or a common noun in referring to an "object" (which may be simple or complex, concrete or abstract, real or imagined, i.e. my use of 'refer' here need not be taken as presupposing existence or tangibility), I am not in fact alluding to that object as a discrete entity of some kind, but instead as a collection of attributes (or, more accurately, to some criterial subset of that set of attributes), some of which are physical recognition criteria, perhaps, (and very complex perceptually), and some to do with functions, characteristics, relationships, and so on, (which again may be very complex structurally). For Harold Wilson, this list might contain 'the present leader of Her Majesty's Government', 'the present leader of the Labour Party', 'the man who was Prime Minister from 1964 to 1970', 'a man of such-and-such a physical appearance', 'a man who habitually smokes a pipe and wears a Gannex raincoat', 'a man who has a wife called Mary, a son called Giles, and a holiday home in the Scillies', etc., etc. (The list might of course be partially different,



or even completely so - possible because a different "Harold Wilson" is being referred to). To understand that I am referring to some particular individual rather than some other one, my listener must also have access (via the signal Harold Wilson) to the same set of attributes, or at least some criterial subset of it. Note that communication cannot take place without both speaker's and listener's knowledge of that set of attributes overlapping to some considerable extent. I would maintain, furthermore, that precisely the same situation obtains with common nouns: if, by using the common noun table I am referring to some object which, say, has a horizontal surface of such-and-such dimensions, supported on four verticals, is made of wood, and is used for eating or writing upon, then, if my listener understands me correctly, we can assume that the form table has triggered off a similar collection of attributes in his mind. Psychologically, then, the form used functions to trigger off the appropriate semantic configuration; linguistically, however, it is no more than a label or a tag which identifies a particular set of attributes, i.e. a semantic structure, and there will often be other tags which do the same job just as well, though these may have the disadvantage of emphasizing one attribute above the others (e.g. 'the Prime Minister'), cf. the long philosophical debate about Scott and the author of Waverley. I would wish, therefore, to make a distinction between the act of reference itself (which, if I understand it correctly, I agree with Lyons 1973 is deictic), and the content of the reference, which is some sort of semantic configuration (and what sort I will be suggesting later), which can be referred to ("triggered off") by any one of a large number of equivalent, though not necessarily synonymous, expressions. It is in this sense that I reject the traditional (and ST) assumption that words "have meaning"; I would prefer to say that they are merely associated with meanings, (cf. section 4.3 below). Sentence (31), therefore, is equivalent to a cataphoric R followed by a NR, rather than being a discourse-initiating NR.

Rs, on the other hand, can initiate a discourse (and cannot, incidentally, modify a proper noun head except in very special circumstances, in order to distinguish either between two referents bearing the same proper name:

36. Not the Harry Wharton who poured hot pea soup down the housemaster's trousers!

or else between two stages or conditions of the "same" referent:

37. The London I knew as a child stank.  
 38. The Lawrence Olivier of Henry V is very different from the  
 Lawrence Olivier of The Entertainer).

If we compare Rs for their discourse-initiating properties with definite NPs (other than proper Ns), we note a significant difference. Note that Thompson (op.cit:80) regards the choice of a definite rather than an indefinite determiner as correlating "with certain presuppositions which the speaker makes about the extent of his listener's knowledge", and by this she is presumably referring to the anaphoric properties of the definite determiner (which actually, as we have seen, relate to earlier mention in the discourse or appearance in the situation, rather than being 'presuppositions' pulled out of a hat). One would expect, therefore, that Rs with a definite head N, and NPs with a definite determiner would behave identically in use, since both allegedly presuppose prior knowledge. In fact, of course, this is not the case: Rs, as noted, can be discourse-initial; definite NPs cannot, e.g.:

39. (a) ~~Di~~The leaf floated past our heads;  
 40. (a) ~~Di~~With a single glare, Lady Bolsover quelled the tiger;  
 41. (a) ~~Di~~The lecturer was forced to sell his house.

Rs, however, being cataphoric, may initiate discourse (the sigil ~~Di~~ means "not discourse-initial"):

39. (b) <sup>Di</sup>The leaf which James had identified floated past our  
 heads;  
 40. (b) <sup>Di</sup>With a single glare, Lady Bolsover quelled the tiger  
 which had been terrorizing the locality;  
 41. (b) <sup>Di</sup>The lecturer whose pay claim had been turned down was  
 forced to sell his house.

In fact, the only simple definite NPs which may initiate discourse are those which are "homophoric", e.g. Yesterday, the Queen opened Parliament; Oh blast, I've trodden on the cat; My granny's having an affair with the milkman; in each case, the definite NP has a unique or unmarked reference within a certain community, which may be domestic, local, national or global. It may be that each case deletes a defining expression, such as 'the Queen of England', 'our cat', 'the milkman who delivers to our house'. The fact that definite NPs for the most part cannot be discourse-initial

shows that the associated presupposition requires to be explicitly determinable from the preceding discourse or the situation. The fact that Rs can be - and often are - discourse-initial shows that they need no such prefiguration, since they can be self-defining (and the definite article cataphoric rather than anaphoric). Compare:

42. (a) I met the brain-surgeon.

(Can only relate to previous discussion).

(b) I met the brain-surgeon who operated on Kennedy.

(Ambiguous between a use assuming previous discussion - with nuclear stress on met and the rest of the sentence on a low-level contour - and a use which is self-defining - with twin nuclei on brain-surgeon and Kennedy). Is this then to agree with Thompson that Rs embody a complex speaker-assumption about hearer-knowledge? If we examine a sentence like (34) above, I think it becomes fairly clear that Thompson is incorrect in her assertion, since she claims that a R, such as the man who broke the bank at Monte Carlo, is used on the assumption that the hearer knows the referent of the R and understands the reference, i.e. it is a claim that the hearer understands by that R a reference to some individual known to both speaker and hearer, say 'the Hon. Charles Fortescue', or at least that the speaker assumes as much. I think this is a possible sense of this R, but I would claim that the much more usual use of Rs makes them self-defining descriptions. A sentence such as

43. I know you have never heard of the man who broke the bank at  
Monte Carlo

is presumably contradictory under Thompson's interpretation, but in fact one doesn't need to know that such an individual exists or that he has indeed carried out this exploit, or indeed to understand the implications of the R, in order to understand sentences containing that R. In fact, if I may recall a point made earlier, a sentence such as (43) is unambiguous for the same reason that sentences such as (18) and (21) above are unambiguous, namely that the head and its R must be taken as a single, self-defining unit, rather than as a pair of propositions or parts of propositions in which one is marked as presupposed with respect to the other. A final point about these so-called presuppositions is that such discourse-connectivity (which I shall be claiming they represent) is by no means confined to the R, i.e. it is not the case that the R refers to assumed knowledge; it can equally well introduce new information:

44. Albert claimed that Eurydice had a technique that was incredible.

In fact, where we may agree that there is something like "presupposition" operating, it turns out to be a function of anaphoric definite NRs, i.e. where there is an antecedent in previous discourse (cf. also sections 2.17 and 2.3).

I would claim therefore that a sentence like (43) is derived in a manner equivalent to an embedding derivation, and not in the same way as a conjoining sentence, with or without the additional prop of "presuppositions". I would also claim that all sentences containing Rs are at least ambiguous between a clearly "embedded" interpretation and Thompson's interpretation, that some (e.g. (43)) can only admit of the former, but that no R sentence exists which can only admit of the sense associated with Thompson's account. However, I will return to the question of the derivational source for Rs and NRs in Ch. III.

In summary, then, the suggestive idea about "speaker's assumptions concerning hearer's knowledge" turns out to have a mysterious connection with the ability of a sentence to initiate discourse. We can display the discourse-initiating properties of various constructions:

45.

	(Simple) NP common	(Simple) NP proper	R	NR
Def.	*Di	Di	Di	*Di
Indef.	Di	-	Di	Di

All (except proper NPs, which cannot be indefinitely quantified) can initiate a discourse when indefinite:

46. (a) A man could be seen struggling up a hill;  
 (b) A man who carried a huge sack could be seen struggling up a hill;  
 (c) A man, who reminded me of Lawrence of Arabia, could be seen struggling up a hill.

When definite, however, only Rs, proper NPs (and also homophoric NRs, semantically akin to proper NPs) can function discourse-initially. The same facts apparently support Thompson's claim that definite NRs embody one piece of knowledge known to the listener (viz. the NP-antecedent) and assert two more pieces of information, whereas Rs embody one (more complex) piece of information known to the listener (viz. the NP-antecedent

plus relative clause) and assert one piece of information. However, the locution "known to the listener" is in fact equivalent to, and explained by, "specified in the discourse". ("Specified" as used here includes "previous mention" (see sections 2.3 and 5.2) and "self-specification"). Thompson makes no attempt to explain why Rs and NRs should differ in their presumptions; that is to say, the distinction is presented as though there were a completely open choice between R and NR. But this is far from the case: NRs are much more limited in their use than Rs, simply because Rs have the property of self-specification, which NRs lack. (Incidentally, the putative underlying conjunctions of Thompson's account also lack this property). I conclude from all this that Thompson's speaker-hearer assumptions are nothing more than discourse-specifications, which I shall examine further in Ch. III.

#### 2.17 Presuppositions and pragmatic assumptions

I do not intend to investigate the much vexed question of presuppositions at length, since their correct specification is not a central issue of this thesis. Their study, even in philosophy, is a comparatively recent one, and no clear consensus has yet emerged; the distinction between necessary (or logical) and contingent (or pragmatic) presuppositions is even more recent, and is due to workers in philosophical linguistics (e.g. Keenan 1971, Wilson 1975).

A presupposition is commonly defined as a condition on a sentence which must be true for the sentence to have a truth-value at all; if the proposition is false, then the containing S is said to have no truth-value: it is neither true nor false. A necessary, or logical, presupposition is a condition which forms part of the sentence: it has its effect upon the truth-evaluation of the assertion in the sentence by virtue of its actual presence there in some form. This "presence" ranges from a "definite description" (such as: The leader of the Opposition is effeminate, which logically presupposes that there exists a leader of the Opposition, though it does not explicitly relate this person to any place or time) to any expression embedded below a certain class of verbs which allow the sentence to presuppose the truth of the embedded expression whether or not the verb is positive or negative (e.g. Tancred regretted his folly, which presupposes that Tancred was, or had been, foolish, as does Tancred didn't regret his folly equally).

A contingent, or pragmatic, presupposition is a condition which forms part of the speaker's assumptions, derived either from his own beliefs or from the conventionally-held notions of his culture. (Some have been careful, however, not to refer to speaker's beliefs, but instead to the "relation between utterances and their contexts" (Keenan 1971:51), or to preconditions for illocutionary acts (Fillmore 1971b:276)). G. Lakoff (1969) gives the following example illustrating how "presuppositions about the nature of the world" can alter judgements of grammaticality (cf. the discussion on contextualizability, section 2.15 above):

47. (a) My cat realizes that I'm a lousy cook.

Since the subject of realize and similar verbs has to be a sentient being, (47a) is grammatical to the extent that the speaker or hearer believes cats to be sentient (and one can erect a scale of sentience in order to plot the cut-off point: cat, budgie, goldfish, grass-snake, tarantula, limpet, plankton, bacillus etc.). Lakoff has also suggested an example which works relative to cultural beliefs (the "insult" sentences, cf. section 2.13). There is presumably no clear dividing-line between personal and cultural assumptions, however. These examples and others put forward by the Lakoffs and others are interesting and important for the development of linguistic theory. However, the question we must ask is: are these really presuppositions? The formal requirement for logical presuppositions is set out by Deirdre Wilson (1975:16):

"a sentence S presupposes another sentence P iff if S is true P must be true, and if not-S is true P must be true, and if P is false or lacks a truth-value, both S and not-S must lack a truth-value".

The sui generis of this definition is that, if P is true, then S may be either true or false, and the sentence nevertheless succeeds:

48. (a) I {regret } having two heads.  
           {don't regret }

not  
 not...S

(b) I have two heads.

(48a) presupposes (logically, i.e. by virtue of the higher verb and grammatical construction) (48b). If (48b) (= P) is in fact true, then both the positive and the negative form of (48a) is meaningful, and the choice of one or the other is a choice in the real situation. But if (48b) is false, then both versions of (48a) (= S and not-S) cannot be assessed for truth: they lack a truth-value. Thus the question-form of (48a) notoriously cannot be answered by a simple positive or negative

response (despite being a Yes-No question): it can only be handled by challenging the embedded presupposition, i.e. (48b):

48. (c) {Do } you regret having two heads?  
{Don't }

(d) I haven't got two heads (i.e. not-P).

If we test the pragmatic presupposition of (47a) in the same way, it appears to behave similarly:

47. (b) My cat {realizes } I'm a lousy cook.  
{doesn't realize }

(c) My cat is capable of realizing things.

(d) {Does } your cat realize you're such a lousy cook?  
{Doesn't }

(e) My cat isn't capable of realizing anything (i.e. not-P).

However, the cultural presupposition we have already examined in section 2.13 appears not to behave in this way:

49. (a) John said that Mary was ugly, and then she insulted him.

(b) Calling someone ugly constitutes an insult.

(c) John didn't say that Mary was ugly, and then she insulted him.

(d) John said that Mary wasn't ugly, and then she insulted him.

(49c) requires the opposite assumption from (b) in order to make sense.

(d) is in fact meaningful if we assume that denying something which has never been asserted amounts to suggesting that it could apply, i.e.

telling Mary that she isn't ugly when no-one has proposed that she is ugly may be taken to imply that Mary could be thought of as ugly. In a

less direct way, then (d) could be said to presuppose (b) just as its negative (a) does. The difficulties are (i) that (a) has several neg-

atives, not all of which come anywhere near the required specification, and (ii) there are many situations in which the first conjunct of (d)

could be said without constituting an insult (e.g. where somebody had previously suggested that Mary was ugly, or had acted in such a way

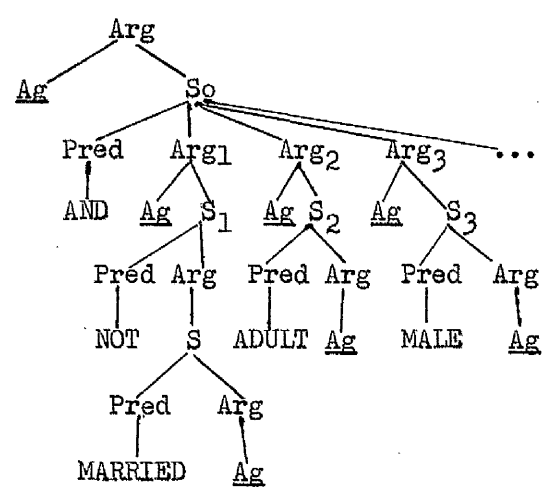
as might be explained by Mary's being ugly, e.g. by snubbing or jilting her). Further negatives of (a) are:

49. (e) John said that Mary was ugly, and then she didn't insult him.

(f) John didn't say that Mary was ugly, and then she didn't insult him.

(g) John said that Mary wasn't ugly, and then she didn't insult him.

All of these, as far as I can see, preserve (49b), at least in one of their various senses. We can make similar claims for the pragmatic presuppositions presented by R. Lakoff (1971b). Fillmore (1969b) suggests that the lexical item bachelor asserts of its argument that it is unmarried, and presupposes that it is adult and male. Thus John isn't a bachelor denies John's single marital status rather than his maturity or manhood. I would claim, however, (see ch. IV for details), that the distinction here is a question concerning depth of embedding and the form of this embedding in the semantic configuration which underlies this lexical item, which might be something like



'Ag such that Ag is not married and Ag is adult and Ag is male...'.  
 Ultimately, I would suggest, the priority of S<sub>1</sub>, S<sub>2</sub>, or S<sub>3</sub> in this configuration is a question of discourse-specification, and in particular, of focus-assignment (for which see sections 2.2 and 2.3 below). Thus, if the context (linguistic or situational) has already made it clear that the person is adult and male, the focus will automatically alight on the remaining subtree (or one of them, if there are more). On the other hand, if the context already stipulates unmarried, then one of the other subtrees will bear the focus, e.g. Pat's not an unmarried mother, he's a bachelor, which particularly focusses on male. Thus the fact that it is the marital status subtree which is most commonly focussed on (asserted) perhaps tells us more about the usual contexts of bachelor than about its presuppositions. Similarly with the other pragmatic presuppositions: (47a) is most unlikely as either an isolated sentence or as a discourse-initiator. In fact, it would be odd unless it occurred in a context which established the cat as a sentient being.



On the question of whether logical presuppositions can be derived from context in a similar manner, I feel more tentative. There are some, it seems to me, which clearly depend on context, and whose notorious oddity comes from their being wrenched out of context (e.g. the Have you stopped beating your wife? variety, which assumes a context that may not actually exist). "Factives", too, (such as (48a)) seem odd unless the "fact" has occurred previously. However, I have not investigated these usages at all, since their correct treatment is somewhat tangential to my central interest.

Presuppositions, of both kinds, have come under heavy fire just recently, from the pens of Deirdre Wilson (1975) and Ruth Kempson (1973a,b). Both consider that logical presuppositions may be handled with the existing machinery for truth-conditional semantics (specifically including the notion of entailment), whereas pragmatic presuppositions require a distinct pragmatic component. Both, again, consider that the latter will consist essentially of Grice's Co-operative Principle plus felicity-conditions for various illocutionary speech-acts. There is a danger in recent linguistics that "pragmatic" is becoming to semantics what "performance" has become to syntax, i.e. a rubbish-bin term to which are consigned all the interesting difficulties of language in use. For example, it is sometimes suggested that relationships between sentences and free clauses ought properly to be dealt with as "pragmatic implications" and not as true grammatical phenomena. But this places a quite arbitrary dividing-line between:

50. (a) Sam was late and got the sack,  
 (in which the pragmatic implication is one of causality), and:  
 (b) Sam was late and  $\left. \begin{array}{l} \text{so} \\ \text{therefore} \\ \text{because of it/this/that} \\ \dots \end{array} \right\}$  got the sack.

in which the causal connection is made explicit. Furthermore, (50a) is ambiguous between its causal sense and a "temporal succession" sense. But if we regard this as ambiguous, it clearly ought to be no different in kind from the more familiar kind of ambiguity:

50. (c) Boris is an outdoor lover,  
 since both are disambiguable intonationally, both are superficially ambiguous due to earlier structure-destroying deletions.

I shall assume that the pragmatic component is in fact the discourse-specification, together with necessary situational information. This is fed into the configurations in an as yet unspecified way, via the machinery of stress-reduction and Focus-placement. I return to this particularly in section 2.3.

## 2.2 Discourse

In sections 2.1 and 2.12, I have distinguished linguistic context from situational context. The notion of linguistic context is to some extent contingent upon the view that the domain of grammar is the sentence: the linguistic context is then the context of any given S under scrutiny. Small wonder then that linguistic context should figure not at all in a competence S-grammar (e.g. ST): the concept of a "given S", let alone its surrounding context, is clearly contingent upon some actual S in use, and is not concerned with making generalizations about the grammatical properties of some class g of Ss. Wang 1955 makes the point that:

"There is another kind of systematization which is less superficial than learning the axiom system. It is an intuitive grasp of the whole field, a vivid picture of the whole structure in your mind such as a good chess player would have of the game of chess. This second kind of systematization is something that formalization (or at least formalization alone) would not provide us "(p.226).

Many linguists would now agree that the time for formalism divorced from performance is finally at an end in linguistics. For example, Sanders 1969 argues at length that the natural domain of grammar is not the sentence, but the discourse. An immediate point which arises from this is that the notion of grammaticality applies rather uncomfortably to discourse. A grammar of discourse is more or less forced to consider probabilistic rather than absolute rules and judgements. The notion of context, too, undergoes a sea-change in a discourse-grammar, since what is, from the point of view of S, the linguistic context, is, from the point of view of D, the constituent structure and manifestation of it. I propose, therefore, to drop the term "linguistic context", and instead use the term "discourse", which, like Sanders and others, I shall take as the natural domain of grammar.

If the meaning of an S is describable in principle in a S-grammar, then so is the meaning of its verbal context (consisting of other Ss).

What S-grammars cannot in principle account for is the relationship between a S and its surrounding context. Such relationships are, on the face of it, both semantic and formal, as I will demonstrate in the next section, though I shall also be suggesting that the semantic relationships are prior to the formal ones.

## 2.21 Discourse: informal characterization

Given the following two passages, the native speaker of English, and even the minimally fluent non-native speaker, can easily decide that one is continuous and the other is not:

51. (a) Mr. Wilson did not offer a solution of his own. The baby was never walked out in a pram, but was always taken in a carry-cot. A police-patrol spotted him driving a car, and gave chase. The motion which the General Council agreed today will go before the TUC Congress this week, and will be overwhelmingly carried. The body is now expected to be buried in Spain.
52. (a) Fred, the hungry alligator - bar attraction of the Mill Hotel, Alveley, Salop - is dead, having bitten in half the electric heater which warmed his six-foot tank. Hotel owner Mrs. June Hodson said: "It's quite unheard of. Now we'll have to get another baby alligator; Fred was good for business. We're going to have him stuffed so he's in the deep freeze at the moment."

(All sentences from Sunday Times 5.9.71)

This ability to discriminate between connected and unconnected stretches of language is presumably a fairly basic one, and must be closely related to the assessment of meaningfulness within sentences: the assessment, that is to say, of the connectivity between words and phrases, intrasententially. Connectivity at both levels - that is to say, between sentences and within sentences - is not merely "formal". It is also - indeed, more crucially - semantic (and this distinction will be drawn in somewhat more detail in sections 2.22-3 below). The statement that connectivity in language is both formal and semantic is, I think, to all but the most diehard structuralist, fairly uncontroversial. However, most of the existing work on this topic (see section 6.2) assumes that of the two types, it is the formal connections which are more important and more "strictly linguistic". It

will be maintained in the present study that the semantic connections are both prior and fundamental, and that persuasive definitions such as "strictly linguistic" have done more harm than good in the development of linguistics by imposing artificial limitations on what may be studied.

Before investigating these questions further, however, I shall informally discuss the connectivity, or lack of it, evinced by passages (51a) and (52a), and also go on to demonstrate that the dichotomy discourse/non-discourse is an oversimplification and that there are intermediate types.

Firstly, for the benefit of the less than minimally fluent non-native speaker of English, the passage of continuous discourse is (52a), even though we may note in passing that by some criteria it is perhaps a good deal less likely than the various components of passage (51a).

Taking passage (52a) first, then, the reader, consciously or not, will notice on first reading that there is a clear thread of meaning running through the whole piece. We can refer to this as the COHERENCE of the passage. Examining it sentence by sentence, we find that each one has an obvious topic (and this term is not at this stage being used technically) and that furthermore, these topics have a reasonable connection with each other: The passage breaks down into two sections (hereafter referred to as S<sub>1</sub> and S<sub>2</sub>), the first consisting of a complex sentence with an interpolated appositional parenthesis, the second consisting of a quotation-introducing clause and the three graphological sentences of the quotation, two of which may be regarded as containing two syntactic main clauses each. The section parts will be referred to as S<sub>1-1</sub>, S<sub>1-2</sub> etc., and those referred to (some, namely the subordinate clauses, are not mentioned at this point) have the thematic function of "plot-advancing", that is to say, they carry the main items of information in the discourse. For further convenience, S<sub>1-1</sub> and S<sub>1-2</sub>, have been divided into parts (marked a and b), which the rest of the passage shows to be referentially important.

52. (b)
- |                    |   |
|--------------------|---|
|                    | $\overbrace{\hspace{10em}}^{\text{a}}$ $\overbrace{\hspace{10em}}^{\text{b}}$ |
| S <sub>1-1</sub> : | Fred, the alligator is dead (+ cause)   |
|                    | $\overbrace{\hspace{10em}}^{\text{a}}$ $\overbrace{\hspace{10em}}^{\text{b}}$ |
| S <sub>1-2</sub> : | bar attraction of the Mill Hotel  |
| S <sub>2</sub> :   | Hotel [S <sub>1-2b</sub> ] owner Mrs. Hodson's remarks, namely:               |
| S <sub>2-1</sub> : | It [presumably S <sub>1-1</sub> ]'s quite unheard of                          |
| S <sub>2-2</sub> : | We [S <sub>1-2b</sub> ]'ll have to get another alligator                      |
|                    | [than S <sub>1-1a</sub> ]   |

S<sub>2-3</sub>: Fred [S<sub>1-1a</sub>] was good for business [S<sub>1-2a</sub>]

S<sub>2-4</sub>: We [S<sub>1-2b</sub>]'re going to have him [S<sub>1-1a</sub>] stuffed

S<sub>2-5</sub>: He [S<sub>1-1a</sub>]'s in the deep freeze.

Clearly, the type of connectivity selected here is essentially semantic in nature, (although often realised by formal items), and concerns the networks of cross-reference in the passage. S<sub>1</sub> includes a high content of new information; S<sub>2</sub> contains a large proportion of back reference to S<sub>1</sub>.

If we now examine passage (51a) for this sort of connectivity, a very different picture emerges:

51. (b)

S<sub>1</sub> : Mr. Wilson did not offer a solution

S<sub>2-1</sub>: The baby was never walked out in a pram

S<sub>2-2</sub>:       S<sub>2-1</sub>  
[the baby] was always taken in a carry-cot

S<sub>3-1</sub>: A police patrol spotted him

              S<sub>3-1</sub>  
S<sub>3-2</sub>: [the patrol] gave chase

S<sub>4-1</sub>: The General Council's motion will go before the TUC

              S<sub>4-1</sub>  
S<sub>4-2</sub>: [the motion] will be carried

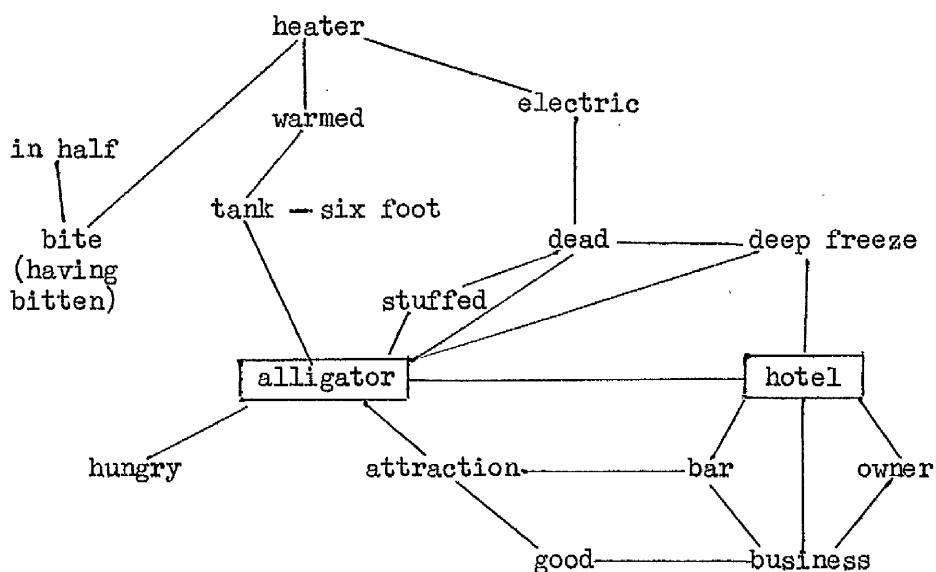
S<sub>5</sub> : The body is expected to be buried in Spain.

Where passage (52a), as we have seen, contained two networks of back-reference, viz. the alligator and the hotel, which were, furthermore, explicitly related to each other in the opening sentence, passage (51a), on the other hand, contains only three clear cases of back-reference, all of which are intra-, and not inter-, sentential, and all of which are represented in the above analysis by restored deletions, i.e. they are cases of simple repetition rather than reference. There seems to be no clear topical connectivity, as there was in passage (52a), where the sentences were "about" either the alligator or, slightly ambiguously, the hotel (seen, that is, as either the place or the proprietorship). The topics of passage (51a) are: Mr. Wilson, a baby, a police patrol/ "him", a motion of the General Council, a body, and although the possibility of some semantic connection between these topics (which will be referred to presently, in the discussions of grammatical and lexical connection) must be admitted, it would evidently be of a somewhat per-verse and occasional nature.

Examining both passages now for another aspect of semantic connectivity, we turn to an analysis of the lexical patterning. (Reasons of length, however, forbid me from discussing what lexical patterning is, and how it works).

Lexical patterning occurs, obviously enough, in the domain of lexical items, and so in order to obtain an informal picture of the word-word connections in passage (52a), a type of semantic field diagram may be constructed with alligator and hotel as its twin nodes (selected previously on grounds of topical connection, as we have seen):

52. (c)



(52c) inevitably leaves many questions unanswered, but as a rough indication of the lexical connections within that particular discourse, its value is considerable. Two points need to be made, however, which demonstrate the inadequacy of an unlabelled diagram such as this: first, the relationships between the connected items are of many possible kinds. Some are "grammatical" (although in this study most of these will be regarded as primarily semantic, and grammatical only secondarily); some are entirely semantic, and some are situational or cultural, reflecting socio-cultural rather than specifically linguistic assumptions or expectations (cf. sections 2.11 and 2.13 above). Phonological/lexical relationships are also possible (though not in this particular discourse): puns, rhymes, chimes, etc. Some of these relationships in passage (52a)

are briefly set out below:

52. (d)

(i)	NODE: <b>ALLIGATOR</b>	COLLOCATE:	
	RELATIONSHIPS: NODE → COLLOCATE		RELATIONSHIPS: COLLOCATE → NODE
	<p>possessed</p> <p>head (domain)</p> <p>agent</p> <p>possessor, inhabitant</p> <p>goal</p> <p>domain</p> <p>contents</p>	<p>HOTEL</p> <p>HUNGRY</p> <p>BITE</p> <p>TANK</p> <p>STUFFED</p> <p>DEAD</p> <p>DEEP FREEZE</p>	<p>location, possessor</p> <p>attribute (state)</p> <p>action, predicate</p> <p>location (habitat), possessed</p> <p>action</p> <p>state, predicate</p> <p>location</p>
(ii)	NODE: <b>HOTEL</b>		
	<p>location, possessor</p> <p>includes</p> <p>possessed</p> <p>?location, type</p> <p>location, possessor</p>	<p>ALLIGATOR</p> <p>BAR</p> <p>OWNER</p> <p>BUSINESS</p> <p>DEEP FREEZE</p>	<p>possessed</p> <p>part of</p> <p>possessor</p> <p>?purpose/LEXICAL SET</p> <p>possessed</p>
(iii)	NODE: <b>HEATER</b>		
	<p>(domain)</p> <p>instrument</p> <p>goal</p> <p>head</p>	<p>ELECTRIC</p> <p>WARMED</p> <p>BITE</p> <p>HALF</p>	<p>property</p> <p>LEXICAL SET</p> <p>action</p> <p>partitive</p>
(iv)	NODE: <b>DEAD</b>		
	<p>state predicate</p> <p>LEXICAL SET?</p> <p>result</p> <p>?</p>	<p>ALLIGATOR</p> <p>STUFFED</p> <p>ELECTRIC</p> <p>DEEP FREEZE</p>	<p>domain</p> <p>+ [-- [- living]]</p> <p>cause, instrument</p> <p>+ [- living, - anim.]?</p>
(v)	NODE: <b>BITE</b>		
	<p>action</p> <p>" predicate</p> <p>"</p> <p>?possible condition</p>	<p>HEATER</p> <p>ALLIGATOR</p> <p>HALF</p> <p>HUNGRY</p>	<p>goal</p> <p>agent</p> <p>result</p> <p>LEXICAL SET</p>

(vi)	NODE: BUSINESS	COLLOCATE:	
	RELATIONSHIPS: NODE → COLLOCATE		RELATIONSHIPS: COLLOCATE → NODE
	?purpose, LEXICAL SET	HOTEL	location, type
	?CULTURAL possessed	OWNER	beneficiary, possessor
	type: i.e. inclusion	BAR	purpose, function
	(domain)	GOOD	attribute (state)

Many of these relations, it will be noted, do not fall easily into the roles or predicate-terms of, for example, case-grammar (which I shall be using and discussing subsequently: see Ch. IV). Obviously, a great deal of work remains even before we can isolate with any confidence the primitive terms of our grammar. But this should not be allowed to paralyse our faculties: perfect understanding is built up through imperfect hypotheses.

The second point is that, over and above the linguistic and extra-linguistic relationships between words just referred to, there is another type of (possibly) extra-linguistic bond which reflects the probability that certain pairs or sets of words will occur together. I say "pairs or sets" because, although where such phenomena have been studied it seems to have generally been assumed that they take place between pairs of words, it nevertheless seems clear that many, perhaps all, high-probability pairings occur within a fairly specific context provided by another word or words. Thus in passage (52a), for example, given alligator, 'habitat' might most probably be expected to be something like mangrove swamp, tropical river or the like. With the additional contextual connotation of 'captivity', however, (implied by the possessive relationship between hotel and alligator), tank is one of the few items possible, realizing 'habitat'. I shall subsequently refer to lexical patterning, as shown in (52c), as COLLOCATION, but this term is here used somewhat differently from its most habitual usage in British linguistics (particularly - indeed, almost exclusively - those of a Firthian or neo-Firthian persuasion). See section 2.12.

The terms used without introduction in Fig. (52d) naturally need further explanation. I propose at this stage to comment on them only selectively; fuller discussion must wait until Ch. IV.

The network of interlocking relationships depicted in Fig. (52c) is claimed to be exhaustive for this passage. We can confidently expect



other relationships between the lexical items in passage (52a) to be possible; they have not, however, been selected by the writer of passage (52a) as semantically important. So, for example, if the alligator is in the hotel, and the alligator is in the tank, then (assuming that hotels are bigger than alligator-tanks) the tank is necessarily also in the hotel. This particular relationship, however, is not drawn in passage (52a), nor is it important as an implication affecting other relationships.

Several points will be made about Fig. (52d). Firstly, of the various relationships referred to there, many are of the kind which, in traditional English grammar and in the grammars of inflecting languages, are normally called CASES. As has amply been demonstrated elsewhere, (e.g. Fillmore 1968); case-forms in languages which have them are the superficial realisations in those languages of configurations and relationships in the "real world". Languages (such as English) which have no (or few) case-forms will express the same configurations and relationships in other ways. For this reason (and others) the semantic structure of language, which expresses these underlying configurations and relationships directly, is considered by many linguists to be prior in some way to the formal side of language, which treats of such things as case-forms. The underlying cases (or roles as they are called in the later work of Langendoen (1970), etc.), which have been studied in recent work, include many of the relationships displayed in Fig. (52d): locative, possessive, instrumental, cause, result, agent, beneficiary, etc. I shall not discuss these further here, but leave this subject until Ch. IV.

Other functions deriving from a similarly semantic origin occur in association with surface structure verbal elements: action, state; while yet others - which have been discussed in <sup>ST</sup> approaches - would find a place in the lexicon: thus, presumably, hyponyms (such as hotel/bar) i.e. a 'whole/part' or 'inclusive/included' relationship, selectional restrictions of various kinds (e.g. stuffed, which requires that its object be inanimate and specifically non-living, at least in the sense relevant to passage (52a)), and other types of what might loosely be called "semantic field relations" (e.g. hotel/business, bite/hungry), though it is not always easy to see how an ST selectional/strict subcategory restriction approach will account for all of the relationships which are revealed in (52d).

Before similarly examining passage (51a), I should make the point that many of the collocational relationships which exist in a given

language will be of a restricted kind, restricted, that is, not only by the mutual expectancy of the collocating items, but more crucially, by the general situation in which the whole discourse takes place (cf. 2.11 and 2.13 above). Thus, within the type of language-situation generally characterised as "journalese", the meaning of the headline

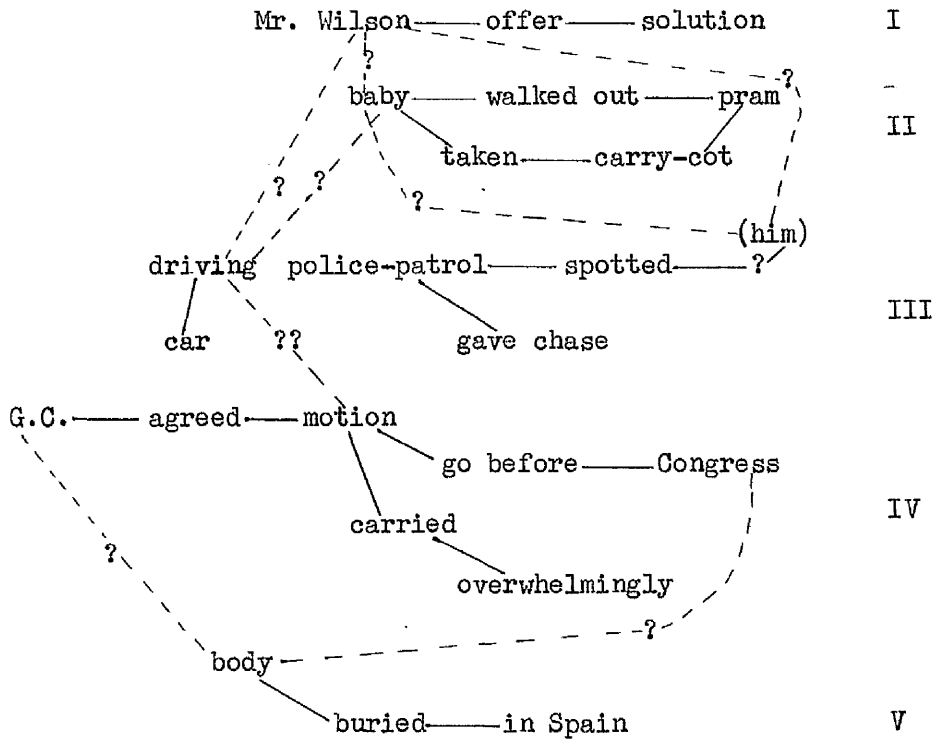
WEST'S BID FAILS

will vary according to the general situation (including topic) of the particular discourse introduced by the headline: given a discourse about international relations, WEST would refer to the Western world, and BID would probably mean 'attempt (to seek a peaceful solution...)', or whatever); a discourse about a card-game would probably entail that WEST referred to the player on the right of the dealer, and that the BID referred to the stipulated number of tricks contracted for in a hand of, probably, bridge; while in a discourse about an auction, WEST might refer to a particular dealer or company, and BID to his offer.

The foregoing remarks about situation are intended to be no more than indicative of its relevance to the question of discourse (and cf. sections 2.1-2.15). What appears to be indicated is that situational context must be taken into account in both the comprehension and, perhaps more interestingly for current linguistic thought, the production of language. However, it should not be assumed that situation is relevant to comprehension and production of language in the same way and at the same stage of the respective processes: in fact, at the reception end of the language-event, the discourse is of course a unity, a given whole, in which it is extremely difficult to separate out "situational" determinants from "linguistic" determinants without benefit of further evidence. This is mainly to be sought in the production end of discourse wherein it is relatively easy to sort out one side from the other.

Passage (51a) may be similarly examined for lexical connectivity. Fig. (51c) shows the result:

51. (c)



Clearly, the only unquestionable connections occur within the "blocks" marked I - V, blocks which of course exactly correspond with the individual sentences of passages (51a). Apart from the obvious lexical connections, it will be noted that there are several problematical links (marked with queried broken lines) which, if accepted, would have to be interpreted as metaphorical, pejorative, or otherwise figurative. The reasons for this are not hard to find: firstly, it should be noted that among the speakers of any language, there is a "drive to interpret", that is to say that, faced with a stretch of language-like material, there is a strong presumption on the part of the hearer/reader that it indeed "makes sense", (cf. Grice's Co-operative Principle). If this stretch of language contains recognisable sentences, then it follows, I think, that there is a presumption of connectivity between them. This general, socio-psycholinguistic state helps to provide a "climate" within which special extraordinary connections are sought if no obvious ordinary ones can be found. It might also be mentioned at this point (and somewhat expanded shortly) that the third type of connectivity that we shall presently be looking at, namely the set of formal connecting devices often called COHESION,

has as an important property that its semantic functions are very non-specific: in other words, the meaning of cohesive items invariably arises out of a simple identity relationship with some fully-specified lexical items elsewhere in the discourse, and since this relationship is always only minimally specified (in English, anyway) - for example, in English personal pronouns, only number and, in the 3rd person singular only, gender can recur in the copied form - this clearly means that any lexical item which is able to satisfy such very generalised identity conditions is potentially interpretable as the original of the copy. An example may be seen in sentence III of passage (51a):

51. (e) A police-patrol spotted him driving a car, and gave chase. It is a matter of extralinguistic fact that the word him in (51e) actually refers to a police suspect, who is antecedently referred to quite normally in the discourse from which the sentence is lifted. However, in passage (51a), which the reader must by now surely suspect is not in principle, as it is not in fact, a genuine discourse, the (minimally-specified) pronoun him could refer to either of two antecedents, Mr. Wilson or the baby, the former of which fulfils the necessary conditions of masculinity and singularity (grammatically speaking, at least), while the latter is certainly singular and could be masculine. (Of course, of the two, Mr. Wilson is more likely on ontological grounds - if for no other reason than that babies in our world do not often drive cars).

Potential cohesive relationships of this sort, then, can obviously indicate semantic interpretations which have in fact been forced by the indeterminacy of the pronoun. Other types of indeterminacy, however, are possible - such as that gained by the use of co-referents. The overriding stylistic requirement in English, and many other languages, is that in normal circumstances repetition must at almost all costs be avoided. In most discourses, the subject or topic concerns some item which must be constantly referred to. Thus there is an inbuilt tension between the need to repeat the referent, and the need to avoid repetition. One way in which it is possible to repeat a reference without tedium or loss of specificity is to use a near-synonym or else a co-referent, i.e. a locution which refers to the same subject but in different terms (cf. section 2.16), e.g.:

- 51. (f) Harold Wilson
- (g) The Prime Minister
- (h) The former leader of the Opposition
- (i) The hon. member for Huyton, etc.

Since such a co-reference may be to any attribute of the referent, and since any attitude to the referent or connotation of the referent may independently be included, it follows that such phrases as

- 51. (j) The foremost wearer of Gannex raincoats
- (k) That shifty-eyed pipe-smoker
- (l) The best Prime Minister since the war
- (m) The worst Prime Minister since the war
- (n) The simpleton, etc. etc.

could equally well be co-referents of Harold Wilson, given the time, situation, and appropriately-minded speaker (cf. sections 2.13-14). All of which is a preamble to the assertion that sentences I and II could conceivably be linked by taking

- 51 (o) The baby

as co-referential with Mr. Wilson, used of course in a pejorative way.

Other forced intersentential lexical relationships may be suggested between driving and motion, and General Council or Congress and body. In both of these cases, a lexical connection seems possible: driving is a sort of motion (i.e. is included in the term motion) and a Council or Congress is a sort of body. It need not be emphasised too much here, of course, that in passage (51a) motion and body quite clearly have different senses from these: the intrasentential collocation alone indicates this. Motion in the sense of 'movement' is unlikely to be agreed or carried; body in the sense of 'collection of people' is unlikely, except in some pejorative or fictional framework, to be buried.

For a discourse, then, the well-formedness condition which a grammar must account for is not grammaticality, but connectivity. We have seen that this has three aspects:

- (i) COHERENCE (semantic connection)
- (ii) COLLOCATION (lexical connection)
- (iii) COHESION (formal connection)

It is, however, the contention of this study that (ii) and (iii) are in fact aspects of (i): collocation operates with semantic connection (cf. (52d)), and cohesion is wholly accounted for by the exigences of identification and contrast (which, note, are semantic conditions) within a discourse. A type of coherence not yet discussed, but which will subsequently be seen to be of considerable importance in the description of NRs, particularly, is implicature, the pragmatic connectivity between

one sentence and another in a discourse (see sections 5.2-3). Cohesion and coherence will be examined in greater detail in sections 2.22-3.

## 2.22 Cohesion

Cohesion denotes the syntactic interconnectedness of sentences in discourse, and concerns such processes of anaphora and deixis as pronominalization, definitization, and stress placement. All of these may display absolute or sloppy identity with an antecedent, which, contrary to traditional TG treatment is as likely to be outside a given sentence as inside it (and in fact, given the ST position that semantic interpretation, including the recognition of identity, takes place at the level of DS, antecedent and anaphor will always be in separate S structures. Such facts as these led in EST to the partial abandonment of this position, in favour of the surface structure interpretation of anaphorical phenomena). The ST position on pronominalization was expressed, with his then characteristic pugnacity, by Paul Postal (although I do not know whether his present commitment to the GS position has led him to modify the view since):

"I would argue that there is really no other meaning [than the sentence internal meaning of a pronoun]. The idea that a form like she in sentences such as she dances well is a "replacement" or "substitute" for some other noun, say in "discourse contexts" or the like, seems to me completely without basis. Such an assumption explains nothing for the quite simple reason that there is nothing really to explain. It is quite sufficient to indicate precisely that such forms refer to object-types whose particular referents are assumed by the speaker to be known to the person spoken to."

(1969a:202 fn.3)

Notice that Postal's solution to the perfectly predictable difficulty for S-grammars that some anaphora is undeniably intersentential, is to fall back upon the hazy notion of speaker-hearer assumptions, which I have criticised in section 2.16. Both ST and EST however, in order to avoid the horrors of discourse grammar, are forced into uncomfortable postures brought on by ad hoc modifications to an inadequate model. The following segment of a discourse (from a spontaneous radio discussion on Virginia Woolf's To the lighthouse) will serve to illustrate many of the processes of cohesion:

53. (a) 1. Dilys Powell: And I think Mr. Ramsay's such a wonderful character, isn't he?  
 2. Tom Driberg: Yes.

3. D.P.: That strange philosopher charging up beside him, wonderful character, and all the time always frightens everybody. He longs for reassurance, he longs for Mrs. Ramsay to say 'I love you'. She never quite says it, but it's implied.
4. T.D.: I wonder whether when it was first published in nineteen-twenty-seven, that was, after all, after Freud, wasn't it, the average reader recognised the very strong sexual symbolism throughout the book - because, of course the lighthouse is a phallic emblem, and James, the son, the little boy James, who wants so badly to go to the lighthouse and is frustrated all the time, explicitly hates his father and wants to stab him to death, which occurs both early and late in the book.
5. D.P.: But just at the end there's a reconciliation.
6. T.D.: It's this Oedipus thing really.
7. Julian Mitchell: The lighthouse does raise all sorts of questions about what exactly the symbols are, whether in fact you invent your own rather, and put them in. Certainly one of them is the little boy who, now in adolescence, steps on to the lighthouse and that is his coming to manhood, presumably.
8. T.D.: Well, quite, yes.
9. D.P.: Isn't it terrible, I just don't see any of these sexual symbols, I never am aware of them. I just don't see them. I just don't care about these phallic symbols. I think they're -
10. J.M.: I think they're meant to operate on an - not on a conscious level, so that's fine, you know.
11. D.P.: Good.
12. J.M.: And I don't think they're meant to be obtrusive.
13. D.P.: Well, they're not obtrusive to me, and and and I I I think that in a way the last scene, when they arrive at the lighthouse, it's a kind of reconciliation, when the boy and the father are at last reconciled, and they reached a kind of understanding. In fact it's a kind of conclusion not to live in life, but to life, a kind of conclusion of one's being in existence, which I think is marvellous, truly.

(Main stress is indicated by italicization. The dialogue exchanges are numbered for ease of reference). The immediately preceding context concerns the structure of the novel and the facility of its author, so there is no immediate topical or anaphoric link: exchange 1 begins a new "paragraph", although there are references to the preceding discourse, e.g. in

53. (b) That strange philosopher charging up beside him, that refers back to a preceding reference:

54. the philosopher Rudy, always reciting aloud, charging about the garden reciting The Charge of the Light Brigade, which occurs seven exchanges previously, three of them more in the nature of monologues, since they are longer even than exchanges 4, 7 and 13 in (53a), which I would also rate as monologues. However, ignoring such extended connections, let us look briefly at the three processes of cohesion mentioned above:

(i) Pronominalization. Examples of intersentential pronominalization are:

E(xchange) 3 - him (antecedent: Mr. Ramsay in E1);

he (x 2) (ambiguous. Antecedent either Mr. Ramsay in E1 or that strange philosopher in E3. Disambiguation in fact is from the preceding discourse - again seven exchanges before - "Mr. Ramsay longs for some kind of reassurance from his wife");

she (ambiguous. Antecedent: either Mrs. Ramsay in previous S, or Virginia Woolf in exchange preceding E1. Disambiguated as before);

it (x 2) (Reference depends on that of she: if she = Mrs. Ramsay, as in fact it does, then it refers to "I love you" in previous sentence. The second it then displays sloppy identity with this antecedent, since what is implied is presumably not 'I love you', but 'the fact that Mrs. Ramsay loved Mr. Ramsay'. If she = Virginia Woolf, then it refers to something like 'previous S', since this would now be a metalinguistic comment).

Pronominalization is not necessarily anaphoric, i.e. with a preceding reference in the verbal context. It can also be exophoric (referring to the situational context), in which case the pronoun is, contrary to the usual position in verbal context, stressed, e.g. "He's late" vs. "He's late"; the former but not the latter can refer to an individual in the situation not previously discussed or referred to. It can also be cataphoric, i.e. referring to subsequent verbal context, e.g. it in the first line of E4, which possibly refers forward to the book (although it could be argued



that book is implicit in the whole discussion, and it is in any case explicit in several places in the verbal context preceding (53a), which would make it anaphoric). The cataphoric function of it here is suggested, though, by the fact that its presumed "postcedent", book later on in this sentence, is stressed, which is unlikely for a mere repetition. Despite its ambiguous occurrence in this short corpus, however, cataphoric pronominalization is not uncommon.

(ii) Definitization. Two of the three kinds of reference acts noted above may trigger the process of definitization, namely, anaphora and cataphora. Again, they will almost always operate between sentences, or at least between "DS"s. Definitization is actually a stage in pronominalization and the derivation of demonstratives, but we shall confine ourselves to uses of the definite article in (53a), since this is to be the subject of section 3.1.

Anaphoric: E4 - the book (Antecedent: "we move to perhaps a ladies' book one can say");  
the lighthouse (Antecedent: "there's a light-house and you see the beam flashing at night");  
the son (Antecedent: "There's a family of children, and the youngest of them, James...");  
 all of these antecedents precede (53a).

Cataphoric: E4 - the very strong sexual symbolism throughout the book;  
 E7 - the little boy who, now in adolescence, steps on to the lighthouse.

The third kind of reference act, exophora, hardly seems to apply to definitization in that definite NPs used in a way analogous to exophora appear either to be cataphoric (the man coming into the room) or homophoric (please lift the seat), cf. section 2.16. Examples in (53a) are:

Homophoric: E4 - the average reader;  
 E5 - the end;  
 (E6 - this Oedipus thing);  
 E13 - the last scene.

(iii) Stress placement. In general terms, stress placement is a function of the importance attached by a speaker to some elements of his discourse. Under normal (viz. unemphatic) conditions, it applies semi-automatically, with new lexical elements being, in effect, stressed, (e.g. phallic in E4) and repeated ones being reduced in stress (e.g. phallic in E9). However, there are some immediate caveats: emphatic stress is placed under focus

conditions, and focus (see section 2.3) is partly a function of subject-matter and partly of intention; this means that repeated items are not necessarily reduced in stress: sometimes, for reasons of subject-matter or intention, they may be emphatically stressed; it also means that not only lexical elements are capable of receiving (emphatic) stress: structural items (e.g. and in E4, me in E13) may bear emphatic stress; contrastive emphatic stress actually contrasts some item with the other members of its immediate set:

55. (a) I like<sub>C<sub>1</sub></sub> strawberries<sub>C<sub>2</sub></sub>, but hate<sub>C<sub>1</sub></sub> gooseberries<sub>C<sub>2</sub></sub>.  
 (b) ?I like<sub>C<sub>1</sub></sub> strawberries<sub>C<sub>2</sub></sub>, but hate<sub>C<sub>1</sub></sub> vinegar<sub>C<sub>2</sub></sub>.  
 (c) ??I like<sub>C<sub>1</sub></sub> strawberries<sub>C<sub>2</sub></sub>, but hate<sub>C<sub>1</sub></sub> Kirkegaard<sub>C<sub>2</sub></sub>.  
 (d) ??I like<sub>C<sub>1</sub></sub> strawberries<sub>C<sub>2</sub></sub>, but hate<sub>C<sub>1</sub></sub> intolerance<sub>C<sub>2</sub></sub>.

where the subscripts mark the cross-contrasts. Notice that the less immediate the set for C<sub>2</sub>, the more doubtful the sentence. "Immediate set" is defined as lexical set for lexical items and (closed) morphological set for grammatical items.

I shall not discuss pronominalization or stress-placement further. For views on the discourse-function of pronominalization, see Lockwood 1969, (comparing tagmemic, stratificational and TG approaches), Pike and Lowe 1969 (on the switching from 1st to 2nd person in direct speech embedded in direct speech) and Delisle 1973 (whose conclusions about backward pronominalization, however, seem to me quite incorrect). On stress-placement in dialogue, see Gunter 1966. On cohesion in general, see Hasan 1968, upon which Sinclair and Coulthard (op.cit:8) properly comment that her "discussion of such cohesion features as anaphora and exophora do [sic] depend on the concept of a contextualized clause, but are not concerned with the structure of the text. Items outside the clause are used to explain features inside the clause, but the existence of certain items within the clause which refer out to other clauses is not used to discuss the way in which larger units are structured". To which we might add, "let alone how they cohere semantically".

It is my contention, however, that cohesion is actually a semantic process having syntactic effect, that its function is to link together repeated items having identical reference (or at least sloppily so). If

this is the case then all such operations are semantic one, since identity is a condition on sameness of reference. I shall be arguing, therefore, that cohesion may be handled with the rules for coherence, and specifically that the partial repetition which characterizes cohesion may be handled without modification by such rules as the global coherence constraint (see section 5.2).

### 2.23 Coherence

Coherence, therefore, includes both formal and semantic connectedness. It is most easily tracked down via the lexical deployment of a text (cf. (52c) in section 2.21 above). In terms of production, an already selected set of semantic configurations will continue occurring through the connected discourse. In terms of reception, semantic configurations have to be inferred, and coherence results from scrutinizing these same configurations for partial identity of sub-trees.

In literary studies, the coherence of a work is usually called its theme, and it is this which van Dijk is trying to capture by macro-structure (cf. section 6.25 below).

Let us now examine passage (52a) for its coherence: an alligator is a large, predatory, semi-tropical aquatic reptile. Each of these characteristics coheres with something in the context, e.g. predatory coheres with hungry, hungry with bite; semi-tropical coheres with heater, warmed; aquatic coheres with tank; large coheres with a measure of size, six-foot; reptile (an animal, hence living) coheres with dead, and dead coheres with deep freeze, stuffed.

This perhaps enables us to refine the notion of coherence slightly: I suggest that it refers to a complex set of semantic relationships between concepts (for discussion of "concepts", see section 4.12), including synonymy, hyponymy (inclusion), and implication. Take the set of terms initiated by predatory: if x is predatory, then x hunts for its food; if x hunts for food, then x wants food; if x wants food, then x is hungry and wants to eat; if x wants to eat and x has food, then x will use its eating mechanism; if the eating mechanism which x has includes teeth, then x is likely to bite the food; and so on. Most of these "if ... then" pairs are, it should be noted, pragmatic assumptions (cf. section 2.17) which actual events might disprove (i.e. many of them are essentially probability statements). In particular, one must be wary of the switch from generic to specific, e.g. from the general definition of predator 'an x which hunts for its food',

down to the specific 'if x wants food, then x is hungry'. I shall eventually handle this problem by generating only generic expressions, and subsequently specifying them further by way of the context.

I take coherence to be essentially a matter of subtree repetition. In certain circumstances of complete repetition (involving stress reduction), certain kinds of deletion and substitution take place which collectively have been called cohesion (see previous section). The general type of semantic coherence, however, is, I suggest, a matter of partial rather than complete repetition, i.e. repetition of subtrees rather than whole trees, (although the distinction is not always easy to maintain). The notion of coherence is formalized to some extent in section 5.2.

### 2.3 Focus and focus-movement

#### 2.31 Focus: a brief review and outline

The interest of the linguistic community at large in the notion of focus (and the related distinction between topic and comment) has undoubtedly received its most important stimulus in recent years from the fact that Chomsky discusses it at some length in his (1970) article. However, as we have seen in other connections, a great number of insights into this subject have been achieved over forty years or more in European linguistics, and again, notably in Prague School theories (particularly on this subject, V. Mathesius). The academic inheritors and developers of this tradition today are the investigators of Functional Sentence Perspective (cf. F. Daneš 1974a) or Topic-Comment Articulation (notably Sgall et al. 1973): the terms are - different approaches aside - practically synonymous. Functional Sentence Perspective (FSP) tends to denote the older Prague-influenced approach, in which the sentence is divided into its two functioning parts, Theme (Topic) and Rheme (Comment):

"The rheme shows its significance as the conveyor of the 'new', actual information, while the theme, being informatively insignificant, will be employed as a relevant means of the construction".

(Daneš 1974b:113).

Thus the theme links each sentence with what has gone before, while the rheme cumulatively moves on the meaning which the discourse is to communicate.

The more recent Prague-descended approach is characterized by the terms Communicative Dynamism (CD) and Topic-Comment Articulation (TCA). The first of these belongs to J. Firbas (e.g. 1974), and has been developed out of a

refinement to the basic Theme-Rheme division mentioned above, whereby some scholars (see Firbas op.cit:25) work with a transitional segment between Theme and Rheme. Firbas refines still further, and assigns a CD value to each element in the S: thus, in an S independent of context:

"the subject carries the highest, the adverbial element the lowest degree of CD, the verb-ranking between them".

(op.cit:19)

However, in context, if the subject is contextually dependent (i.e. thematic) in a subject-verb-object structure, then the object will have the highest degree of CD, the subject will carry the lowest, and the verb will again be intermediate. Contextually independent adverbials will also rank higher than the verb in such sentences, though Firbas does not rate them in respect of the object (e.g. p.20). He sums up this extension of the Theme-Rheme version of FSP:

"As I see it, the distribution of the degrees of CD over the sentence elements, which makes the semantic and grammatical structure function in a definite kind of perspective, is an outcome of a tension between, or rather interplay of, the tendency towards the basic distribution of CD on the one hand, and the context and the semantic structure on the other."

(op.cit:22)

The tension, or interplay, he speaks of is set up by the contextual dependencies of the discourse: formal (cohesive) links having low degrees of CD, since semantically they mark known information (which may occur in previous discourse or derive from the situation); and semantic (coherence) progressions having high degrees of CD, since they move the informative development of the text forward.

The notion of CD is, in its turn, taken up and developed into the TCA theories of Sgall et al. 1973. These scholars regard the dynamics of communication as consisting of the progressive modification by the speaker of the knowledge which he assumes the hearer to share with him:

"Thus, the speaker specifies the items of knowledge he shares with the hearer that he wants to be modified - we shall call them the established items - and he specifies, further, what properties should now be assigned to them by the hearer, in what relationship with what other items of knowledge they should be introduced, or which other modifications they should undergo."

(Sgall et al. 1973:39 sq.).

They implement these ideas with a very much more detailed scale of CD (p.67) plus the notion of contextual boundness. This is approximately the same as themacity or topicality (and is realized as cohesion), but Sgall et al's innovation is to devise an algorithm (actually more in the nature of a



But Chomsky assumes that

"Rules of phonological interpretation assign an intonational contour to surface structures. Certain phrases of the surface structure may be marked, by grammatical processes of a poorly understood sort, as receiving expressive or contrastive stress, and these markings also affect the operation of the rules of phonological interpretation. If no such processes have applied, the rules assign the normal intonation. In any event, phrases that contain the intonation center may be interpreted as focus of utterance, the conditions perhaps being somewhat different and more restrictive when the intonation center involves expressive or contrastive stress, as noted... Choice of focus determines the relation of the utterance to responses, to utterances to which it is a possible response, and to other sentences in the discourse".

(op.cit:205)

However, the process of interpreting a phrase as focus of utterance (and determining its presupposition by substituting for that phrase a variable, (such as someone, something, of some kind etc.)), is treated by Chomsky, one may reasonably say, with a certain bland dismissiveness:

"Thus for a sentence S interpreted as (F,P) [i.e. "a class of pairs ... where F is a focus and P a presupposition, each such pair corresponding to one possible interpretation"], to be a proper response to a sentence S' interpreted as (F',P') it must be the case that P = P'. Furthermore, F and F' must be paired in some 'natural' way, where the relevant concept of 'naturalness' no doubt extends beyond grammar, in the broadest sense of the concept 'grammar'. Further elaborations of these notions are surely in order, but this seems in general a fair first approximation,"

(op.cit:206) (cf. too, his fnn. pp.202<sup>a</sup>, 206<sup>a</sup>).

But Chomsky's case against the deep structure interpretation of these elements (and, a fortiori, their representation in any semantic type of base) is asserted rather than argued. I shall be demonstrating in Ch. VI that the Standard Theory is incapable of dealing with restrictive relativization, so I have no wish to defend it against Chomsky's claims about Focus and Presupposition. However, his solution (to extend ST to allow surface structure semantic interpretation) is not, of course, the only possible alternative to ST. He does not, at this stage of the article, investigate a GS-type approach, such as will, I believe, incorporate with perfect ease the facts he describes. Thus, he first suggests that the focus is "the predicate of the dominant proposition of the deep structure", (op.cit:199). However, the following set of sentences:

57. (a) Does John write poetry in his STUDY?  
 (b) Is it in his STUDY that John writes poetry?  
 (c) John doesn't write poetry in his STUDY;  
 (d) It isn't in his STUDY that John writes poetry,





vaguely-delimited sentence-part containing nuclear stress, but instead that focus underlies that nuclear stress. The placement of focus, I claim, is by an attachment rule that attaches FOCUS to some subtree of a semantic configuration under one or both of two conditions (informally):

- (i) the subtree represents non-topic material;
- (ii) the subtree is marked by the speaker as important.

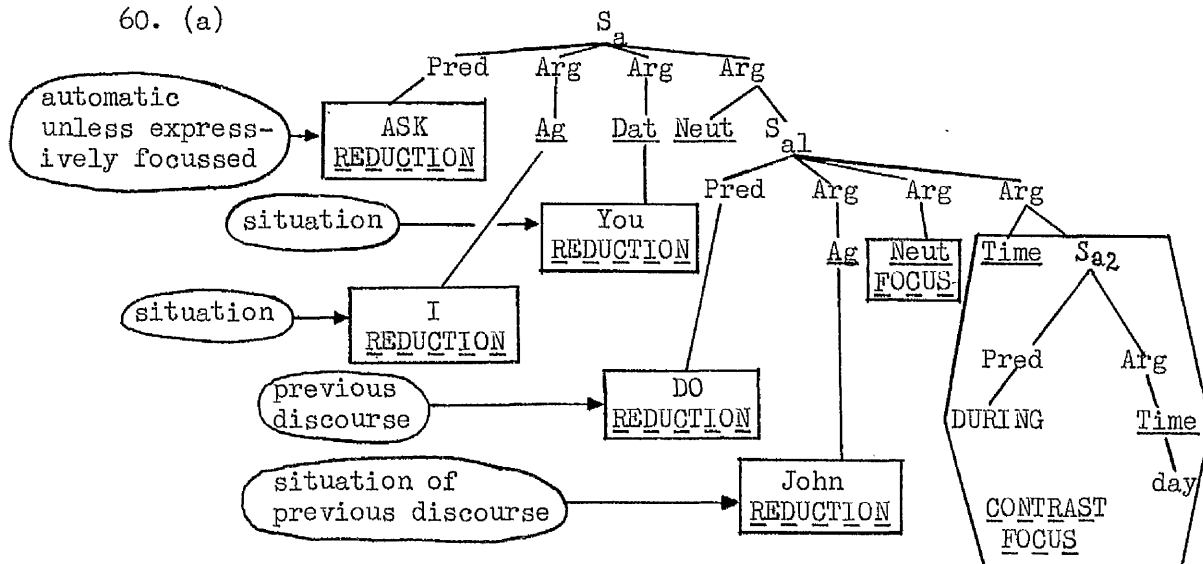
Conversely, under conditions of absolute or sloppy referential or formal identity, repetition of a subtree triggers REDUCTION, which underlies reduced stress and after that, proformation (including the formation of relative pronouns). Reduction, then, is one of the two actual operations of boundness-marking, to use Sgall's term (see above); the other is the anaphoric process of definitization, which also precedes proformation as a prerequisite. Thus reduction is founded upon repetition, whereas focus is founded on innovation.

Various other operations follow upon the assignment of focus and reduction. I have already mentioned, for the latter, that proformation depends upon reduction. For focus, there are three dependent rules: nuclear stress assignment, contrastive stress assignment, and focus-movement. We shall look at these presently, but first let us examine the basic attachment rules, using the example of (57) embedded in a short discourse:

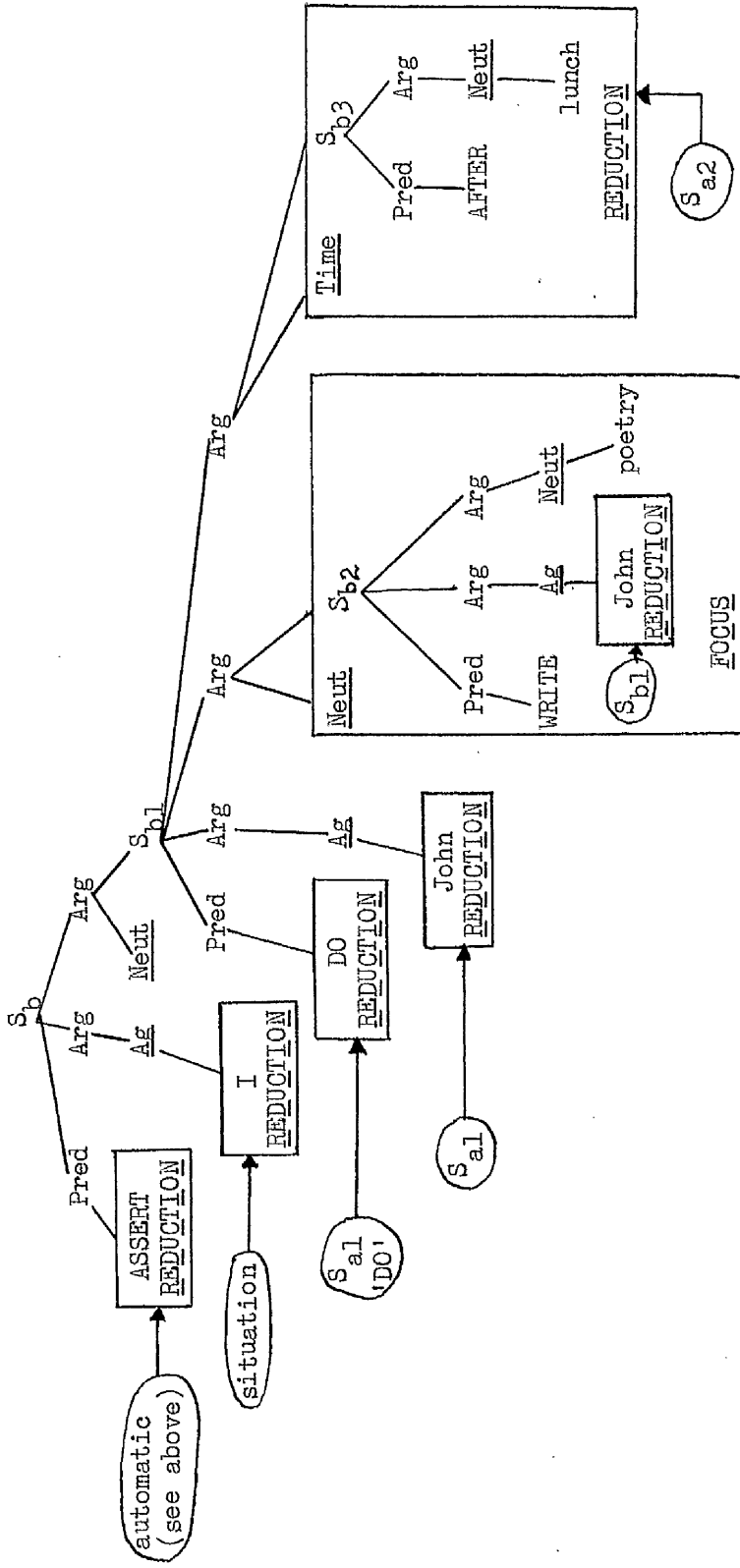
59. (a) A. What does John do during the day?  
 (b) B. After lunch, he writes poetry.  
 (c) A. Does he write poetry in his study?

The configurations underlying this discourse, together with its focus or reduction marking would be something like (60). (I am assuming some previous discourse in which how people occupy themselves is being discussed. Note too that the trees are simplified in comparison with (58a) in order to avoid too many irrelevant features).

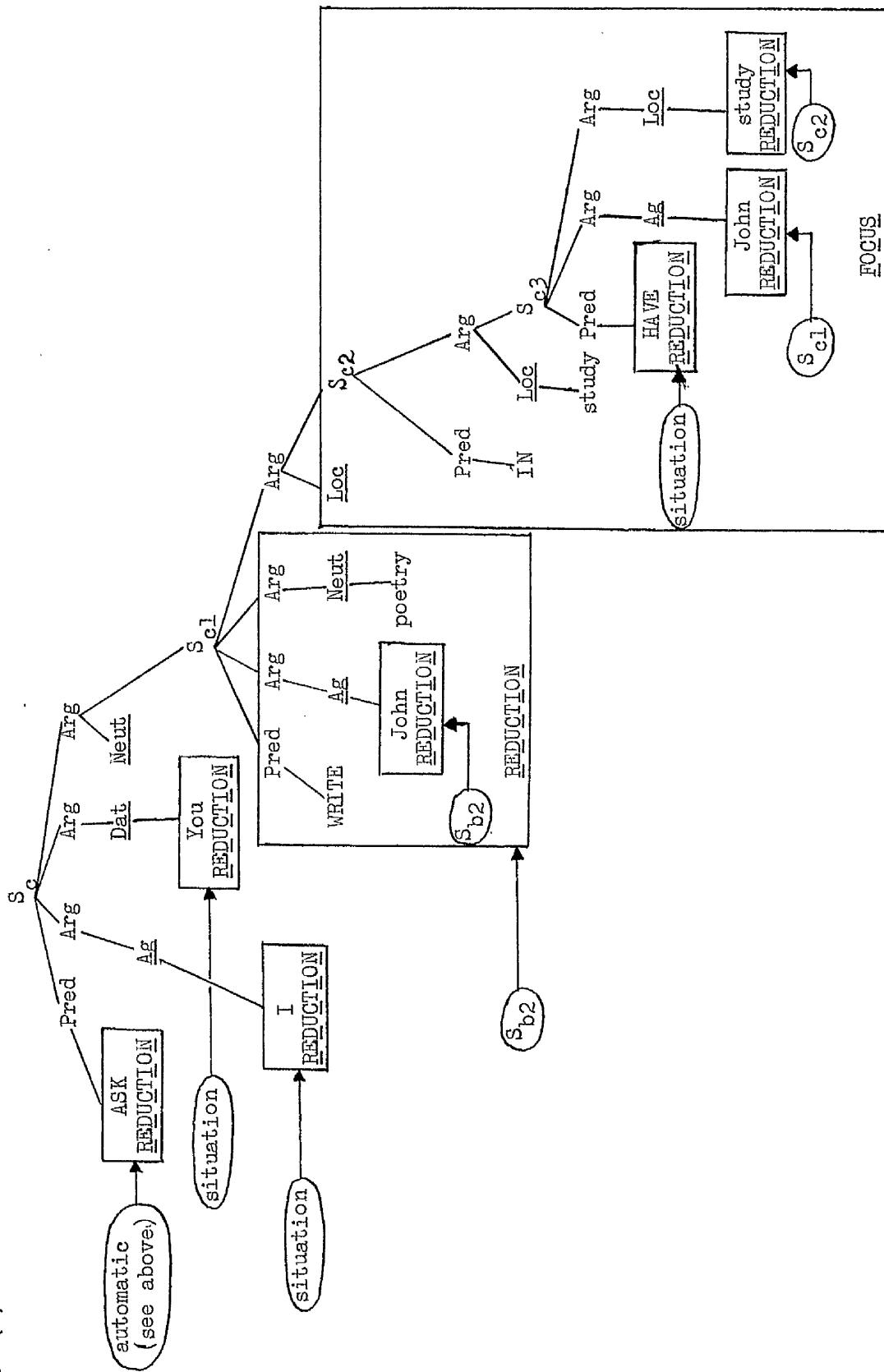
60. (a)



60. (b)



60. (c)



Let us examine these trees in turn, and then as a unit:

- (60a) is the first sentence of our example, but occurs in the context of a discussion on how people occupy themselves. I have assumed, for the sake of this illustration, that John has either been explicitly mentioned already, or else that he is "given" in the situation, perhaps because he is closely related to one of the speakers (B). (Of course, an equally plausible, but different, utterance could focus on John, either as a first-mention, or as a contrast). The higher performative is automatically reduced (and later deleted) except when it is expressively focussed:

60. (d) I'm asking you what John does during the day;  
 in any case, the pronouns referring to the present participants are normally reduced, as given in the situation (except when in contrast). The predicate do is reduced, since the preceding discourse has concerned occupations, so that the subtree for do will have occurred previously. The Neutral argument, however, is the scope of the question posed by the higher performative: communicatively, it receives FOCUS because it constitutes the "unknown" in the utterance, towards the finding out of which the utterance is directed. I have taken the Time argument as being contrastive, for the sake of the example: this implies that the preceding discourse contains discussion on what people (or John, specifically) do at night. Its surface position at the end of the sentence (60a) gives it prominence, suggesting a communicative importance (cf. the earlier discussion on CD) which might be greater than is actually warranted when it is not contrastive. A full specification would also include quantification on day: 'during any day'; and similarly on the Time argument of  $S_p$ : 'after lunch on any day'. Notice that such quantification is not of the absolute "logical" type, but is rather of the "natural logic" variety, in which universal quantification tends to denote 'typically', or 'characteristically', but not 'invariably', (cf. my remarks in section 3.13). Since the focus on the Neutral argument occurs within the scope of the higher performative ASK, a focus-movement rule obligatorily moves the node to the leftmost position under its dominating S, where it is later converted into what (being Neut and unspecified).

- (60b) has all its elements, except the Neutral argument of  $S_{b1}$  reduced (and even that contains a reduced element): the performative, as before; the predicate DO in  $S_{b1}$ , repeated from  $S_{a1}$  (for this construction with DO, cf. Ross 1972); John in  $S_{b1}$ , repeated from  $S_{a1}$ , and John in  $S_{b2}$ , repeated from  $S_{b1}$ ; and the Time argument, which is wholly contained in  $S_{a2}$  (as would be shown if its quantification were fully specified, cf. my remark above).

This Time argument is not obligatorily reduced, however: since it is more specific than its antecedent, it could, in a different utterance, be focal (in this case, contrastive, since it is a member of a small lexical set denoting "time-landmarks" during the day). Here, however, it is reduced and topicalized (i.e. moved to leftmost position under its dominating S, for which reduction is an essential precondition). This, like focal left-movement under ASK, is an optional rule so that if (60b) had ASK instead of ASSERT as its higher performative (so that the focussed node could be left-shifted), the following variants would be acceptable:

61. (a) What does John do after lunch?
- (b) After lunch, what does John do?
- (c) What, after lunch, does John do?
- (d) After lunch, John does what?
- (e) John does what after lunch?

(61b, c) show that the two rules are unordered with respect to each other. (61d, e) could, equally, be echo-questions, i.e. incredulous or angry repetitions in which the focussed element, though known, is unspecified as though it were unknown ("it couldn't be true; I must have misheard"). In echo-questions, however, focal left-movement is still optional, but some sort of expressive intonation is obligatory (usually either an increase in the range and/or intensity of the voice-pitch, or else a marked decrease). The rule of focus-movement under ASK (equivalent to Wh-interrogative movement transformations) is here taken to be optional, and not, as is customary, obligatory (given the presence of the wh-element and the Q dummy, in the Aspects version, for example). This is because the acceptability as questions of Ss with the appropriate wh-forms in the pre-movement position (vide (61d,e), for example illustrates that movement, though usual, is not compulsory. In (60b) as it stands, the Neutral node is focussed, and the point of focus itself is, in a branching sub-tree, on the rightmost non-reduced element (here, poetry): this will ultimately emerge as the intonation centre. (Contrast this with Chomsky's formulation above).

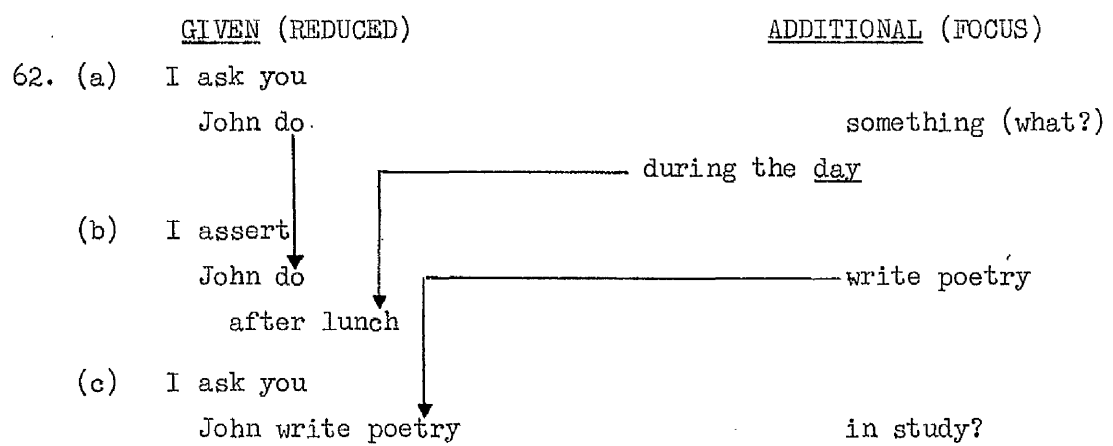
- (60c) again reduces the higher performative, under the same conditions as before. Subtree  $S_{c1}$ , apart from its Locative argument, is reduced, being a repetition of  $S_{b2}$  (note that  $S_{c1}$  is, like  $S_{b2}$ , a Neutral argument, but the fact that it is configurationally identical is probably more important). The Locative argument of  $S_{c1}$  (i.e.  $S_{c2}$ ) is focal, except that it contains three repeated, hence reduced, elements (i.e.  $S_{c3}$ : John's ownership of a study is, like John's own existence, taken as a "given" of the situation). The point of focus is the rightmost non-reduced element, viz. study.

The three structures therefore operate as a unit in that reduced elements (i.e. topics) link them one to the other, by virtue of the global coherence constraint, whereas focussed elements carry the semantic progression forward. As we have suggested in section 2.22, cohesion (or topicality), whose executive operation is reduction, is a special case of coherence involving identity relations of one kind or another. Coherence otherwise is a function of focus: as even Chomsky points out:

"For naturalness, question and answer (or denial and corroboration) must not only share presuppositions, but must also use as focus items that are somehow related - exactly how, is not clear, but the relation surely involves considerations that extend beyond grammar,"

(op.cit: 202 fn.)

It is the hypothesis of the present study that this obscure relationship results from successive subtrees in a discourse (not necessarily contiguous) which are either partially identical, or else implicationaly linked in a way which only a grammar incorporating pragmatic relationships can specify. The focal relationships between(60a), (b) and (c) are not demandingly complex:



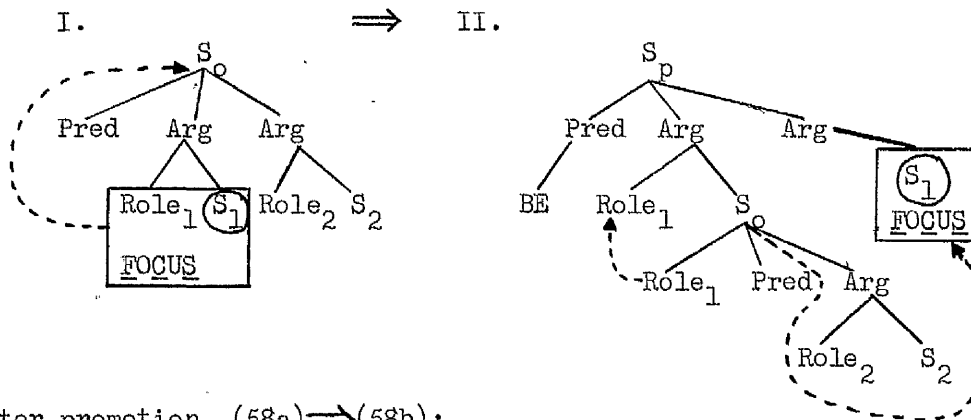
Thus write poetry simply specifies the Neutral argument which is focussed but unfilled in (a). Both during the day and in his study occupy roles which are always potentially present, but optional, viz. Time and Locative respectively (cf. my discussion of role-optionalty in Ch. IV). So, in their case, it is the grammar itself (rather than, e.g. a meaning-postulate) which incorporates the entailment that if x is an activity, then x occurs in a time and in a place.

To return to Chomsky's argument, it is his assertion that the structure represented by (57f) above could not underlie (57a, c), despite the fact that it would be advantageous to derive (57a, c) from the same source as

(57b, d). Since I have now demonstrated, albeit somewhat informally, the workings of focus in context, we are now in a position to see how these four sentences can in fact derive from a single underlying structure in which, moreover, the focussed element is to the right. Note, first, that either question form (57 a or b) could occur as (59c). The form we have examined is actually more or less (57a) (with John pronominalized). How are we to derive (57b) in the same position? As I shall be showing in greater detail in Ch. III, a construction like (57f):

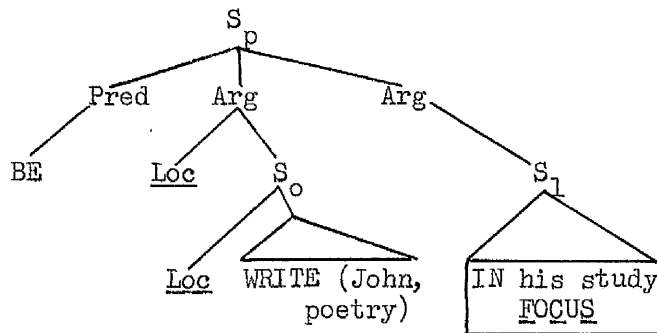
57. (f) The place where John writes poetry is in his study.  
is neither a full relative clause (which is what it appears to be) nor indeed a full pseudo-cleft (which in many ways it behaves like), but is somewhat squishily placed between those constructions: I call it a pseudo-relative (cf. also section 1.2). I argue in Ch. III that pseudo-relatives are derived by the operation of promotion. This operation takes the topmost role in focus (which is, of course, a hyponym to the subtree below it) and attaches it to the leftmost point of its dominating S, (I). This S with its new left branch is then embedded as the sister of a copy of the promoted role, the total constituting an Argument-node of a Predicate BE, whose second argument consists of the remainder of the subtree which the promoted role originally governed, (II):

57. (g)



Thus, after promotion, (58a)  $\Rightarrow$  (58b):

58. (b)



With the normal low-level rules this becomes ultimately (57f) or:

63. (a) Where John writes poetry is in his study,  
(i.e. the pseudo-cleft form), or with extraposition of  $S_0$ , (for discussion, see section 2.32):

(b) It's in his study that John writes poetry,  
(i.e. the ordinary cleft sentence).

The variety of promotion rule proposed here (which differs from that found in, for example, Schachter 1972: see Ch. III) is, as far as I can judge, given the differences in format and constituents, a type of Chomsky-adjunction. I shall now go on to examine this and other movement rules motivated by focus.

### 2.32 Focus-movement rules

I have claimed above that a large number of apparently disparate phenomena, such as sentence-stress, passivization, pronominalization, clefting etc., extraposition, and in fact virtually all the movement transformations, may be motivated by focus. All the interesting and painstaking research, moreover, which has gone into describing and establishing an order for these operations has, I claim, missed the generalisation which binds them all together, (as it was bound to do, since it has mostly been in a sentence-grammar framework), namely, that the active interrelationship between the sentences of a connected discourse sets up a more-or-less delicate balance of emphases, which is partly syntactic in that it reflects repetition of linguistic items, anaphora, introduction of new items etc. (although even these are only partly syntactic), and partly semantic in that it must also manifest such modalities as speaker's attitude (including that part which is institutionalized as "grammatical": aspect, tense etc.), intention and assumptions.

We have seen how ongoing items in a discourse are marked for reduction or focus. The tendency is for reduced (i.e. topic) items to be mentioned, or alluded to, first, with focussed items (i.e. "new" comment) following last. When, however, the material in the comment, or part of it, is not focussed, or the point of focus is removed from the rightmost non-reduced item (e.g. for expressive emphasis or contrast) then the rightmost item may optionally be topicalized. This operation, also (incorrectly) known as Y (for Yiddish)-movement, moves such an item to the leftmost position of its highest S (excluding any performative):



64. (a) Bullshot, I loathe;  
 (b) That one, I've seen;  
 (c) Budgies, I can put up with,

(notice that surface nuclear stress occurs in the final lexical item: the topicalized item has undergone topicalization precisely in order to allow the focus-point to come last in the sentence). I have said that the identification of topicalization with Y-movement (as in Postal 1971, for example) is incorrect. The two operations are superficially similar in some respects, but the crucial difference is that in Y-movement, the shifted element is focussed, whereas in topicalization it is reduced. Thus Y-movement actually has more in common with clefting (though their presuppositions differ):

65. (a) \*Now he tells me; (It's now he tells me);  
 (b) \*Shakespeare he's not; (It's Shakespeare he's not);  
 (c) (\*Budgies, I can put up with. (It's budgies I can put up with).

((65b) can also have contrastive stress on not. The Star of David indicates a Yiddishism, and is due to J. R. Ross).

The question is, of course, why should both topicalization (based on reduction) and Y-movement (based on focus) have such a similar effect, stress apart? The answer is, I think, bound up with communicative clarity, and the apparently unnatural rule of the pair, which thus seems to require explanation, is Y-movement, since it moves a focussed element to the non-focal end of the sentence. (The same is true, incidentally, of clefting, and, I shall suggest, some other movement rules also). The first point to notice is that both clefting and Y-movement exhibit not just ordinary focus, but contrastive stress (i.e. with implied negation of some other member of the same set. For the notion that contrastive stress constitutes a denial of a denial, cf. Bach 1968:98, fn.5, and Jackson 1972:98 sqq.). Compare the following discourses:

66. (a) What's your opinion of Ted Hughes?  
 Oh, Ted Hughes I like.  
 (b) What's your opinion of Ted Hughes and Thom Gunn?  
 I don't much care for Thom Gunn, but Ted Hughes I like.

((66a) is topicalized, (66b) is Y-moved). In both cases, Ted Hughes is previously mentioned, and is accordingly reduced and topicalized in (66a); but in (66b), the reduction is cancelled out by the explicit contrast, giving a pre-surface form for the second conjunct:

66. (c) I like Ted Hughes.

(If Bach and Jackson are correct in their derivation of contrastive stress, underlying (66c) would be

66. (d) I like Ted Hughes and I don't like not-Ted-Hughes (viz. Thom Gunn)).

But given the rule of ordinary sentence-stress in English, (66c) would be the stressed, non-contrastive form of the sentence. My claim is, therefore, that in order to communicate the contrastiveness, the stress-feature on Hughes either has to be greatly increased or else shifted to a position where contrast will not be disguised. The first alternative gives:

66. (e) I like Ted Hughes

(with contrastive stress realized as Rise-Fall-Rise, for example); the second gives:

- (f) Ted Hughes I like

(i.e. the conjunct of (66b) in question).

Moreover, I put forward the hypothesis that the passive is derived in a somewhat similar way, as a function of the interaction between reduction (and topicalization) and contrast (and Y-movement). Take sentence (67a) in its unmarked isolated form (italization indicates ordinary stress, capitalization indicates contrast, double underlining indicates ordinary nuclear-stress):

67. (a) Someone gave a book to Mary.

Embedding this into different discourses we get different patterns of reduction and emphasis:

- (b) Did anyone find a book?  
 (c) I don't think anyone got a book for Christmas;  
 (d) What did Mary get?  
 (e) Susan was the only one who got a book;  
 (f) Look, Susan got a pen!

In the contexts (b) - (f), (67a) undergoes variation:

- (b') 

Someone gave ( <u>implied by situation</u> ) REDUCTION	a	<table border="1" style="display: inline-table;"><tr><td>book REDUCTION</td></tr></table>	book REDUCTION	to	<table border="1" style="display: inline-table;"><tr><td>Mary FOCUS</td></tr></table>	Mary FOCUS
book REDUCTION						
Mary FOCUS						

⇒ A book was given to Mary;

- (c') 

Someone gave ( <u>implied by situation</u> ) REDUCTION	a	<table border="1" style="display: inline-table;"><tr><td>book REDUCTION</td></tr></table>	book REDUCTION	to	<table border="1" style="display: inline-table;"><tr><td>Mary (<u>Neg-not-anyone</u>) CONTRAST</td></tr></table>	Mary ( <u>Neg-not-anyone</u> ) CONTRAST
book REDUCTION						
Mary ( <u>Neg-not-anyone</u> ) CONTRAST						

⇒ A book was given to MARY, or (by a movement similar to Y-movement) MARY was given a book;

(d') 

Someone gave
REDUCTION

a book
FOCUS

 to 

Mary
REDUCTION

⇒ Mary was given a book (by a movement like topicalization);

(e') 

Someone gave
REDUCTION

a book
REDUCTION

 to Mary

(Neg-only one)
CONTRAST

⇒ A book was given to MARY, or  
MARY was given a book (cf. c');

(f') 

Someone gave
REDUCTION

a book
(Neg-pen)
CONTRAST

 to Mary

(Neg-Susan)
CONTRAST

⇒ A BOOK was given to MARY, or  
MARY was given a BOOK.

These left-moving processes are evidently encouraged by the presence, in underlying topic position, of a weak element (such as a generalized nominal: someone/thing, people etc.) This rather puzzling fact (since a weak element, already in the weakest position, is apparently moved to the strongest position in the sentence, so far as focus is concerned), is explained, I believe, by the fact that these weak elements are invariably deleted when in Passive Agent position. This would be impossible, of course, in Topic position, since this would leave a headless clause. The effect of Weak Topic Topicalization, therefore, is to transform the unstable focal structure: WEAK - FOCUS - REDUCTION, into the stable one: REDUCED - FOCUS. On the TOPIC TOPIC

other hand, a focussed or contrastive leftward element may be right-moved (rhematized), particularly when the rightmost element is reduced, encouraging topicalization anyway, e.g.

68. Buckingham Palace has withdrawn its objection to the use of newsreel pictures of the Queen attending a state opening of Parliament in 1970 in a commercial film, starring Rod Steiger, about an attempt to blow up Parliament.

- (a) That was confirmed yesterday by Buckingham Palace...
- (b) The film has been banned by EMI...
- (c) Before the film was made the company asked Buckingham Palace for permission to use parts of the relevant news film,
- (d) and that permission was granted...
- (e) One cut has been made...
- (f) The film has been passed by the British Board of Film Censors.

Here, (a), (b) and (f) are of the rhematized variety: (b), for example, has as a deeper representation:

(b') 

EMI have banned <u>FOCUS</u>	the film <u>REDUCED</u>
---------------------------------	----------------------------

(c) and (d), however, have Weak Topic Topicalization under the influence of an underlying weak topic:

(d') 

They <u>WEAK</u> <u>TOPIC</u>	granted <u>FOCUS</u>	that permission <u>REDUCED</u>
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(e), though, shows a Y-movement type of passive (though varying from the examples in (67) in that it is not ditransitive):

(e') 

Someone <u>WEAK</u> <u>TOPIC</u>	has made one cut <u>F O C U S</u> (?CONTRAST) ( <u>Neg. - none, or</u> <u>Neg. - several</u> )
--	--

Passivization, then, is claimed to be triggered by various combinations of focus or contrast and reduction, which as I have shown are themselves entirely dependent upon meaning and context. Other movement transformations which I believe can be just as successfully explained as dependent upon balances of focus and reduction include Adverb Preposing (cf. (60b) and indeed the Locative subtree of (57)), Pseudo-clefting (cf. (58)), and Wh-Question movement (cf. (60a), though I am uncertain about the details of this suggestion). Wh-Rel-movement is simply explained, too: since the relative nominal has been repeated (the necessary condition for both relativization and relative pronominalization) it is therefore reduced and topicalized to the front of its clause; thus:

69. The man #▲John had murdered 

the man
---------

 #was a Mafia leader  
TOPICALIZATION  
REDUCTION  
REPETITION

Extraposition appears in some respects to be the mirror-image equivalent of passivization, in that a strong (focussed) leftward element can be rhematized into a strong position:

70. (a) It - 

that the workers will take over the universities <u>FOCUS</u>
--

 - is possible.  
RHEMATIZATION

or a weak rightward element can be topicalized into leftmost position (not counting the it, which is part of the construction):

(b) It -▲ that Molly is five months gone - 

appears to be the case.
-------------------------

  
TOPICALIZATION  
REDUCTION

or a contrastive rightward element is Y-moved to the left in order to distinguish its contrastiveness from mere unmarked focus:

(c) It - <sup>↑</sup>that the whole world's mad except me - is absolutely  
OBVIOUS.  
CONTRAST

Y-MOVEMENT  
-----

Raising also appears to me to be capable of a similar explanation. All of the movement rules I have reviewed briefly in this section, I have taken in their post-lexical (i.e. standard syntactic) functions. Some of them have been claimed to operate pre-rotationally and pre-lexically too, and I examine these notions in Ch. IV.

To sum up Ch. II, then, my claim is that the active role played by the context should be incorporated into linguistic theory. This is where Focus and Presupposition actually have their domain; the former is concerned with the placement and repetition of information, and the latter with the logical, situational, cultural and personal assumptions surrounding the sentence or speech-act. Both in conjunction stipulate which transformational rules will apply, so that the operation of the transformational component depends crucially, in my opinion, on the thematic and contextual requirements of the preceding discourse. I also see this as contributing to a possible solution to the vexed problem of curbing the power of the transformational rules, since they would be motivated by outside circumstances, and blocked unless those outside circumstances obtained. (Indeed, Sgall et al. 1973, reviewed above, claim that a generative grammar incorporating a specification for Focus can replace one requiring global constraints). My procedure in subsequent chapters will be to derive the basic unmarked form of R (i.e. the Generic) and then to relate this to its accepted variations etc. by means of contextual information.

CHAPTER III

CONTEXTUAL FUNCTIONS AND DERIVATION OF RELATIVE CLAUSES

CHAPTER III: CONTEXTUAL FUNCTIONS AND DERIVATION  
OF RELATIVE CLAUSES

3.1 The role of the determiner in relativization

The role of the determiner and its semantic nature have figured prominently in some recent approaches to the question of relatives, notably Kuroda 1969a and Taglicht 1972. As I have already stated, I regard this as being crucial to the problem we are discussing, but I consider definiteness and specificity to be determined by the discourse rather than independently varying features of the sentence. Both Kuroda and Taglicht refer to discourse in their articles, but both claim this to be merely for purposes of illustration and quite unconnected with their method of derivation. For example, Taglicht regards certain sentence-sequences as "equivalent" to relative-clause sentences. "Equivalent" turns out to mean "appropriate in the same range of situational contexts" (e.g. p.13). Earlier, (p.2), he compares the following sentences:

1. (a) We met John, who knew the way.
- (b) John, whom we met, knew the way.
- (c) We met John. He knew the way.
- (d) John knew the way. We met him.

and comments:

"When speaking of semantic equivalence, I shall be using the term in a sense that takes no account of differences relating solely to the organization of discourse in 'information units' and to the 'thematic' structure of clauses, and it is in this sense that [(1a) - (d)] are all equivalent".

It is rather odd, therefore, that "equivalent" is later defined in a way that evidently does take account of contextual correspondence. (Furthermore, Taglicht's paper is purely descriptive-classificatory, and does not deal with derivation as such anyway). Both writers classify antecedent and relative as definite or indefinite, though Taglicht takes this much farther than Kuroda, and both seem to regard the NR/R distinction as being determined by the definite/indefinite distinction.

3.11 Kuroda 1969a

Kuroda achieves a four-way discrimination by taking all the permutations of + Def and - Def in antecedent and relative. He loses generality, however, as he himself acknowledges (p.285), by restricting these to pronominalizations (in the wider sense which includes something, anything etc., however). He

thus has two types of nominal only, THAT + Pro (= that, the thing etc.) and SOME + Pro (= something). The four combinations are therefore:

2. THAT Pro (Wh + SOME Pro lay on the table) was the tissue  
'What lay on the table was the tissue'.  
'That which lay on the table was the tissue'.
3. SOME Pro (Wh + THAT Pro surprised Mary) pleased John.  
'Something which surprised Mary pleased John'.
4. SOME Pro (Wh + SOME Pro surprised Mary) pleased John.  
'Anything which surprised Mary pleased John'.  
'Whatever surprised Mary pleased John'.
5. THAT Pro (Wh + THAT Pro surprised Mary) pleased John.  
'That, which surprised Mary, pleased John'.

Kuroda comments, ambiguously, on this last structure:

"Here, the so-called demonstrative pronoun that is assumed to refer to some definite object or incident given in the discourse context, and the clause is assumed to be non-restrictive," (270).

(The ambiguity I find is in his use of "assumed" - by him qua writer of the article? by the speaker of the sentence? by the hearer? I find it difficult to decide whether, like Thompson, he is using some sort of notion of "presupposition" - though on the precise opposite of her analysis - or whether he is merely advancing speculations which he does not intend to investigate, at least not in the course of the cited paper).

In saying that Kuroda's analysis is precisely opposite to Thompson's, I am referring to the fact that Kuroda apparently considers both types of relatives to result from embedding, since his "basic forms" are given as one S embedded in another (although one cannot be sure if these represent deep-structure forms in the Standard Theory sense). However, in a few places, he casually brings in references to conjunction:

"The pivotal noun in relativization plays in a sense the role of a conjunction in addition to its usual nominal function" (281: italics mine).

"Thus, in each of the four cases, the distribution of the determiners in the matrix and constituent sentences can be said to reflect the semantic nature of the conjoining of two component propositions syntactically realized by relativization transformation" (285).

The latter quotation perhaps elucidates the problem: Kuroda apparently considers there to be a lack of correspondence between syntactic formation and semantic interpretation, which is clearly impossible in the Standard Theory (since the former must inform the latter). He in no way announces himself to be in opposition to the Aspects model, so one must assume that this disjunction between syntax and semantics remains for him unformulated.



However, in a slightly later paper (Kuroda 1969b), he adopts a clearly interpretivist position with the exception that, as I understand it, he allows selectional restrictions to act as well-formedness conditions on transformational rules. This is not the sort of theoretical revision which his remarks above imply.

Kuroda's subsequent remarks on the definite/indefinite distinction lead him on to the gentler shores of discourse grammar, though he strenuously denies there is any syntactical relation between "relative-complex" sentences and sentence-sequences synonymous with them (p.280). (Synonymy itself he later dismisses as evidence which is "not real" for syntactic purposes (p.284 fn.18)). His arguments for this position (the unrelatedness of relatives and semantically equivalent sentence-sequences) are, however, somewhat strange, resting as they do on some unvoiced, and indeed untenable, assumptions. He starts from the sentence:

6. (a) Some policeman recorded what Mary explained to him.

There are two co-referential pairs here, the "pivotal noun of relativization, Pro", and the noun policeman, pronominalized to him. The former of these is equivalent, by his rules, to 'THAT Pro (Wh + SOME Pro ...) ...'. The latter pair of nouns, he contends, both have in their underlying forms indefinite determiners (i.e. SOME). He "proves" this by taking the passive form of (6a):

6. (b) What Mary explained to some policeman was recorded by him, in which the co-referential nouns policeman are reversed, and noting that the "basic form" of the noun is 'SOME policeman' in each case. This is to assume that the determiner (SOME or THAT) is assigned in the categorial rules and that the second occurrence of the same noun with the same determiner is definitized by a transformational rule. He takes the basic form of (6a), (b), then, as being:

6. (c) SOME policeman recorded THAT Pro (Mary explained Wh + SOME Pro to SOME policeman).

The surface forms of the constituent Ss in (6c) would be

6. (d) Mary explained something to some policeman.  
Some policeman recorded it.

On the other hand, the "discourse paraphrase" of (6a) would be:

6. (e) Mary explained something to some policeman. He recorded it. "Thus", concludes Kuroda, "we cannot say that discourse paraphrase [(6e)] is the basic form of [(6a)]". But surely not even the most rabid of discourse grammarians would assert that a discourse sequence in its surface form

would underlie a complex sentence in its deep-structure form? Sentence-sequences are as much subject to the rules of anaphora as are single sentences, as we have seen in sections 2.2 - 2.23, yet Kuroda is attempting to compare a sentence-sequence after it has undergone definitization and pronominalization of a second occurrence noun, with a representation of a structure which has not yet undergone those transformations. Naturally, he finds them different. In fact it seems much more reasonable, given that the alleged underlying forms of subsequent-mention determiners never appear in their allegedly basic form, to assume that all determiners, and indeed the <sup>†</sup>Definite feature contained in them, are fairly superficial and are assigned fairly late by (discourse) context-sensitive rules of anaphora. But the mistaken conclusions Kuroda draws in fact run contrary to his previous assumptions about coreferential nouns having identical determiners, since they force him to the belief that relativization operates differently from pronominalization in respect of determiners. He puts this down, quite arbitrarily, to the underlying order of the component sentences in a relative structure. Not only is this arbitrary, it clashes with what he asserts about the unrelatedness of complex sentences and synonymous sentence-sequences:

"the way different determiners are assigned to the coreferential occurrences of the pivotal nouns in the matrix and constituent sentences ... reflects the way the component sentences are to be ordered in their discourse paraphrases ..., and consequently the way the component propositions are to be understood to be conjoined in the complex proposition represented by the complex sentence ..."  
(281).

But how is it possible to deny that there is any syntactic relationship between complex sentences and their discourse paraphrases (p.280), while almost in the same breath suggesting that their admitted semantic relationship exerts some sort of influence on the syntactic derivation of those complex sentences (p.281)?

Kuroda then examines his four permutations of determiner, (2) - (5) above, in rather more depth, and bringing in his discourse paraphrases. At this point, it might be observed that of the four sentences, (3) and (4) could be discourse-initiators. This is in line with their SOME determination of the first noun. However, with some modification, (2) could join this set too:

7. That which lies ahead is beyond our knowing,  
and since this begins with THAT, it is somewhat more puzzling as a discourse-initiator. Indeed the distinctions between the four types are not always completely clear. Thus:

8. (a) What surprised Mary pleased John could be equivalent to (2) or to (4), and in fact Kuroda's rules account for this surface identity. But they do not account for the similarity between:

8. (b) That which surprised Mary pleased John, (i.e. equivalent to (2)), and (4). That which in (8b) can refer to some specific object or to any object whatever, provided only it answers the stipulated condition, namely that it should surprise Mary. As far as I can tell, Kuroda's rules make no allowance for a surface form like (8b) to derive from an underlying form like (4).

### 3.12 Taglicht 1972; Baker 1973

Taglicht has twice as many sentence types as Kuroda, because he marks the component  $S_{\text{S}}$  as  $\dagger$ Specific also. Of the possible 16 permutations of  $\dagger$ Definite and  $\dagger$ Specific in Antecedent and Relative, however, Taglicht uses only eight, and indeed most of the remaining eight possibilities seem to be viable, though like some of Taglicht's eight types, only trivial variations. Taglicht's eight types are:

	<u>Antecedent</u>		<u>Relative</u>		
	DEF	SPEC	DEF	SPEC	
9. (a)	+	+	+	+	We met John, who knew the way.
(b)	+	+	-	+	We met the boy who knew the way.
(c)	-	+	+	+	We met a boy, who knew the way.
(d)	-	+	-	+	We met one boy who knew the way.
(e)	+	-	+	-	?We can ask whatever boy he sends.
(f)	+	-	-	-	Any boy you meet will know the way.
(g)	-	-	+	-	We'll meet some boy, who'll know the way.
(h)	-	-	-	-	Some boy we meet will know the way.

The other eight are:

10. (a)	+	+	+	-	We met John, who'd know the way.
(b)	+	-	+	+	We can ask any boy, who'll know the way.
(c)	+	+	-	-	We met the boy who'd know the way.
(d)	+	-	-	+	Any boy you met would know the way.
(e)	-	-	-	+	We'll meet some boy who knows the way.
(f)	-	+	-	-	A boy we meet will know the way.
(g)	-	-	+	+	We'll meet a boy who knows the way.
(h)	-	+	+	-	We met a boy, who'd know the way.

(9e) is queried (a) because it is unclear from the paper whether this is indeed the intended example for this configuration, and (b) because, according to Taglicht's rules on p.7, restrictive relatives are marked [-DEF]).

Taglicht characterizes "specific" and "definite" as follows:

"[+spec] indicates that an entity has been previously identified by the speaker for himself, while [+def] indicates that an entity is being identified for the hearer" (p.1),

and promises that their nature will become clearer subsequently. From his use of it; the criterion of "previously identified by the speaker for himself", while a plausible and interesting notion, is by no means a semantic primitive, since it seems to be intimately bound up with verb tense and meaning, quantification, and the other clause of the sentence. Take, for instance, his Type 2 sentence, (9b) above.

9. (b) We met the boy who knew the way.

If we embed this in suitable contexts, we find it is ambiguous, however:

11. (a) We met the boy who knew the way to the Green Chapel<sup>3</sup>, and he said that any time we wanted directions, we only had to ask;
- (b) Merlin said there was a boy who knew the way to the Green Chapel, and after many feats of derring-do and dragon-slayings, we (indeed) met the boy who knew the way.

In (11a), (9b) is discourse-initial; in (11b), it is not. In the former, (9b) states:

12. (a) 'There exists just one boy such that that boy knows the way to the Green Chapel';
- (b) 'We met him'.

I shall be trying to show in section 3.13 that the presupposition of uniqueness is a contextual function - but this is in fact consistent with the broader claim (see section 2.17) that all presupposition is contextual in the sense that it assumes a context, verbal or situational, though in certain "pathological" cases, e.g. Have you stopped beating your wife?, the assumption may actually be wrong, which then gives rise to the oddity of the question. In the case of (11a), the relevant context follows the uniquely-referring NP, or rather, more accurately, the uniquely-referring NP contains its context of reference, and this happens to follow the

<sup>3</sup> I have added the directional phrase simply to avoid the irrelevancy of assigning a "previous mention" to the way, which is of course not the NP under consideration.

antecedent of the R. On its own, with no further context, (9b) is ambiguous between an anaphoric and a cataphoric interpretation, so it is quite conceivable that a speaker could intend one of these senses, and the listener understand the other. It is a reasonable assumption, however, that with no preceding information, (9b) can be taken to be discourse-initial, and to provide its own context. The listener would then be perfectly justified in believing there to be just one such boy, or believing that the speaker thinks there is just one such boy. This is again a matter of the presupposed contractual relationship between the participants in a speech-event, which operates irrespective of mistaken beliefs or deliberate falsehoods on the part of one of the participants, (cf. section 2.13). In (11b), on the other hand, (9b) is still ambiguous:

- 13. 'We met the boy previously referred to either in terms of (12a), or in terms of (14).'
- 14. 'There is a set of people such that those people know the way to the Green Chapel, and there exists a boy such that that boy is a member of that set.'

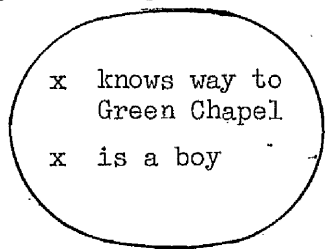
In fact, the existential sentence embedded in (11b):

15. There was a boy who knew the way to the Green Chapel, is the antecedent of the boy later on in the sentence and it is the ambiguity of (15), (which can mean either (12a) or (14)), which accounts for the ambiguity of (9b) in that context. But the ambiguity does not end there. Even (12a) is ambiguous, between a unique set sense, and a unique subset sense:

- 16. (a) 'There exists just one person such that that person knows the way to the Green Chapel, and that person is a boy',
- (b) 'There is a set of people such that those people know the way to the Green Chapel, and there exists just one boy such that that boy is a member of that set.'

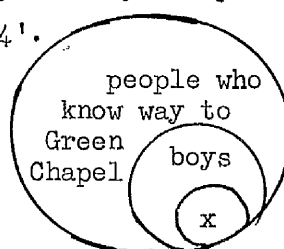
There are, then, three possible senses for the definite NP the boy in (9b), corresponding to (16a) [unique set], (16b) [unique subset], and (14) [non-unique subset]. Venn diagrams may clarify the position:

16. (a')



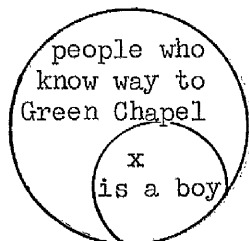
[unique set]

14'



[non-unique subset]

16. (b')



[unique subset]

(11a), then, can embody (16a) or (b), but not (14); (11b) can embody all three senses. The former must apparently include unique specification (cf. section 2.16) of some sort (since it is discourse-initial). The latter as a whole does not have this requirement, though (9b) embedded in it, and referring back to (15), does uniquely refer to an individual. "Specific", then, seems so far to cover several notions, and the list is not in fact complete, as a different set of examples (Rs only) will demonstrate:

17. (a) The doctor who treats private patients gets rich quick.
- (b) The doctor who treats my daughter gets rich quick.
- (c) The doctor who knows private patients gets rich quick.
- (d) The doctor who knows my daughter gets rich quick.
18. (a) The doctor who treats private patients is my Uncle Silas.
- (b) The doctor who treats my daughter is my Uncle Silas.
- (c) The doctor who knows private patients is my Uncle Silas.
- (d) The doctor who knows my daughter is my Uncle Silas.
19. (a) The category of East End G.P. contrasts with the doctor who treats private patients.
- (b) ?The category of East End G.P. contrasts with the doctor who treats my daughter.
- (c) The category of East End G.P. contrasts with the doctor who knows private patients.
- (d) ?The category of East End G.P. contrasts with the doctor who knows my daughter.
20. (a) I met the doctor who treats private patients.
- (b) I met the doctor who treats my daughter.
- (c) I met the doctor who knows private patients.
- (d) I met the doctor who knows my daughter.

The paradigm can be repeated for at least the following quantifiers and determiners on doctor: any + sg., any + pl., a, some + sg., some + pl., some + pl., every + sg.,  $\emptyset$  + pl., the + pl., all + pl., giving a further

160 sentences, almost all of which are grammatical. The variables in (17) - (20) are as follows:

(i) sentences numbered (a) and (c) contain a necessarily indefinite NP in the relative clause (not the relativized NP itself), while even-numbered sentences contain a necessarily definite NP. (The personal pronouns and their derivatives are generally definite (cf. Postal 1969a)).

However, there are exceptions, which could therefore appear in generic sentences, (which normally require indefinite predications, as will be seen). The exceptional pronouns are you (= one), and 3rd person pronouns when referring back to a generic antecedent.

21. (a) The doctor who treats you like a machine is fortunately rare.

(b) The doctor who treats his patients like dirt cannot expect to last long.

These forms are presumably no more definite than any generic noun).

(ii) sentences numbered (a) and (b) contain an Action predicate in the relative clause, while those numbered (c) and (d) contain a Stative predicate in the relative clause.

(iii) alternate blocks of four sentences contain an (indefinite) stative predicate, ((17) and (19)) or a definite predicate, ((18) and (20)), in the matrix sentence.

(iv) (17) - (18) have the antecedent in subject position, (19) - (20) in object position in the matrix S. Sentence (18) corresponds very nearly with (20) apart from this, and has almost the same range of possible meanings, as will be shown presently. The same is not quite true of (17) and (19), where there seem to be different semantic possibilities with the antecedent in subject or in object position.

Furthermore, I distinguish at least five types of interpretation for such sentences:

(A) GENERIC, roughly equivalent to a logical IF/THEN predication, e.g. (17a) = 'If a doctor treats private patients, then he gets rich quick.'

(B) ITERATIVE (repeated or single action), which may be durative or punctuative, depending on the verbal content and aspect, e.g. (18b) can = 'The doctor who regularly treats my daughter is my Uncle Silas.' I subsequently use this category to include states, as well as actions, on the grounds that states and actions form a semantic continuum, with repeated actions being situated somewhere in the middle of the scale.

Take, for example, a predicate such as TEACH: Bert is a teacher, Bert teaches (both stative); Bert teaches knot-tying at the annual Boy Scout camp (repeated action; but surely not different in kind from the earlier examples, merely in degree); Bert taught me the Three-Card Trick (single action in the past; but again not different in kind from other examples implying or expressing a longer teaching period split up into separate sessions: Bert taught me the violin (in six months)). The point is that uses universally agreed to be stative - ranging from God is love to My cat likes whelks - themselves occur along a continuum calibrated for the time-scale involved, ranging from Eternity right down to 'a finite period including the present moment', which in real terms can be very short. Perhaps the answer is to include in semantic structure a quantified time variable ('for all  $t$ ', 'for some  $t_n$  ( $n \geq 1$ )'), although again, presumably, the difference between the universal time-quantifier and the recurrent time-quantifier with  $n$  valued at  $\infty$  and with infinitely short intervals between each  $t$  is purely technical. For these reasons I have decided to group all stative and active events together under ITERATIVE, whose class-meaning is therefore something like 'actual event'.

- (C) ANAPHORIC, referring, for example, to a uniquely defined subset of a previously identified set, e.g. (18a) = 'Of that group of doctors, the one who treats private patients is my Uncle Silas,' (= sense (16b) above. The other anaphoric senses also apply.
- (D) PREDICTIVE, having a 'future conditional' meaning, e.g. (17b) can = 'If any doctor treats my daughter, he will get rich quick (I'll make it worth his while).'
- (E) STIPULATIVE, in which the matrix sentence provides the stipulation for the relative clause to come about, i.e. the reverse of the predictive arrangement. This sense is not very clear with any of (17) - (20), but c.f.

22. (a) The suitor who catches my daughter is a lucky man  
(which can also be predictive). This can =  
    (b) 'In order to catch my daughter, any suitor must be a lucky man',  
i.e. it stipulates the prerequisite for catching the speaker's daughter.

These categories are not intended to be mutually exclusive, "either-or" classes; instead, I would expect them to lie along continua (whose precise deployment and relationships, however, I have not investigated). I would



certainly expect the GENERIC - ITERATIVE categories to behave in this way: after all, a generic statement is arguably no more than an abstraction out of a regularly recurring circumstance (cf. my comments on iterative, above): oil (regularly) floats on water. If these classes are held to be discrete, problems are encountered when dealing with event-series whose span of recurrence is shorter than 'for all conceivable time', and for this reason continua are preferable. Thus, in the doctor who (regularly) treats my daughter gets rich quick, where there may be a set of doctors who fit the description, (I am indebted to John Lyons for this example), it is perhaps impossible to decide whether the doctor is generic or iterative: perhaps the answer is both and neither.

A similar continuum can be argued for with GENERIC - PREDICTIVE, except that in this case there is presumably also some interrelationship with "actual" vs. "non-actual" time-reference, i.e. present and past vs. future and conditional. Thus: The professor who is appointed will be responsible for ... and he will receive a salary of not less than £150,000 p.a. This refers to a "possible world" in which a single individual (not a set) is to be appointed to a post, and the pronominal reference is anaphoric in that world (i.e. anaphora does not presuppose existence). However, in The man who finishes the course will receive £1000, and he will also be eligible to enter for our bonanza jackpot, there is, apart from the obvious predictive sense, a (for me only just possible) generic interpretation (Any man who ...), and in this case the pronominal reference is variable, though still, I would argue, anaphoric in that it refers back to the conditions of eligibility in that possible world.

The semantic possibilities of the sixteen sentences in (17) - (20) are as follows:

Sentence	(A) GENERIC	(B) ITERATIVE	(C) ANAPHORIC	(D) PREDICTIVE	(E) STIPULATIVE
17. (a)	+		?+		
(b)		+	?+	+	?+
(c)	+		?		
(d)			?	+	?+
18. (a)			+		
(b)		+	+	+	?+
(c)			+		
(d)			+		
19. (a)	+				
? (b)					
(c)	+				
? (d)					
20. (a)			+		
(b)		+	+	?+	
(c)			+		
(d)			+		

From this array, it should be noted:

- (i) GENERIC occurs only with indefinite NPs and predicates. The exception to this statement may involve proper nouns denoting places, and persons, e.g. 23. The doctor who trains {with Professor Krankheit } gets a

good start,  
good start,

which may be generic or iterative (which, when past, relates to a "single" action) as well as anaphoric and, in the right context, predictive and stipulative also. The quantifier of the antecedent NP is almost immaterial, as substitution of other quantifiers will show, provided that the rest of the sentence is indefinite as noted. Furthermore, the generic sense is always cataphoric, i.e. a generic sentence such as The dog is a quadruped would be tautologous in an anaphoric situation:

24. (a) I have just trodden on a dog. The dog is a quadruped. as it would normally be in a "definite" situation:

(b) I have just trodden on a dog which is a quadruped.

- (ii) ITERATIVE occurs only in definite contexts and therefore never co-exists with the generic sense, unless the context is ambiguous as to definiteness, e.g.

25. The punter who wins the Pools is a lucky man.  
It too is cataphoric.

- (iii) ANAPHORIC is the most widespread possibility (though not necessarily the most common). It is neutral as to definiteness, but strongly resists a very generic context (e.g. (19a), (c)) and is dubious in a fairly generic context (e.g. (17)), more so with stative predicates than action ones. The sense which I have termed, simply, "anaphoric", however, is, as we have seen previously, itself three-ways ambiguous (see (16a), (16b), (14)). I shall return to this presently.

- (iv) PREDICTIVE occurs in definite contexts, though tending to resist stative predicates. It is cataphoric, also.

- (v) STIPULATIVE happens not to fit these particular sentences very well, for reasons I do not fully understand. (22a) possibly accepts this sense more comfortably because its main predicate 'BE a lucky man' is more versatile in the verbal tenses which it can represent. Stipulative, again, occurs in definite contexts and is cataphoric.

One broad distinction which can be drawn, therefore, and which is relevant to the function of sentences in discourse, separates interpretation C, as anaphoric, from A, B, D and E, which are cataphoric. The latter are self-defining nominals which can introduce discourse; the former defines its antecedent as a special subset of some previously indicated set, and hence must refer back to preceding discourse. The further distinctions to be made between A, B, D and E, then, are presumably functions of context largely, though intimately bound up with time-reference, in particular, which topic cannot be investigated further here.

Returning to Taglicht's paper, therefore, and to his notion "specific", we are now in a position to judge the value of this more accurately. His sentence (here numbered (9b)), which has already been discussed, clearly most resembles, of the sixteen examples (17) - (20), number (20a), which is marked in the chart as taking the anaphoric sense (or rather three senses) only. However, even ignoring that three-fold ambiguity, this apparent unity of interpretation is not mirrored by all the other sentences, by any means, and what is more important, Taglicht's categories of specificity and definiteness appear to result not from any simple-sounding "identification by the speaker", but instead from a complex interaction of predicate type, tense (which I have not discussed), quantification and even perhaps depth of embedding. All of these, I claim, are determined by the sentence's function within its discourse, and indeed in actual speech many of the ambiguities marked above are in fact dispelled by discourse-determined stress distinctions, which a more complete account than this must systematically explain.

So far, our account has been concerned almost exclusively with definite NPs. I shall be showing in section 3.13 that a and the (sg.) are synonymous in generic, stipulative and predictive contexts, and that the other differences of interpretation are purely contextual.

Baker 1973, however, argues that there are two types of sentence; those with definite (or generic) subject-plus-predicate, and those with "existential verb"-plus-indefinite NP. Anaphoric the, he claims, "is in all cases an item inserted when an existential sentence is embedded in the determiner" (p.11), e.g.

26. (a) Yesterday Anderson kissed a girl with blue eyes.  
 (b) The girl called the police.

These exemplify an indefinite NP in (a) and an anaphoric the in (b) (i.e. in the girl). Baker derives them in this way, as far as I understand it:

27. (a) there was a girl with blue eyes whom Anderson kissed  
yesterday  
(b) the # there was a girl whom Anderson kissed # girl called  
the police.

Thus he is claiming that "it seems to be a characteristic of the anaphoric article that the following noun must somewhere in the discourse, either in a previous sentence or else in a relative, have occurred in what I have analyzed as an existential sentence" (ibid.), i.e. as a specific indefinite. The difference between specific and non-specific indefinites may be illustrated as follows:

28. (a) Rambling Sid is cooking for a cafe;  
(b) Fumbling Fred is looking for a wife.

(a) is very unlikely to be anything but specific (i.e. "#... for any cafe" seems remote), while (b) can only be specific if Fred is looking for somebody else's wife (in which case the phraseology is odd) or else one of his harem (in which case we would expect "one of his wives"). This corresponds to the well-known feature of existentiality, discussed in Bach 1968 and McCawley 1970a, for instance, whereby some sentences may in fact be ambiguous between specific and non-specific interpretations:

29. Maud { hopes  
wants  
plans  
intends  
... } to marry a millionaire.

The specific sense implies existence and may be paraphrased:

30. (a) There is a millionaire who Maud wants to marry;  
(b) Maud wants to marry a { certain  
particular } millionaire;  
(c) Maud wants to marry { this } millionaire.  
{ some }

The non-specific sense merely states criteria to be satisfied:

31. (a) Maud requires herself to marry a millionaire;  
(b) Maud wants to marry any old millionaire;  
(c) If someone is a millionaire, Maud wants to marry him;  
(d) Maud wants to marry anyone who is a millionaire.

Baker takes it that an explicit existential like (30a) underlies not only the specific sense of (29), but also its non-specific sense since, among other reasons, the existential there-construction can actually be used

non-specifically: thus (32) is not in fact ambiguous in the same way as (29), but instead is non-specific:

32. Maud wants there to be a millionaire for her to marry.

However, it seems to me that Baker's solution at this point is counter-intuitive: non-specific indefinites clearly do not presuppose existence. Both (29) and (32) have an S embedded under want, which imposes a condition of unfulfilledness upon the verb immediately below it: thus in (29), Maud is necessarily unmarried to (some or any) millionaire; in (32), there necessarily is no millionaire around for Maud to marry at the time of the major predicate. Baker analyses a sentence similar in form to this presupposition of (32):

33. (a) There is no one in this room who knows the quadratic formula, suggesting that underlying it is a negated positive-existence predicate:

(b) It is not the case that there is someone in the room who knows the quadratic formula.

Thus the presupposition on (32) might overlie:

34. It is not the case that there is a millionaire for Maud to marry. (and notice that both (32) and its negative presuppose (34), showing it to be a genuine presupposition). So, underlying both senses of (29) is the presupposition of unfulfilledness:

35. It is not the case that Maud is married to a millionaire, but the specific sense, in addition, presupposes existence:

36. There is a millionaire who Maud wants to marry.

My question at this point is: if an existential such as (36) underlies (i.e. as a derivational stage) not only the specific sense of (29), but also its non-specific sense, how is the ambiguity of (29) to be explained?

Returning to definite articles, in section VI Baker suggests that his formulation in (27) above is inadequate since embedded clauses containing definites would by that formulation lead to an infinite series of embeddings of existentials, e.g.

37. (a) There's a fish that John wants to catch;

(b) There's a fish wh John wants to catch the # there's a fish wh John wants to catch the # there's a fish wh John wants to catch the # there's ... # fish.

Baker's alternative is to propose "that a noun phrase may become definite whenever there is an occurrence of an identical noun (with identical reference) in an existential occurring previously in the discourse or else in the same tree" (p.16). Given that, as we have seen, Baker wants to derive

specific (and non-specific) indefinites from existentials, this proposal amounts to saying that "first-mentions" in a discourse are indefinite, while subsequent mentions are definite: not a strikingly original observation. Nor, however, is it particularly accurate: I have argued that an existential derivation for non-specifics does not appear to be well-founded. However, even assuming that it is, the rule of anaphoric definitization would have to be highly idiosyncratic semantically:

38. (a) Colin wants to marry a nymphomaniac;  
 (b) The nymphomaniac must own a brewery;  
 (c) The nymphomaniac wants to marry Colin;  
 (d) The nymphomaniac is a profoundly disturbed person;  
 (e) The nymphomaniac is a sexually insatiable woman;  
 (f) The nymphomaniac doesn't exist.

(38a) may, like (29), be either specific or non-specific. However, the possible subsequent mentions (38b) - (f) select (disambiguate) the interpretation of (38a) in a way that must depend on their own internal meaning. Thus, (38b) selects the non-specific sense, since as we have seen above, it contains a stipulation, which is an unfulfilled condition. (38c) selects the specific sense, since, although its predicate is structurally similar to that of (38a), the object of the lower S is definite (as proper nouns almost invariably are, cf. section 2.16). (38d) is ambiguous between a specific and a non-specific (in this case, generic) sense, and this depends upon the interpretation of the indefinite predicate NP. (38e), on the other hand, which is superficially similar, can only be non-specific, in fact, since its sense is analytic, and therefore generic; it therefore selects the non-specific sense of (38a), (38f) is, oddly enough, at once specific and non-existential (although a non-specific interpretation is just possible: Colin's conditions for wifeness are nymphomania and non-existence). The apparent paradox is explained by the observation that (38f) is metalinguistic or, at least, de dicto (cf. McCawley 1970a): but I say she doesn't exist. I cannot imagine how these very different conditions could be built into either a syntactic transformation or a rule of deep- or surface-structure interpretation.

A second objection to Baker's alternative (amounting to first-mentions being indefinite, subsequent mentions definite) is that the antecedent to an anaphoric definite NP can easily be a proper N (which as we have seen is definite), a cataphoric definite NP, or a homophoric definite NP:

39. (a) Mr. John Stonehouse, MP, sat in an Australian prison cell tonight ... It was a day-long drama for the runaway MP ... the MP argued heatedly ... Then the man who had been Britain's Postmaster General in the 1960's struggled to a departure gate ...

The Times, 10.6.75

(b) The three biggest rail unions have been invited to meet the British Railways Board ... The three unions have been told that the talks will involve the interpretation and implementation of the recent pay tribunal award ...

ibid.

(c) The French Government confirmed today that it had carried out its first underground nuclear test ... Experts consider that the latest explosion confirms the French Government's decision ...

ibid.

Presumably, Baker would not argue that these first-mentions contained an existential predicate of the form he postulates for indefinite first-mentions (though of course they all presuppose existence). Even if he did, the anaphoric subsequent-mention in (39a) is not an identical noun (though it has identical reference): thus the condition for his rule would not be met, and (39a) would be marked as deviant.

Nor, indeed, is it the case that anaphoric NPs are always definite: as we shall see in the next section, an indefinite anaphor is perfectly possible:

40. Mort has a large circle of crazy friends. For example, he has a friend who stuffs beetles,

which, though grammatically indefinite, is semantically "definite" (in that it refers to a specific, known individual), but non-identifying. (This recalls Taglicht's suggestion (discussed above) that [+ spec] represents the speaker identifying an entity for himself, while [+ def] identifies it for the hearer. However, as we have seen, [+ spec] is in fact a much more complex condition than Taglicht accounts for).

It seems doubtful, then, that all indefinites are existentially-derived (in fact, it is not even the case that they all presuppose existence, even in some possible world:

41. (a) An aged baby is a contradiction in terms;  
 (b) I'm looking for a replacement;  
 (c) I dreamt I was a cucumber.

In fact, (41c) presupposes I  $\left\{ \begin{array}{l} \text{am} \\ \text{was} \end{array} \right\}$  not a cucumber.

This leads us to ask how Baker accounts for indefinites in copulative predicates:

42. I am a genius.

Is this to be derived from:

43. There is a genius who is me  
(which I would mark ?? if not actually #)? All of these doubts appear to add up to a considerable case against Baker's arguments.

Referring to the above categories of interpretation, then, the possibilities for indefinite NP antecedents to relative clauses (i.e., for the sake of this exposition, those with a) appear to be present in:

44. (a) I have a friend who collects wombats (ANAPHORIC or ITERATIVE)  
 (b) I want a friend who collects wombats (STIPULATIVE)  
 (c) An Eskimo who collects beer mats is somewhat unusual (ANAPHORIC or STIPULATIVE)  
 (d) A tarantula is a poisonous spider which lives in the Tropics. (GENERIC)  
 (e) A tarantula which answers to the name of 'Tibbles' has been lost in the Macclesfield area (ANAPHORIC or STIPULATIVE)  
 (f) A tarantula which bites my mother-in-law will die in agony (PREDICTIVE)  
 (g) A man who comes to clean our drain every Tuesday gave me a tip for the Derby (ITERATIVE)  
 (h) A traveller who came into view over the brow of the hill bore all the signs of hunger and fatigue (ITERATIVE)

These show similar variations in sense according to verb tense, type of embedding etc., as did the equivalent examples with definites above. In the next section I shall try to show that the differences between definite and indefinite relative clauses are solely contextual.

### 3.13 Determiners and context in relative clauses

I shall discuss Rs and NRs separately, starting with the former. In the brief study of definiteness etc. in Rs above, I noted that there were two general types of interpretation for "specific" Rs, namely anaphoric and cataphoric, each of them covering several separate senses, as follows:



45. ANAPHORIC	CATAPHORIC
Antecedent refers to:	Antecedent refers to:
(I) Previously-mentioned, non-unique member(s) of previously-defined set. (= (14))	(IV) Any member of a self- defining set (GENERIC)
(II) Previously-mentioned, uniquely-defined set of one or more entities. (= (16a))	(V) An individual or set of individuals designated by a defining expression which may refer to 'actual occurrence or state' (ITERATIVE), or
(III) Previously-mentioned, uniquely-defined subset of a previously-defined set. (= (16b))	(VI) 'unfulfilled condition' (PREDICTIVE and STIPULATIVE).

This list of senses primarily refers to antecedents having the as determiner, and in this case are identically deployed both in the singular and the plural. Similar remarks apply, however, to antecedents with other determiners, although the deployment of senses is not then as in the diagram given in the previous section. The closest match in this respect is between the (sg.) and a, which are, as near as I can tell, synonymous when generic, and differ otherwise mainly in regard to the anaphoric senses. Thus:

46. (a) A suitor who catches my daughter is a lucky man, can be anaphoric (as well as iterative, predictive and stipulative), and then most obviously has sense (I), but without the 'previously-mentioned' condition (which is a contextual stipulation, anyway):

(I') 'A non-unique member of a previously-defined set' i.e.

46. (b) 'One of the suitors who catch my daughter ...' (cf. (40) above). The unique set/subset interpretations (II and III) appear not to be available in this case, which tends to confirm traditional accounts of the v.-à-v. a, which make the either "uniquely specifying" or else "referring back". Remove these two conditions, and all there is left of the anaphoric senses is precisely (I') above. On the other hand, it might be argued that (I') seems to be more or less the same as (IV), the generic interpretation. This is not so, however: the crucial difference between (I') and (IV) lies in the stipulation "previously-defined" as opposed to "self-defining". As I have observed above, the generic interpretation is seemingly inapplicable to sentences containing definite predicates (although what these are is by no means simply defined), so that (46a) does not have the generic meaning (IV).

This is because the generic sense relates to classes (sets), not individuals (members). Set-theory would suggest that a possible conflation of these would be associated with sets containing just a single member, since one-member sets are, like zero-sets, fully equivalent in set-theory to plural-member sets. However, I doubt if this is the case in natural language; that is to say, I doubt whether one-member sets can ever be generic. Thus, the first man to set foot on Mars ... can either precede a definite predicate, in which case it will be iterative (... (always) eats Crunchie-Pops/... was violently sick), or else an unfulfilled-condition predicate, which will make it predictive or stipulative (... will be a scientist). A "previously-defined set" is definite. A "self-defining set", on the other hand, does not refer to any set stipulated as existing prior to the selection of one of its members, but instead consists of conditions the satisfaction of which will guarantee membership of some set (hence the possible paraphrase with logical IF/THEN).

Let us now take the iterative, predictive and stipulative senses of (46a), all of which are cataphoric. The iterative sense may roughly be paraphrased as

46. (c) 'There are several suitors who catch my daughter regularly, and one of them is a lucky man (in some unspecified respect)'.

The difference between (46b) and (c) is that the latter but not the former could initiate a discourse, which is to say that (46c) consists of an existence-predicate for a set, together with recognition-criteria for set membership and specification of a non-unique subset, whereas (46b) consists of a previously-defined set and specification of a non-unique subset. It looks, therefore, as though (V) (iterative) is the cataphoric equivalent of (I) and (I'), with the existence predication and defining criteria being equivalent in some sense to previous mention and previous definition (perhaps respectively).

The predictive sense of (46a) may be paraphrased as

46. (d) 'If there is a suitor who will (be able to) catch my daughter, he will be a lucky man (to have caught such a prize)'.

Again, this seems to me to be practically synonymous with the equivalent definitely-determined sentence (22a) in its predictive sense. For not easily definable, though perhaps nevertheless obvious, reasons, there are no anaphoric equivalents of predictive meanings, since in predicting, one is designating the conditions for membership of some set (as with (46c))

though without any existence-predicate (since existence is conditional upon the criteria laid down being satisfied, and predicting is a statement of these criteria).

The stipulative sense of (46a):

46. (e) 'If there is a suitor who will be able to catch my daughter,  
he will have to be a lucky man (in order to catch her)',

again is virtually identical in meaning with the stipulative sense of (22a). Instead of predicting a consequence of membership of some set (as (46d) does), (46e) adds a further condition for set-membership. Otherwise, (46d) and (e) are identical, and I have tended to take them together. Indeed, in all the environments I have tested, predictive and stipulative senses occur over precisely the same range of items, with but a single exception,  $\emptyset$  + pl:

47. Doctors who treat my daughter are lucky men,  
which can be either iterative or stipulative, but not predictive. Why this should be, I cannot say.

The situation seems to be, therefore, that the and a (and indeed other determiners and quantifiers too) are synonymous in generic contexts (though there are still some as yet unexplained co-occurrence distinctions between them:

48. (a) The madrigal is polyphonic/popular.

(b) Madrigals are polyphonic/popular.

(c) A madrigal is polyphonic/\*popular.

[Cited, with similar puzzlement, in Lawler 1972:10].

It might be suggested that the term "generic", as commonly used, covers several senses. (48a) might reasonably be regarded as a true generic, since it refers to a type, race, species, etc., and one is predicting something of the whole genus. (48c), however, is perhaps definitional: if x is a madrigal, then x is polyphonic. If the predicate denotes what the speaker holds to be an essential property, it will co-occur with both definite and indefinite singulars - but this does not make them synonymous. (48b), on the other hand, is perhaps indeterminate rather than ambiguous between generic and other interpretations.

If this is indeed the case, one would expect to be able to distinguish between (48a), (b) and (c) contextually, e.g. by conjoining them with unambiguous sentences. One would expect unlike interpretations to be unconjoinable. I have been unable to find any really convincing contexts, but such examples as I have examined seem either to accept all three



50. The  $\left\{ \begin{array}{l} \text{surgeon} \\ \text{psychiatrist} \\ \text{dentist} \\ \text{physiotherapist} \end{array} \right\}$  who had treated Kennedy ...

but not with the more general set:

51. The  $\left\{ \begin{array}{l} \text{stockbroker} \\ \text{pop singer} \\ \text{novelist} \\ \text{racing driver} \end{array} \right\}$  who had treated Kennedy (to a drink) ...

Thus, specifically anaphoric effects are gained by "previous mention", whereas the "uniquely specified" effect is gained from explicit or inferred contrast, and for the time being, we can set them aside to be dealt with as contextually-determined. This leaves, apart from senses (IV) and (VI), sense (V) which we have seen, is identical with sense (I) except for the "previous mention" stipulation.

I believe that it is possible, in like manner, to show that senses (V) and (VI) are contextual variants of each other, with tense and time relationships constituting the variable here. That is to say, the differences between (V) and (VI) are determined by the time-structure of the discourse in which sentences having those senses are embedded. As the merest indication of the truth of this proposal, take the following explicitly iterative, predictive and stipulative sentences:

52. (a) The suitor who catches my daughter happens to be a lucky man (Sense (V): iterative).  
 (b) The suitor who catches my daughter will become a lucky man (Sense (VI): predictive).  
 (c) The suitor who catches my daughter needs to be a lucky man (Sense (VI): stipulative).

If we embed these in appropriate and distinctive contexts, we get:

53. (a) Do you know anybody who is especially favoured by Fortune?  
 Yes: (52a).  
 (b) Do you propose to settle any dowry on your daughter's prospective husband? No: (52b). That ought to be enough for him.  
 (c) What sort of man do you visualize your daughter's prospective husband as being? (52c).

If we then embed the triply-ambiguous (22a) in the same contexts, we find it is no longer ambiguous:

22. (a) The suitor who catches my daughter is a lucky man.



be broken simply because an exception to an every-statement can be found: every would then be better viewed as possessing not the absolute "universal" sense, but rather the sense of 'with a very high probability of truth', or 'criterially'. If this is so, the so-called "logical" quantifier could be admitted into the category of hedges (G. Lakoff 1972c) in natural fuzzy logic.

23. (c) The doctor who does his (athletic)training at St. Bartholomews gets a good start (every morning) (Sense (V): iterative).

(d) The doctor who is to train at St. Bartholomews will find he gets a good start (Sense (VI): predictive).

Embedding these into appropriately discriminating contexts, we get:

54. (a) Commenting on the relative merits of the major training-hospitals, the Minister said: (23b).

(b) At this time in the morning, the City is almost deserted. The few people who are about are regular components of the scene. The newspaper-seller sets up his stand; the road-sweeper clears away last night's debris; (23c) ...

(c) What are the advantages for a Barts-trained medical man? (23d) ...

If, however, we substitute (23a) for the respective sentences (23b) - (d) in any of these discourses, we find that (23a) is no longer several-ways ambiguous. We also find that the sentences (23b) - (d) are not freely distributable among the contexts (54a) - (c).

It would seem, therefore, that senses (IV) and (V)/(VI) are indeed contextual variants. Furthermore, I wish to take sense (IV) as basic, since it is unmarked and more or less neutral with regard to tense-structure and time-relationships (it is commonly associated with 'present tense for all time', 'universal present', 'timeless present' etc.).

I propose, therefore, to use sense (IV) as my basic restrictive mode, deriving all other senses from it by means of contextual representations. This is not to say that my examples will necessarily be unambiguous; but I maintain that they will be ambiguous only insofar as their potential contexts remain indistinct, or of course, as occasionally in the present circumstances, absent altogether.

By contrast to the contextual complexity of Rs, the role of the determiner in NRs presents few problems, since an otherwise unmodified NR is never iterative, stipulative or predictive; it can only be generic or

anaphoric. Additionally, it may be non-phoric:

55. (a) The camel, which has one or two humps, may go for days without water. (GENERIC)
- (b) ... The defendant, who wore a pale pink sequined boiler-suit, pleaded Not Guilty to Grievous Bad Taste. (ANAPHORIC)
- (c) Mr. Benn, who bears no malice towards the Prime Minister, was today planning the state take-over of Gannex Raincoats Ltd. (NON-PHORIC)
- (d) The Pope, who is normally the most placid of men, surprised observers today by excommunicating the Papal legate. (NON-PHORIC)

Anaphoric of NRs, however, does not usually imply the class-membership senses which Rs may have by virtue of the specification contained in the relative clause. It is possible, though, that such specification may have occurred in the "previous-mention" in the preceding context. Referring to a previous example ((49) above), an NR such as (55e) is perfectly feasible:

55. (e) I joined a group consisting of Kennedy's psychiatrist, doctor, dentist and physiotherapist. The doctor, who had treated Kennedy for five years, offered me a drink.

This is ANAPHORIC III, and doctor will receive contrastive stress in recognition of this class-membership specification. The two non-phoric uses occur, it will be noticed, when the antecedent NP is either proper or homophoric, neither of which possibilities is open to Rs, (except that there is a certain squishiness between Rs and homophoric NPs, as there is between homophoric NPs and proper Ns:

56. (a) The Man Who Never Was didn't take off the coat he wasn't wearing;
- (b) The Spy Who Came In From The Cold warmed his hands in front of the fire.
- (c) The Man Who Shot Liberty Vallance was really Hopalong Cassidy.

Insofar as the capitalized NPs are unanalyzable units, they are equivalent to homophoric NPs such as the Universe, the Sun, the Queen, the Archbishop of Canterbury, the Mayor of East Berlin, the Secretary of State for Overseas Development, the Man in Black, the Girl with the Golden Eyes. This list too represents what I take to be a continuum from most homophoric ("most unique", if I may use a solecism) to least homophoric (virtual relative clauses).)



As I have already pointed out (section 2.16), definite NRs, with the exceptions represented by (55a), (c) and (d), are always anaphoric, since they cannot be discourse-initial. In fact, since the antecedent NP and relative clause of an NR do not form a single semantic, syntactic or phonological unit (whereas those of Rs do), the antecedent NP is, and behaves like, any other independent NP. This means that the possibilities in NRs for indefinite determiners, too, are no different from those in independent NPs:

57. (a) I have a friend, who collects wombats.  
 (b) <sup>(\*)</sup> I want a friend, who collects wombats.  
 (c) <sup>(\*)</sup> An Eskimo, who collects beermats, is somewhat unusual.  
 (d) I want a friend.  
 (e) <sup>(?)</sup> An Eskimo is somewhat unusual.  
 (f) <sup>?</sup> A tarantula is a poisonous spider, which lives in the Tropics.  
 (g) A tarantula, which lives in the Tropics, is a poisonous spider.  
 (h) A tarantula, which answers to the name of "Tibbles", has been lost in the Macclesfield area.  
 (i) <sup>(\*)</sup> A tarantula, which bites my mother-in-law, will die in agony.  
 (j) <sup>?</sup> A tarantula will die in agony.  
 (k) A man, who comes to clean our drain every Tuesday, gave me a tip for the Derby.  
 (l) A traveller, who came into view over the brow of the hill, bore all the signs of hunger and fatigue.

The starred (b), (c) and (i) are odd for different reasons: (d), (i.e. (b) minus NR) is actually ambiguous between:

58. (a) I want someone who will be a friend to me (STIPULATIVE)  
 and (b) I want x, who is a friend to me (NR)

These are, of course, the non-specific and specific senses we have already discussed (section 3.12). There is also a third possibility:

- (c) I want someone who is one of my friends (ANAPHORIC Sense I')

Of these, (a) probably carries the highest probability. But of these, (b) is most compatible with another NR (such as occurs in (57b)), since an NR tacked on to (58a) or (c) will have the wrong antecedent, and an NR inserted after the right antecedent (someone) in (58a) or (c) will make the existing relative clause there ambiguously R or NR. A further reason for the oddity of (57b) is that the matrix is most characteristically non-specific (i.e. sense (58a)), but that relative clauses are naturally specifying. Sentence (e), if it is possible (it seems to be slightly odd), can hardly be other

than generic. If so, sentence (c) implies that collecting beer mats is characteristic, even diagnostic, of Eskimos. Similarly, sentence (i) seems to suggest that biting my mother-in-law is diagnostic of tarantulas. (f) is probably odd because the antecedent of the NR is the more general term of the two, whereas in (g) the antecedent is the more specific.

Finally, a note on the semantic difference between Rs and NRs with indefinite antecedents: Certainly, this is not nearly so marked as with definite antecedents, but the distinction is nevertheless there. Compare (44e) with (57h):

44. (e) A tarantula which answers to the name of "Tibbles" has been lost in the Macclesfield area;

57. (h) A tarantula, which answers to the name of "Tibbles", has been lost in the Macclesfield area.

(44e) suggests that if you find a tarantula in Macclesfield that does not answer to "Tibbles", ignore it. The speaker of (44e) wants just that individual with that set of attributes and no other. (57h), however, implies that any tarantula you find in Macclesfield will be acceptable, since the suggestion that it answers to its name is given a secondary form: in this case, it is further information only. This implies that in NRs (as, indeed, in other subordinate clauses lacking the semantically restrictive nature of Rs), the reversal of matrix and relative clause will not alter the total information content of the S a great deal:

59. (a) A tarantula, which has been lost in the Macclesfield area, answers to the name of "Tibbles",

but is to be explained as a difference in Focus, in that one of the information-complexes is regarded as "more important" (intentionally or topically) than the other. I have examined this suggestion briefly in section 2.3. However, indefinite NPs can, in context, be anaphoric with a class-membership sense, as we have already seen earlier in this section:

(b) I peered into a showcase in which there were tarantulas, Black Widows, and other tropical spiders. A tarantula, which had been lurking in the shadows, scuttled across the landscape.

In this example, a tarantula means 'one of the (afore-mentioned) tarantulas', a type of interpretation which we have earlier termed ANAPHORIC I'. On the squishiness between Rs and NRs with indefinite antecedents, see also section 3.222.

### 3.14 Van Dijk on determiners and relative clauses

Van Dijk (1972:42-59 etc.) formalizes many (though not all) of the distinctions arrived at in the foregoing sections. For example, he states (p. 45) as "tentative conditions" the following constraint on definitization (which he calls "definitivization"):

60. A noun phrase in a sentence  $S_i$  of a given sequence is assigned [+DEF] if it represents a semantic structure having identical reference, within an identical modal domain, with a semantic structure of a noun phrase in a preceding sentence  $S_{i-j}$  ( $j < i$ ).

This represents, then, in general terms, the ANAPHORIC uses above in (45). Counter-examples to (60) obviously fall under the CATAPHORIC heading. Van Dijk tries to show either that they are discourse-transformational variants of anaphoric uses, or else that they require pragmatic postulates of one kind or another, i.e. that they fall outside the theory of reference within which (60) occurs. Thus he argues that an ITERATIVE use such as:

61. (a) Peter has at last found the secretary he has looked for for years,

is derived from the structure underlying the discourse:

- (b) (i) Peter has looked for a secretary for years.  
(ii) He has at last found the secretary

in which "the constraints normally apply". I find this claim dubious, since (61a) is actually ambiguous between the familiar specific and non-specific senses, of which (b) selects the former. But (61b), it might be argued, also underlies the variant with an indefinite antecedent, which, note, is unambiguous:

- (c) Peter has at last found a secretary he has looked (been looking) for for years (because he owed her some back pay).

This, of course, vitiates Van Dijk's argument (and if (61c) seems doubtful, substitute cousin, schoolfriend, cufflink etc.), which is that relative clauses with indefinite antecedents derive from sentoids which follow the matrix-sentoid in deep structure (and presumably vice-versa for those with definite antecedents). The difference between the specific (61c) and the specific sense of (61a), i.e. with indefinite and definite antecedent respectively, is not that the former may be discourse-initial, but the latter not: both may in fact initiate discourse, although (61a) could also be anaphoric, i.e. non-discourse initial. As far as I am able to judge, any difference between the two examples is of a non-functional, stylistic nature:

at most, (61a) contains a mock-presupposition of prior mention in preceding discourse, similar to the colloquial use of this in:

61. (d) Peter has at last found this secretary he's been looking for. The non-specific sense of (61a), however, which is still cataphoric, is STIPULATIVE rather than ITERATIVE, since it implies in the relative clause that there are conditions for secretaryhood which have "at last" been satisfied in the success of Peter's quest. Being cataphoric, of course, (61a) in this sense, too, may be discourse-initial, and any textual continuation developed thematically from the relative clause might actually stipulate the conditions which it is implied exist:

62. She had to be fluent in shorthand, an impeccable typist, efficient, competent and discreet. Furthermore, she had to own a brewery. The relative clause of (61a), then, (in its non-specific interpretation) and the possible sequel in (62) lead us, in terms of logical theory, into a "possible world", which the matrix clause of (61a) relates to the "real world" of the speaker.

A second set of counter-examples to (60) has to do, according to Van Dijk, with meaning-postulates concerning "membership or inclusion relations" (p. 46), so that the definite article in:

63. (a) When we arrived at John's house, he was just coming out of the front door,

has as its presupposition a meaning-postulate, describing as a (necessary or contingent?) entailment on house:

63. (b) For each x: if x is a house, then x has a (one) front door. This is all very well, were it not for the fact that (63a) is perfectly acceptable and grammatical with the word front erased; but (63b) is not so convincing without the same word, since there is then no postulation of uniqueness to explain the definite article in (63a). In fact, the situation is more complex than Van Dijk allows, since speaker or subject viewpoint is closely bound up with definitization. Consider:

64. As I approached the  $\left\{ \begin{array}{l} \text{front} \\ \text{side} \\ \text{back} \end{array} \right\}$  of the house, John came out of the door.

It seems that, given a house with front, side and back doors, the referent of door in each of the three sentences conflated in (64) is that unique door in the plane surface stipulated in the first clause. Furthermore, the sentences:

65. (a) As I was standing there, John fell out of the window;  
 (b) As I was standing there, John fell out of a window,

tend to imply (assuming that the in (a) is not anaphoric) that in (a) the speaker is standing inside the room (which has but a single window), whereas in (b), the speaker is standing in the street, or at any rate outside the house, (which has several windows). Of course, given a several-windowed room, or a one-windowed house, these implications would tend to reverse. But regardless of these referential foibles, it appears that speaker-orientation, number of doors, windows, etc. need not be specified, since sentences such as (65c) are perfectly feasible:

65. (c) Without the slightest warning, John suddenly jumped out of the window.

This seems to me to be neutral, with regard to speaker-position and details of physical setting. It suggests, in fact, something like 'the nearest window', or 'the window in the immediate area'. If this is indeed the sense, then these uses of the definite article shade into Van Dijk's third class of counter-examples to (60), namely those "generally known as being unique", which according to him require a theory of pragmatics, whose conditions are determined by the general rule:

66. "Speaker of the utterance assumes that hearer of the utterance knows which object is referred to by the terms of the utterance" (p. 47).

This, of course, is identical with the notion of "speaker-hearer assumptions" found in Thompson 1971 and discussed above (section 2.16). The examples which Van Dijk discusses are all what I have hitherto called homophoric uses:

67. (a) the queen of Holland, the moon, the highway from New York to Washington D.C. ...

Notice that of these only the moon lacks further modifiers; the other two could quite easily and with rather trivial changes be restrictive relatives:

- (b) the queen who rules Holland, the highway that runs from New York to Washington D.C.

Van Dijk's description of this class, and his general rule (66), cannot in fact capture the quiddity of these noun phrases, which also include (cf. section 2.16):

- (c) (i) Put your coat in the cupboard;  
 (ii) Don't tread on the cat;  
 (iii) Have you fed the budgie?  
 (iv) The milkman's been;  
 (v) They're digging up the road;  
 (vi) Right past the church, left at the traffic-lights, straight on past the pub, and through the snicket;  
 (vii) The country is going to the dogs - it's the Government's fault.

The description "generally known as being unique" is, as the examples in (c) testify, inadequate even as an informal characterization, since in each case the referent of the definite NP (with the exception of the dogs in (vii), which is idiomatic and non-referring) will change with each change of setting and participants, i.e. "severally unique" might be more apt. In general and informal terms, all the examples of (67), together with those of (63) - (65), illustrate the following definition:

68. In homophoric uses of definite NPs, the noun is taken as unique within an environment whose scope is determined by the conceptual context of the utterance.

"Conceptual context" is more or less the same as "universe of discourse" (though I regard the former as a more suggestive term). I have not attempted to formulate the idea more explicitly, though I believe it to be part of the specification of situation (see sections 2.11, 2.13). This determines the relevant scope in (67):

69. (a) the moon which the Earth has, (or: which we have).  
 (c) (i) the cupboard which is in this room;  
 (ii) the cat which we have;  
 (iii) the budgie which we have;  
 (iv) the milkman who delivers to our house;  
 (v) the road which is contiguous to this place;  
 (vi) the church etc. which you will find at the various stages of your journey;  
 (vii) the country which we are in/talking about,  
 the government which the country has.

Thus homophoric definites appear to be closely related to iterative restrictives.

Van Dijk's final class of counter-examples to (60) is the generic, which refers to a unique class rather than unique individuals. Since genera can be broad or narrow in scope, generics can be highly general Ns or more specific relative clauses. The latter, as we have seen, pick out a unique subset of a self-defining set (which must, therefore, be cataphoric). As I demonstrated in section 3.12, the generic is the basic R mode, all the others being derived from it by contextual constraints.

On pp. 58-9, Van Dijk sets out six categories of relative, three of them R, and three NR, which he relates to his discussion on the logical specification of determiners. I quote them here in full:

70. "(i) a non-restrictive relative clause following a definite noun phrase provides a further specification of a particular individual, which has been identified (by èta-operator) in a previous sentence of the text; such complex sentences are therefore ungrammatical in initial position;
- (ii) a non-restrictive relative clause following an indefinite noun phrase provides further specification of a particular, non-specified, individual, which is introduced as a possible discourse referent in the main sentence, where it is represented with the aid of an èta-operator;
- (iii) a restrictive relative clause following a definite noun phrase identifies, by definite description, a particular individual in a class, such that this individual is the only member satisfying the description; to represent this description we need an iota-operator, which requires that there must have been 'indefinite' identification (by èta-operator) in a previous sentence of the text;
- (iv) a restrictive relative clause following an indefinite noun phrase identifies a class of individuals (possibly one) which may, non-jointly, satisfy the indefinite description; this indefinite description will be introduced with a lambda-operator.
- (v) a restrictive relative clause following a definite noun phrase may identify a particular class (of possibly one member) within another class, as in type (iv); this type may be represented also by a lambda-operator;
- (vi) a non-restrictive relative clause following an indefinite noun phrase may, in addition to type (ii), also specify a class (of possibly one member) introduced in the matrix sentence by an epsilon-operator; the difference with types (ii) and (v) will often be blurred in discourse."

I have already given grounds for supposing that (a) the distinction between definite- and indefinite-determined antecedents is either non-existent or contextually specified; but that (b) the difference between R and NR, particularly in indefinite contexts, is often subtle but undeniable. Van Dijk's categories are partially equivalent to the interpretative types I have isolated above:

- (70i) = anaphoric NR (which has at least two sub-senses, as I have shown);
- (70ii) = first-mention NR (though as we have seen in section 3.13, such NRs can also be anaphoric (I'));
- (70iii) = anaphoric R (type II);
- (70iv) = anaphoric R (type I');

(70v) is most like my iterative (type V). Van Dijk's example (p.52) is The man who wrote this book is a fascist, which is iterative under the interpretation in which the identity and political views of the author are known. The other interpretation, however, which is the one that (70v) is attempting to capture, is equivalent to Whoever wrote this book must be a fascist, in which the author's identity is unknown, and his political views are inferred from his writing. I argue in section 3.24 that this is some sort of clefted construction, equivalent to A fascist wrote this book.

(70vi) - Van Dijk provides no examples for this type (his discussion of the epsilon-operator (pp. 53 sq.), which stipulates 'just one x having the properties y and z', appears to use Rs and not NRs as here). Nor can I think of convincing examples with NRs having indefinite antecedents, although perhaps the following represents the intended form: A man, who wrote this book, called on me yesterday, in which the NR selects just one individual from the set (or intersection of sets) 'all men' and 'people who called on me yesterday'. This seems to me to be a virtual R, i.e. closer on the squishiness scale to R than NR. Cf. the discussion of an, I believe, similar example in Ch. V (section 5.3 below).

Thus, Van Dijk's six types take no account of the senses I have referred to as III (ANAPHORIC: unique subset), IV (GENERIC), and VI (PREDICTIVE and STIPULATIVE) for Rs, and I' (ANAPHORIC: non-unique subset) and III (ANAPHORIC: unique subset) for NRs. I have argued that all of these (except generic) are contextually-determined, and in Ch. V (section 5.2), I shall work some examples to demonstrate this claim.

### 3.2 The derivational source of relative clauses

#### 3.21 Introductory summary

The question of whether the source of either or both types of relative clause is conjunction, is one that prominently figures in several of the papers discussed below. The unsatisfactory nature of their conclusions, however, is perhaps to be blamed on two factors: (i) that the question is often not framed specifically enough and (ii) that the theoretical



presuppositions which a particular linguist brings to the description of language in general may blind him to the counter-intuitive nature of the solution in this particular case.

To take the second point first, the "Standard Theory" model must distinguish between NRs and Rs in deep structure, since they are semantically distinct. However, as I shall show in Ch. VI, the ST semantic component is quite incapable of specifying the meaning of relative clauses of either type. On the other hand, since ST is syntactically-based, its adherents will naturally assume that the distinction between Rs and NRs is founded on a syntactic distinction, e.g. between embedding (Rs) and conjunction (NRs), or, especially among older TG treatments, between syntactic markers (e.g. Smith's "R" and "A", 1964:39 sqq.) assigned to NPs of both matrix and constituent sentences in the Base. It is, presumably, assumed by such writers, intent on describing what they regard as syntactic facts, that the semantic representation of their proposed analysis will be taken care of by the mechanisms for lexical insertion, derived readings and projection. As I will show in Ch. VI, however, this is a false hope.

Sandra Annear Thompson's proposed solution, which is discussed in some detail in section 3.22, is clearly not written on ST preconceptions, since she provides no rules of any kind and she assumes that semantic differences can be accounted for by "presuppositions", which do not form part of the ST canon. In fact, her approach, insofar as it can be determined, is ambiguous between two current theories, in the sense that her "evidence" - if accepted - could be used by either GS-ists or EST-icians. This is not to say, however, that I agree with Chomsky's claim that one is a "notional variant" of the other. The indeterminacy of Thompson's model is, in fact, directly to be attributed to the indeterminate status of the constituents that Thompson proposes for what she calls "deep structure" (though one supposes that she does not mean by that term what Katz would mean, for example). In particular, it is quite uncertain whether she means her structures to represent lexicalised post-categorial strings, or whether she intends them directly to represent semantic configurations. If the former, then her findings could be translated directly into EST terms, with her "presuppositions" specified by surface-structure interpretation rules, and the basic conjunctive syntax being interpreted by rules of semantic accumulation (viz. projection rules in the ST sense) at the level of deep structure. If the latter, however, (which I suspect to be the case), then the meanings will be directly conjoined, the presuppositions stated by means of some such device as meaning-

postulates, and the surface form, with its clearly embedded structure, both in R and NR, derived by later transformation rules. However, as I will try to show, Thompson's proposals do not in fact work, though I am in sympathy with some of her apparent assumptions.

Of the accounts I discuss at length, Kuroda's seems to me to come nearest to what I would regard as a tenable solution, although he is hampered by his linguistic preconceptions to a great extent. His ideas on this point seem, too, not always to be very clearly or precisely formulated. What I take him to be moving towards, however, is a theory in which semantic connections affect syntactic ones, in which, that is to say, a construction can semantically be conjoined, yet syntactically can be embedded, (cf. section 3.11), with the semantic information being, in some sense, prior to the syntactic. Kuroda makes such observations as:

"In the three types of relativizations so far treated the matrix and constituent sentences are independent of each other as logical propositions, and it is a merely syntactic motive that combined them into one sentence; from the purely logical point of view one could in those cases dispense with the syntactic device of generating complex sentences and could always use appropriate sequences of simple sentences in their place."

(283 - italics mine)

The type of linguistic theory required by such a notion is one in which syntactic operations are subsidiary to semantic. ST is clearly not a theory of this kind, and neither is EST, though not so clearly.

What then are the desiderata for an explanatory analysis of relativization? If we accept the usual ST derivation for restrictive relatives, they result from a transformation which attaches one string to a S node in an NP of another string, under certain conditions of identity, etc. The semantic consequences of restrictive relativization are described by Katz himself (see Ch. VI below):

"the semantic properties of the new constituent are those of the head, except that the meaning of the new constituent is more determinate than that of the head by itself due to the information contributed by the meaning of the modifier",

(1966:166)

If, however, we accept the postulate that transformational rules have no consequences semantically (the "meaning-preserving hypothesis", first suggested, tentatively, by Katz and Postal; cf. also Partee 1969), clearly the syntactic derivation is brought into conflict with the semantic interpretation: if the latter can take place only with deep structure, then the

only trace of the relative clause available at that stage will presumably be the embedding point S. But (as I try to show in Ch. VI), the restrictivity of Rs cannot be derived from the supposed syntactic relationship between that S and its containing NP, since the assumed executive apparatus for dealing with both semantic interpretation and grammatical relations, viz. selectional restrictions, cannot be made to apply to "modification". This seems to indicate that the Aspects model of semantic interpretation - that it takes place on Base structures and is determined by the grammatical relations which obtain there - is incorrect and must be modified. This can happen in one of two directions (assuming that the general form of the model is to be retained): either the hypothesis of meaning-preservation may be abandoned, or else the hypothesis of syntactic priority. The former is the EST solution, the latter the GS one. It might be possible in EST to specify the semantic effect of restrictivity, with interpretation taking place after the relativization operations. However, as I shall try to show in section 6.12 below, Jackendoff (who has evidently investigated EST most widely) provides no interpretation rule which will account for the restrictive nature of R relatives, although he can handle the non-problem of interpreting relative pronouns. As I have already stated, it seems unlikely that EST is in fact capable of handling a semantic distinction by any other means than categorial or functional structure at a deep level or interpretive rules at subsequent levels. Rs and NRs differ from each other, as I will attempt to show below, in that Rs are semantically integral in NPs (to the extent that they may be lexicalized into Ns), whereas NRs remain semantically distinct from their antecedent NPs, though as clauses they may be linked to their matrix clause by one of a number of so-called "pragmatic implications" (cf. sections 2.17, 5.3), which turn out, in fact, to be contextually-determined. EST-icians have not, so far, provided a way of accounting for a distinction which appears to be neither categorial, functional nor interpretive. It is not categorial, because it has nothing to do with the shape of the deep-structure tree; it is not functional (in Jackendoff's sense) since it concerns neither case-relations nor their thematic hierarchy; and it is not interpretive, since it does not involve either coreference (except as a general condition on the process), modality, or crucially, focus and presupposition. (These, together with functional structure, are the four independent components of semantic interpretation so far specified by Jackendoff, 1972:385). Restrictive relativization, at least, seems to me to be a problem for (E)ST of specifying which

embedded Ss in NPs are relatives and which are not, since the same categorial configuration could equally well underlie such nominal complements as the fact that... Furthermore, if interpretation is allowed, or even encouraged, to take place on derived structure - "shallow" or even surface - then the difficulties of reaching an unequivocal structural specification are multiplied: there are many more derived "S-in-NP" structures than basic ones. The solution to go for seems to me to be one in which restrictivity can be specified or captured as a semantic, rather than a syntactic, process.

This seems to argue in favour of at least investigating a generative semantic position, in which the semantic content of the construction is specified by a configuration of semantic elements, which are subsequently rearranged by a series of realisation, derivational or transformational rules (I take the terms to be equivalent) and which is also capable of incorporating contextual information. Paul Schachter, in the article discussed below, speculates that restrictive relatives are unlexicalised nominals. All nouns, he suggests, can be paraphrased by a R, though the reverse does not hold. This may not in fact apply to all Rs, (and I shall be investigating this in the next chapter), and of course it excludes all NRs also, but if it can be shown to hold true, then it will also provide further evidence for a theory which considers semantically-specified structures to underlie lexical items as well as syntactic structures.

The first point to consider, therefore, is how far various constructions are in actual fact related to one another. In particular, I am interested in investigating the degree of similarity shown by:

R and NR;

R and cleft;

R and pseudo-R.

We will then be in a better position to decide whether these four constructions are to be underlyingly represented in four different ways, or three, or two, or one, and if there are any other factors which serve to distinguish them.

### 3.22 R and NR

#### 3.221 Introduction

As we have seen (section 1.1), the earliest transformational treatments assumed that R and NR were syntactically identical, with the semantic distinction (and presumably the prosodic distinction) being accounted for by subsequent interpretation of distinct dummy elements. Then around 1966, several

linguists independently suggested that R and NR have distinct sources, Rs being embedded in a base NP, NRs conjoined (whether this was to be done in the base or transformationally). This is probably now the standard treatment, it is fair to say. Cf. Stockwell et al. 1973:421 sqq. for a review of the various derivations for R suggested in the literature: they distinguish four types of syntactic source for Rs:

- (i) ART-S (in which the relative is attached to the Determiner node; and the N is independent);
- (ii) NP-S (in which the relative is on the same level as both the Determiner and the N);
- (iii) NOM-S (in which the relative is attached to the N node, and the Determiner is independent);
- (iv) Conjunction (in which the constituent Ss are of equal status, any subsequent differences of restrictiveness being handled by "speaker-hearer assumptions").

Of these, they discuss only (i) - (iii), and they do no more than mention NRs (thus they discuss (iv) neither for Rs nor NRs). Since, however, (iv) is assumed by certain linguists who are concerned with the semantic rather than syntactic distinction between R and NR, I shall devote some space to discussing a representative expression of it, namely Thompson 1971. First, however, I want to examine the nature and scope of the distinction between R and NR.

### 3.222 The distinction between R and NR

This widely-assumed and traditional distinction is almost invariably illustrated with definite-NP antecedents, in which of course the semantic differentiation is clear:

- 71. (a) The bus-ticket which I found in my pocket turned out to be a rare first-edition;
- (b) The bus-ticket, which I found in my pocket, turned out to be a rare first-edttion.
- 72. (a) i. John's friend who works at Harrods is outside;
- ii. \*John's mother who works at Harrods is outside;
- (b) i. John's friend, who works at Harrods, is outside;
- ii. John's mother, who works at Harrods, is outside.

The (a) sentences, which are Rs, have the following characteristics:

- they may be either anaphoric or cataphoric;
- they limit the set of objects denoted by the antecedent NP to

that subset (which may be a single member) defined by the relative clause. In anaphoric uses (cf. section 3.13), the set is defined in preceding discourse;

- they have a single unborken intonation contour over the whole NP constituent.

The importance of both set and subset being stipulated is shown by the ungrammaticality of (72a<sub>ii</sub>), since the set John's mother, being a single-member set, does not in natural language (though it may in set-theory) admit of a subset. Single-member (i.e. uniquely-referring) sets do pose special problems for explanation of relative clauses. It is a well-known fact that proper Ns cannot be antecedent to Rs (cf. e.g. Stockwell et al. 1973:422). However, as Stockwell et al. point out (448 sq.), this is simply a particular case of the more general constraint that NPs having unique reference (as is normally the case with proper Ns), cannot be further delimited with Rs; this is illustrated here by (72a<sub>ii</sub>). I have suggested in section 2.16 that since proper Ns in normal use share with Rs the property of being cataphoric, i.e. potentially discourse-initiating, they ought perhaps to be properly regarded as Rs of a sort themselves, viz. 'the one who combines (some criterial subset of) the following attributes ...'. (I also suggest there that common Ns have a similar structure: 'the thing etc. which has (some criterial subset of) the following properties ...'; cf. Bach 1968, and Ch. IV below). I claim, therefore, that the use of a proper N presupposes a set of attributes, knowledge of which is extra-linguistic (situational), though clearly functioning in an identical way to that presupposed by the use of a common N (which is by definition linguistic, i.e. a matter of competence). This, by the way, is evidence for the semiotic equivalence of situation and language in human conceptual behaviour, (cf. section 2.11). These attributes are used restrictively to define some individual uniquely. Other uniquely-referring NPs, however, contain this restrictiveness explicitly, in the form of full or, more often, reduced Rs, e.g. (72) above, equivalent to:

72. (a')  $\left\{ \begin{array}{l} \text{Friend} \\ \text{Mother} \end{array} \right\}$  which John has...

or: 73. (a)  $\left\{ \begin{array}{l} \text{My} \\ \text{Your} \\ \text{His} \end{array} \right\}$  mother...

equivalent to:

73. (a') Mother which  $\left\{ \begin{array}{l} \text{I} \\ \text{you} \\ \text{he} \end{array} \right\} \left\{ \begin{array}{l} \text{have} \\ \text{has} \end{array} \right\} \dots,$

or even perhaps:

73. (a'') The one who "mothered"  $\left. \begin{array}{l} \text{me} \\ \text{you} \\ \text{him} \end{array} \right\} \dots$

or 74. (a) The Queen...

equivalent to:

74. (a') The Queen of Britain and <sup>the</sup> Commonwealth...

which is perhaps a reduced form of something like:

74. (a'') The Queen who rules over Britain and the Commonwealth...  
(cf. sections 3.13-14 above).

If such a derivation of uniquely-referring NPs is correct, then Rs such as (72ai) are in fact "stacked" Rs (cf. Stockwell et al. op. cit.: 442 sqq.), which for many speakers are ungrammatical (and indeed, some speakers find (72ai) to be ungrammatical). If stacked Rs are found to be in general ungrammatical, (with a certain amount of allowance being made for some types of stacking, and for some speakers), then this would explain the ungrammaticality of uniquely-referring antecedents with Rs. (An apparent counterexample to this, e.g:

75. The John Smith who signed the hotel register was wearing a raincoat and socks,

is explained as not a genuine uniquely-referring NP at all, since the antecedent refers to a set of at least two members having the attribute of 'bearing the name John Smith'. For practical purposes, John Smith in (75) is a common N.) If we regard all Ns as having underlying Rs, then the distinction between common Ns and proper (and uniquely-referring) Ns is not that the former can, but the latter cannot, co-occur with surface Rs, but rather whether or not the subset defined by the surface R specifies down to a single member: for common Ns, the underlying R, (or set of conjoined Rs), specifies the set-attributes (and as far as I can tell, there are no necessarily-unique common Ns); for uniquely-referring NPs, the underlying R (or set of conjoined Rs) specifies the attributes of a single-member set. As soon as any N plus its Rs, underlying or surface, specifies down to a single-member set, then at that point, I conjecture, stacking of further Rs becomes ungrammatical: further R specification must be explicitly conjoined. On the representation of unique reference, Stockwell et al. are buck-passing (p. 449): they "leave it to some sort of interpretive/semantic component" to guarantee that the question will be sorted out. But in order to do that, a semantic component must be capable of handling contextual, including situational, information of several kinds. Compare the following:

76. (a) The mother came to see me;  
 (b) The mother who gave birth to octuplets last year came to see me;  
 (c) The mother whose children are at school came to see me.

(76a) cannot be discourse-initial: it must be preceded by some situational or linguistic specification. Similarly, (76c) requires some previous set stipulation, in fact right down to the information that all but one of the mothers in question have children of pre-school age, or at least children not at school. (76b) seems acceptable as a cataphoric use: giving birth to octuplets in a given year would seem to make any woman unique; but it is easily shown that knowledge of this sort of fact is not linguistic, but cultural (including biological): as can be seen from reducing the number of births implied. The lower the number of babies, the less likely is the sentence as a discourse-initiator. Thus:

76. (b') The mother who gave birth last year came to see me, has similar requirements to (76c) above. This suggests that the "unique" rating we place on (76b) depends on our knowledge that giving birth to octuplets is so rare that two such events are unlikely in a single year. Similarly, the fact that John's mother has unique reference (given that John has) whereas John's friend has not (although it could be argued that this construction always suggests uniqueness), might indicate that mother has an extra restriction in meaning, perhaps defined by meaning-postulate (e.g. 'if x is human, then x has just one mother').

However one accounts for uniquely-referring antecedents, a fact of some interest to the present section is that they represent a point of interchange between R and NR: just as a uniquely-referring NP of the type we have been examining can take an NR, so can a uniquely-referring NP containing an R:

77. The face which launched a thousand ships,  
 { who was called Helen of Troy  
 which made them very happy on Clydeside  
 { which } was one of the beauties of the ancient world  
 { who } } ,  
 was played by Elizabeth Taylor.

Returning to sentences (71) and (72), the (b) sentences are NRs, and have the following characteristics:

- they must be anaphoric or homophoric (i.e. uniquely-referring);
- they function to further specify the antecedent-NP, though without affecting its fundamental meaning, quantification, etc.



- they contain a clear broken intonation, separating the relative clause from its matrix S. This parenthetical appearance has led some commentators to posit a conjunctive, rather than subordinative, source.

But if we investigate sentences with indefinite antecedents, the R-NR distinction is much less clear-cut:

78. (a) A bus-ticket which I found in my pocket turned out to be a rare first-edition;
- (b) A bus-ticket, which I found in my pocket, turned out to be a rare first-edition;
- (c) i. A friend who works at Harrods is outside;  
ii. A mother who works at Harrods is outside;
- (d) i. A friend, who works at Harrods, is outside;  
ii. A mother, who works at Harrods, is outside.

In terms of their discourse-potential, (78a) and (78b) are very similar.

Both can be cataphoric:

78. (a') There was a bus-ticket such that I found it in my pocket...
- (b') There was a bus-ticket, and I found it in my pocket...

Both can be anaphoric:

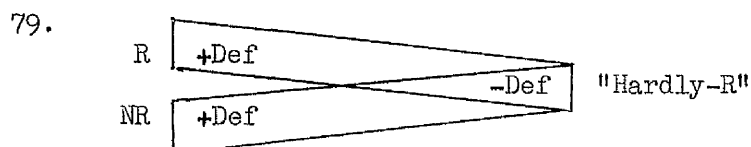
- (a'') One of the bus-tickets which I found in my pocket...

(i.e. anaphoric sense I'), and:

- (b'') Talking of objets trouvés, a bus-ticket (which incidentally I found in my pocket), for example...

(though in the case of (b''), this is a "type-token" kind of anaphora, rather than one bound by identity, or co-reference). Much the same can be said for (c) and (d). Thus the difference between R and NR in (a') and (b') is the regular distinction, to be sure, but it seems to carry no communicative weight: (a') defines down to some particular bus-ticket; (b') takes the bus-ticket as being a particular one anyway, and adds the same information nevertheless. In (a'') and (b''), the bus-ticket is a subset of a previously-defined set; the difference is that in (a'') the location of the ticket is part of this definition, whereas in (b'') it is additional information.

It seems, then that as between R and NR there exists an area of indeterminacy:



Within this area, it is often difficult to decide whether a given use is R

or NR, and indeed there seems to be no compelling reason why it should be differentiated in this manner.

### 3.223 Do Rs and NRs both derive from conjunction?

Since this is the only major suggestion for relative clause derivation not dealt with by Stockwell et al., I should like to examine here a representative statement of this position, namely that of Thompson 1971, (for discussion of her notion of "speaker-hearer assumptions" in this paper, see section 2.16 above).

At the start of her paper, Thompson mentions three "indications that a conjunction source for relative clause sentences is correct". These are:

- a. Nobody has ever defended an embedding explanation against a conjunctive one.
- b. There is practically no agreement about the details of an embedding thesis.
- c. A distinction must be drawn between relative clauses and clear cases of embedding, where the embedded sentence is required as an obligatory argument of the verb.

(a) is in itself an indication of nothing: there have been few defences of the thesis that water is wet either. (a) tells us nothing about the relative merits of the case: the truth could be equally that the embedding thesis is self-evident, or that nobody has ever spotted the real source of restrictive relatives before. (b), too, (another negative statement), is of little value, since there is not much in the present posture of events which could be called "consensus linguistics". How much agreement is there, for example, on the treatment and description of the Auxiliary verb? (c) contains a little substance, but implies that adjuncts are never embedded, but always conjoined (since they too are usually "structurally superfluous"). This is an important enough point to need more than simple assertion or less, implication, to establish it as correct. It would presumably have to apply to all sorts of adverbial clauses and phrases as well as relatives. But, in fact, the situation is worse, since Thompson's (1), (for which she claims an embedding analysis to be well-motivated):

80. (a) That Frieda likes to cook is obvious to me,  
is synonymous with a type II NR:

(b) Frieda likes to cook, which is obvious to me,  
and a conjunction:

(c) Frieda likes to cook, and this is obvious to me,

(where this of course is a pro-S form: cf. Thompson: 88 sq.). All sentences of the form of (80a) are paraphrasable as type II NRs, and hence as conjunctions also, but the reverse does not hold, since only certain predicates are capable of forming the structure underlying (80a), and then sometimes only under certain conditions, e.g. passivization.

Those were informal and prefatory remarks. But has Thompson succeeded in proving her thesis about the source of Rs in the main body of the paper? Her proposal suffers, I think, from two main objections:

1) Syntactic. The status of her "deep structures" is, I think, difficult to judge, because the reader has no idea what theory of grammar they occur in. Thus it is not easy to see what sort of rules will lead to their surface-structure forms (e.g. p. 94 fn. 5 where she allegedly solves the paradox put forward by Perlmutter and Ross 1970:

81. (a) A man entered the room and a woman went out who were quite similar.

They point out that an embedding analysis would not be able easily to explain the discontinuous antecedent for the relative clause. Thompson claims that there is no paradox in a conjunctive analysis:

(b) (Man entered room) (woman went out of room) (man and woman were similar).

However, this analysis has still got to explain how ENP deletion and relative pronominalisation can take place with a discontinuous antecedent).

The "new paradox" which Perlmutter and Ross claim is actually similar to an example in Lakoff 1968a:53-59:

82. (a) John and Mary, who are alike, know the answer, since alike (like similar) is a "symmetric predicate" (cf. Lakoff and Peters 1969) requiring a plural or conjoined subject, or a subject-complement combination whereas know, (like the separate predicates enter and go out), implies of each of the conjoined nouns, separate achievements. Lakoff's example is necessarily a NR, Perlmutter and Ross's is presumably a NR or a "hardly-R" (since no contrast is implied) - cf. my remarks in the previous section. In fact, this paradox can occur with a R, as Lakoff shows (p. 55):

(b) The boy and the girl who are alike know the answer and for this, Lakoff suggests a deep structure which can be paraphrased roughly as:

(c) The boy (of) the boy and the girl (who) are alike knows the answer and the girl (of) the boy and the girl (who) are alike knows the answer.

By conjunction reduction, this becomes successively:

(d) The boy (of) the boy and the girl (who) are alike and the girl (who) are alike know the answer, and:

(e) The boy and the girl (of) the boy and the girl (who) are alike know the answer,

and then by relativization:

(f) The boy and the girl who are alike know the answer.

(Lakoff actually gives trees: the paraphrases - and particularly the of's - are mine. PNW).

A similar sequence of operations accounts for the NR sentence John and Mary, who are alike, know the answer, except that the symmetric predicate occurs only once. It is possible, of course, that the underlying structure which Thompson refers to is supposed to be of the type recently advocated by, among others, Lakoff, namely one using the higher predicate calculus, in which the main form of propositional combination is a type of conjunction. However, there is no discussion of this, and not enough evidence to infer anything along these lines.

2) Semantic. The semantic difference between Rs and NRs is explained solely in terms of "presuppositions", but this important notion is left quite unspecified. We are given no idea how presuppositions are meant to fit into any theory of language, nor, in particular, how they are meant to account for one important property of Rs, their contrastivity. Both Thompson and Postal (ci. section 2.16) assume that "speaker's assumptions about hearer's knowledge" can somehow be "indicated" without being specified, and so they probably can, but at the expense of missing important generalisations about the role of repeated items in both a discourse and its component sentences.

The controversial aspect of Thompson's paper is the suggestion that Rs (as well as NRs) derive from a conjunction source. We have already discussed her proposals in some detail (section 2.16 above), but before examining Thompson's account of NRs, I should like to discuss one further point she makes about Rs, as further evidence that they derive from a conjunction source. She quotes from Postal 1967 (which I have not seen, but which apparently is arguing a similar case) the example:

83. (a) Charley assumed that the book which was burned was not burned. This sentence is ambiguous between the readings: (A) Charley assumed that a certain book had not been burned when in fact it had; and (B) Charley assumed a contradiction. Underlying (A), she claims, is the representation:

83. (b) (Charley assumed (book not burned)) (book burned)  
while underlying (B) is:

83. (c) Charley assumed ((book burned) (book not burned))  
What Thompson does not notice is that in (A) and (83b) the statement underlying which was burned, which in (83b) is represented by (book burned), is not on the same level as (Charley assumed...), but on a higher level: it is in fact an assertion made by the speaker, a higher-level predicate of a performative I say:

83. (d) Charley assumed that the book which I say was burned was not burned'.

This is, in fact, equivalent to (83b) but with the performative verb inexplicit. (Incidentally, Thorne (1972b) uses performative evidence to distinguish between Rs and NRs. By his tests, (83d) is NR). I say is almost certainly the wrong performative verb here, since the assertion (book burned) in (83b) does not admit of contradiction: it is a factive (cf. Kiparsky and Kiparsky 1970). The predicate say, however, is non-factive in its complementation: I say the book was burned can also imply and somebody else says it wasn't without imputing who is right. What is required, therefore, but only of course in the superficial representation of the underlying semantic structure of the relative, is a lexicalization of 'I say FACT'. This perhaps does not actually exist in English, and indeed there is no prior necessity that it should (but perhaps I report is suitable). To prove that this is more than an accidental gap (which would severely weaken the performative analysis), it would have to be shown that saying was never commensurate with the presupposition of truth: this would then disprove even the notion of an abstract performative. However, the distinction does appear capable of more explicit expression in other languages (e.g. Latin), for example by using the indicative for factive statements and the subjunctive for unsubstantiated reports. In (83c), correctly, '(book burned)' is part of Charley's assumption. However, Thompson asserts that the converse contradiction:

83. (e) Charley assumed that the book which was not burned was burned is an "exact paraphrase" of reading (B) of (83a). This surely cannot be so: in (83a):B Charley assumes that something was not burned; in (83e), he assumes that something was burned; and in both cases, the embedded "something" contradicts its matrix. The sentences perhaps amount to the same in the end, but they attain that result via different routes.

Thompson's treatment of NR's, on the other hand, is broadly along lines already suggested by Ross. Like Ross and others, she regards NRs as deriving from a conjunctive source and distinguishes two types, NRI and NRII. NRI, like R, have a nominal antecedent:

84. Jerry, who used to play football, now has a sedentary job.

NRII have a predicate or sentential antecedent:

85. She took the children to the zoo, which was very helpful.

I do not propose to describe Thompson's account of NRs in detail, since I shall be suggesting an alternative below which modifies her (and Ross's) analysis of NR derivation by introducing contextual information. However, there are one or two small points which I would like to comment on now. One concerns an apparent counterexample to the conjunction analysis of NRs, noted by both Ross and Thompson, wherein a (declarative) NR is interpolated into an interrogative matrix. The example given is:

86. (a) Is even Clarence, who is wearing mauve socks, a swinger?

The sentence consisting of two conjuncts which might be thought to underlie (86a) is in point of fact ungrammatical:

(b) <sup>\*</sup>Is even Clarence a swinger and he is wearing mauve socks.

Ross suggests that underlying such conjuncts are sentence sequences, while Thompson proposes that in certain contexts (e.g. between question and declarative, or imperative and declarative) the connector (and etc.) is deleted. Other possibilities suggesting a different solution, however, may be noted. First, there does exist an interrogative-declarative conjunction, of a different sort:

(c) Is even Clarence a swinger, and (him) wearing mauve socks, too?

where the force of the and ... too combination seems to be adversative, rather like 'despite the fact that', 'yet', 'nevertheless', 'even though', in their various structural positions. I also note that this adversative sense extends to the NR in (86a), a fact which I shall comment on later (section 5.3). A second point is that

(d) Is even Clarence a swinger?

is ambiguous between a genuine yes/no question (YNQ) and a rhetorical exclamation of the 'Do my old eyes deceive me?' type, although the occurrence of even (which connotes surprise: see Fraser 1971) makes the second interpretation more natural in my idiolect. Possible diagnostic tests for the exclamation sense are the absence of any verbal item:

(d') Even Clarence a swinger?!

and the optional prefatory presence of what:

(d'') (What), even Clarence a swinger?!

The exclamation, unlike the YNQ, does not require a response, though yes or no and expressions of affirmative or negative import may be used appropriately, as, of course, they must be with YNQs. "Exclamations" as a class of utterance are perhaps not as well-defined as they might be. Formally, they have much in common with questions: they frequently take an interrogative or pseudo-interrogative form (i.e. with subject-auxiliary inversion, including a common variety for which auxiliary-deletion can be assumed, which is what I have referred to as "pseudo-interrogatives"), they use most of the same range of wh-forms, and have identical possibilities of intonation. However, there are also types of exclamation which have none or almost none of these similarities (e.g. the "interjections" such as Cripes!, Merde!, Blimey!, and so on, and forms such as What a surprise (this is)!, which in some ways seem to have more in common with topicalized and pseudo-cleft sentences). Moreover, as Erik Fudge [personal communication] points out, exclamations do not undergo S-V inversion, and wh-questions in any case cannot appropriately receive the responses "yes" or "no", which are in fact appropriate to YNQ rather than wh-Q, and these are somewhat remote from exclamations. However, I would argue that the "yes" and "no" following exclamations are not very similar to the "yes" or "no" responses to YNQs. The latter signal specific information (and could be regarded as presentential: "yes" = 'S? is correct'); the former signal mere phatic agreement ("yes" = 'I agree that S!'). I would speculate that YNQ, wh-Q and exclamations occur on a continuum, which at the question end require the co-operative interaction of questioner and questioned (cf. sections 2.13 and 2.14 above). It seems a reasonable hypothesis that at least some exclamations and questions occur at extremes of the same semantic scale, perhaps with so-called "rhetorical questions" occupying the middle range. Thus:

87. (a) Isn't Hortense stupid?

requires a response, i.e. "yes" (i.e. requires the listener's co-operation), while:

(b) How stupid Hortense is!

could easily be uttered to oneself, and if the listener does say "yes", this is unsolicited support, linguistically. (The speaker may hope for support, but if he really wants to appeal for it, he will surely use the overt YNQ form). Exclamations, therefore, do not presuppose the co-operation, or even the presence, of an interlocutor: therefore, no tacit agreement is

entered into or broken. However, we may surmise that the frequent formal similarity between exclamations and questions can lead to the listener confusing them, which may help to explain why Yes, No, etc. are not completely inappropriate as responses to exclamations, though they may well be superfluous. I also note here that there is a possible exclamation which is formally identical with YNQ, though prosodically distinct:

87. (c) Isn't Hortense stupid!

Given these distinctions, then, note that both (86c) and (86a) (the sentence in question) appear to be exclamatory rather than interrogative:

86. (c') What, even Clarence a swinger, and him wearing mauve socks, too!

86. (a') What, even Clarence, who is wearing mauve socks, a swinger! although (86a), particularly without even, which has no real bearing on the matter under discussion anyway, seems to me capable of the interrogative interpretation. This brings me to my third point, which is that there is no problem here if we assume that the NR relativization transformation, (which matches up like-NPs in the first and second conjuncts, moves the second to a point immediately following the matched NP in the first conjunct, and then deletes and and pronominalizes the second NP into a relative pronoun), precedes the YNQ formation-transformation. If this is so, (and assuming that there is such a thing as extrinsic ordering), then the underlying

86. (e) Even Clarence is a swinger, and Clarence is wearing mauve socks

undergoes NR relativization first (given that Clarence and Clarence are co-referential) to:

86. (f) Even Clarence, who is wearing mauve socks, is a swinger and then YNQ formation to (86a). Sentence (86a) is thus in fact a piece of evidence that the reverse order does not hold. What other evidence, however, will help us to solve the question of the relative order of these two transformations? If YNQ formation precedes NR relativization, we should expect the latter to be freely applicable to the results of the former. However, this is not the case:

88. (a) Passengers should pass through Customs, and passengers must declare all purchases.

(b) Should passengers pass through Customs, and must passengers declare all purchases? ((88a) + YNQ formation)

(c) <sup>NE</sup>Should passengers, must who declare all purchases, pass through Customs? ((88b) + NR relativization)



There is evidence to show that YNQ formation is an "across-the-board" rule, i.e. it must apply to all member Ss of a conjunction:

- (d) <sup>✕</sup>Should passengers pass through Customs, and passengers must declare all purchases?
- (e) <sup>✕</sup>Passengers should pass through Customs, and must passengers declare all purchases?

Apparent counterexamples to this are sentences such as

- (f) (I know) passengers should pass through Customs, but must passengers declare all purchases?
- 89. (a) He'll keep his word, but will he bring a bottle?
- (b) He'll keep his word - or will he?

Note that (a) some adversative element must precede the question, (b) sentences (88f) and (89a) are ambiguous, as between a genuine YNQ (with a falling intonation contour, rising in the tail) and a "rhetorical" Q (with nuclear stress on the auxiliary verb and the remainder on a low rising intonation), (c) both of these senses imply a higher performative: YNQ requiring 'I know ... but I don't know ...' (hence the adversative but); the rhetorical Q requiring 'I accede to ... but I ask you to assure me that it is necessary/certain that ...'. (89b) is rather similar in sense to the "rhetorical" Q interpretation.

If NR relativization precedes YNQ formation on the other hand, we should expect the latter to be freely applicable to the results of the former, and this indeed seems to be so:

- 88. (g) Passengers, who must declare all purchases, should pass through Customs. ((88a) + NR relativization)
- (h) Should passengers, who must declare all purchases, pass through Customs? ((88g) + YNQ formation)

I conclude, therefore, that NR relativization precedes YNQ formation and that it is this fact which explains the non-occurrence of (86b).

Thompson then discusses two possible objections to her analysis of NRs, the first suggesting that all NRs represent an interpolated comment of the speaker's; and this she does not account for; and the second challenging her identical source for Rs and NRs. Thompson counters the first of these objections by claiming that "it is not correct to assign the responsibility for the truth of every NR to the speaker of the sentence in which it occurs" (p. 86). A sentence like (90) is ambiguous between speaker-assertion and matrix-subject-assertion:

90. Harold says that his girlfriend, who is a little bit crazy, wants to go to Hanoi.

The NR is ambiguous between:

90'. ... who Harold asserts is a little bit crazy ...

90''. ... who I assert is a little bit crazy ...

Notice first that it is always the case that the NR represents a speech-act made by the subject of a sentence higher than the matrix of the NR, i.e. normally an explicit or implicit performative; (and this performative is not necessarily declarative: it may be promissory, monitory, modalized etc.). Secondly, notice that Thompson still provides no account for these facts (which we have already noted in connection with sentence (83a)): her remarks serve to refine them rather than dismiss them.

The second objection Thompson tries to deal with in terms of speaker-hearer assumptions. We have already seen that her approach is deficient since it completely ignores context (section 2.16), and fails to observe that Rs are genuinely restrictive semantically in that they specify a subset of a set. I claim, therefore, that the evidence does not support Thompson's account of a single, conjunctive source for both R and NR.

### 3.23 R and cleft

In sections 1.2 and 2.3 above, I discuss the superficial resemblance between R and cleft, and suggest a derivation for both cleft and pseudo-cleft from simple clauses by a rule known as Promotion, which is triggered by Focus. However, the question still remains: how similar are these constructions to Rs? The suggestion has in fact been made that clefts and Rs are actually closely-related derivationally. I want now to examine this problem by discussing that proposal at some length. The paper in question is 'Focus and Relativization', by Paul Schachter (1972), which has two declared aims:

- (a) To show the relationship between Focus (F), (actually cleft sentences only; he explicitly ignores other types of Focus), and Relativization ((R); actually only restrictive relativization; he accepts Ross's and Thompson's account of the conjunctive source for NRs, although he does not mention that the latter also derives Rs from conjunction).
- (b) to explore the nature and implications of this relationship.



The point of present concern is, of course, his account of the derivation of Rs, and the semantic implications of it. There follows a summary of Schachter's paper: Section I examines the similarities between F and R in four unrelated languages, of which one is English. Cleft-sentences in English may take either proper or common nouns in the focussed position:

- 91. It's Papa who pays;
- 92. It's the woman who cleans the house.

He notes that (92), on paper at least, is ambiguous between F and R, since they may be responses to different questions:

- 92. (a) Who cleans the house? \_\_\_\_F
- (b) Who's that? \_\_\_\_R

The responses both have the same sequence (92), but are stressed differently in speech:

- 92. (a') It's the woman  who cleans the house;
- (b') It's the woman who cleans the house. 

(An interesting point relating to the earlier discussion, of Thompson's paper, is that it is sentence (92a'), the cleft-sentence, and not (92b'), the restrictive relative, which embodies a presupposition that there is somebody who cleans the house).

Points of similarity, however, are:

- (1) Both (92a') and (92b'), and similar pairs, draw upon the identical store of relative pronouns: who(m), which, that, whose; and have similar deletability.
- (2) Both follow the complex NP constraint (Ross 1967) although there are examples that appear to break it.

Differences are:

- (1) F, but not R, can have a proper N preceding the relative pronoun.
- (2) R, but not F, may have a non-specific head, e.g. It's something I ate (which can only be R).

Schachter then finds "equally striking resemblances" in three other languages, all unrelated, namely Akan, Hausa and Ilonggo. All of these have constructions similar to English clefts and restrictives which also depend on shared or similar rules.

Section II examines the nature of this deep relationship between F and R. He finds counter-evidence to the hypothesis that either one derives from the other, and considers that this leaves only one possibility: that both share some distinguishing property. To this end, he notes that both F and R

have previously been taken to be embedded constructions. However, in the case of F, evidence contrary to this supposition is provided by clefts containing reflexives, e.g.

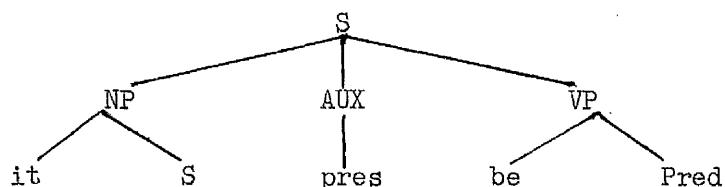
93. (a) John was worried about himself.  
 (b) <sup>x</sup>Himself was worried about John.  
 (c) <sup>x</sup>John told Mary not to worry about himself.  
 (d) It was himself that John was worried about.  
 (e) It was about himself that John was worried.

where the occurrence of a reflexive form in (d) and (e) suggests that the NPs, at an earlier stage of derivation, appear in a simplex structure. To reconcile this with a surface structure which contains two subject NPs and two partly independent auxiliary constituents, Schachter puts forward a "promotion" analysis of the construction, whereby the simplex structure underlying (93a) is embedded in a structure containing 'it BE  $\Delta$ '. Reflexivization takes place in the simplex structure, and then the focussed element is "promoted" to fill the dummy position ' $\Delta$ ', and the rest of the simplex is extraposed:

93. (f) it (that John was worried about John) was  $\Delta$ .  
 $\xrightarrow{\text{REFL}}$  (g) it (that John was worried about himself) was  $\Delta$ .  
 $\xrightarrow{\text{PROM}}$  (h) it (that John was worried (about)) was (about) himself.  
 $\xrightarrow{\text{EXTRAPOS}}$  (i) it was (about) himself that John was worried (about).

This process seems to square with the intuition that clefting is a way of raising an item for emphasis. However, the matrix structure:

93. (j)



seems very difficult to justify as representing some sort of deep structure, given that sentences such as (93d, e) are synonymous with the simplex:

93. (k) John was worried about himself

with emphatic stress on himself, and also that the equivalent structures in Akan, Hausa and Ilonggo are simplexes, with the focussing indicated by special markers rather than a superordinate sentence structure. This suggests,

therefore, that the it was part of (93d) and (93e) is superficial, and that the clefting process in English is a special variety of Topicalization, cf. sections 2.31 and 2.32 above, showing that items are Topicalized or Y-moved, depending on their stress (ibid.):

93. (l) Himself, John was worried about.

(m) About himself, John was worried.

though (l, m) seem to lack the presupposition component of (d, e) and (k). However, this does not affect the suspect nature of the promotion analysis. Some speakers evidently find (93l, m) unacceptable. For others, including myself, they are perfectly acceptable, (m) perhaps slightly more so than (l). Both require a context which, for example, lists John's varying attitudes to various people, e.g.

93. (n) His 'mother, John depended on. His 'father, he viewed with suspicion. On 'Mary, his sister, he doted. { Him'self, John  
About him'self,  
was worried about. }  
John was worried. }

(' indicates contrastive stress: (93n) therefore illustrates Y-movement rather than Topicalization).

Schachter also attempts to account for R sentences by using a promotion process. The usual treatment is through embedding by way of a "matching" condition of NP coreference. Schachter adduces evidence, however, which seems to cast doubt on this analysis:

(1) From idioms. The sentence

94. (a) The headway which we made was satisfactory

by the matching analysis, calls for a matrix:

(b) <sup>3E</sup>The headway was satisfactory.

The matching analysis, then, would derive (94a) from a grammatical sequence embedded in an ungrammatical sequence.

(2) From pronominal reference. The sentences (95a, b) show that pronominal reference is normally "forward" and "downward":

95. (a) John<sub>i</sub> thinks that Mary has an unfavourable opinion of him<sub>i</sub>.

(b) <sup>3E</sup>He<sub>i</sub> thinks that Mary has an unfavourable opinion of John<sub>i</sub>.

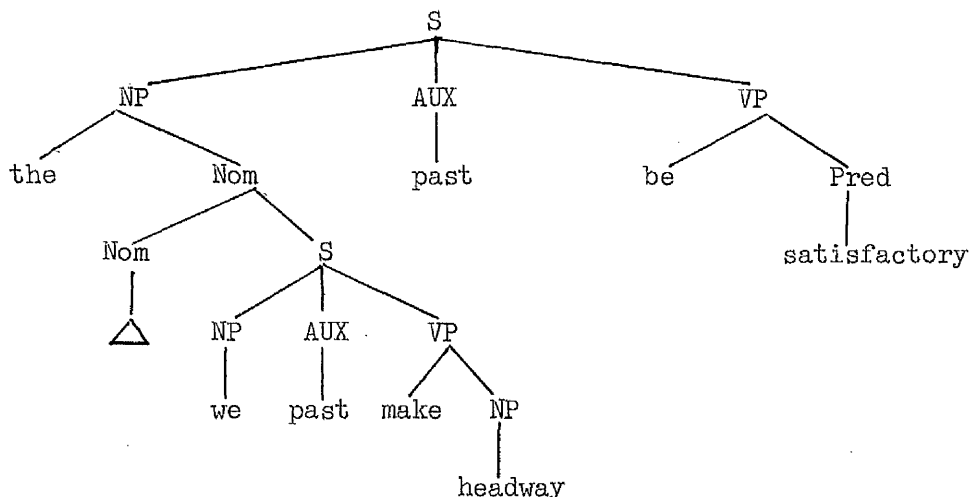
Sentences (95c, d), however, show that with certain R sequences the reverse is the case:

95. (c) The opinion of him<sub>i</sub> which John<sub>i</sub> thinks Mary has is unfavourable.

(d) <sup>3E</sup>The opinion of John<sub>i</sub> which he<sub>i</sub> thinks Mary has is unfavourable.

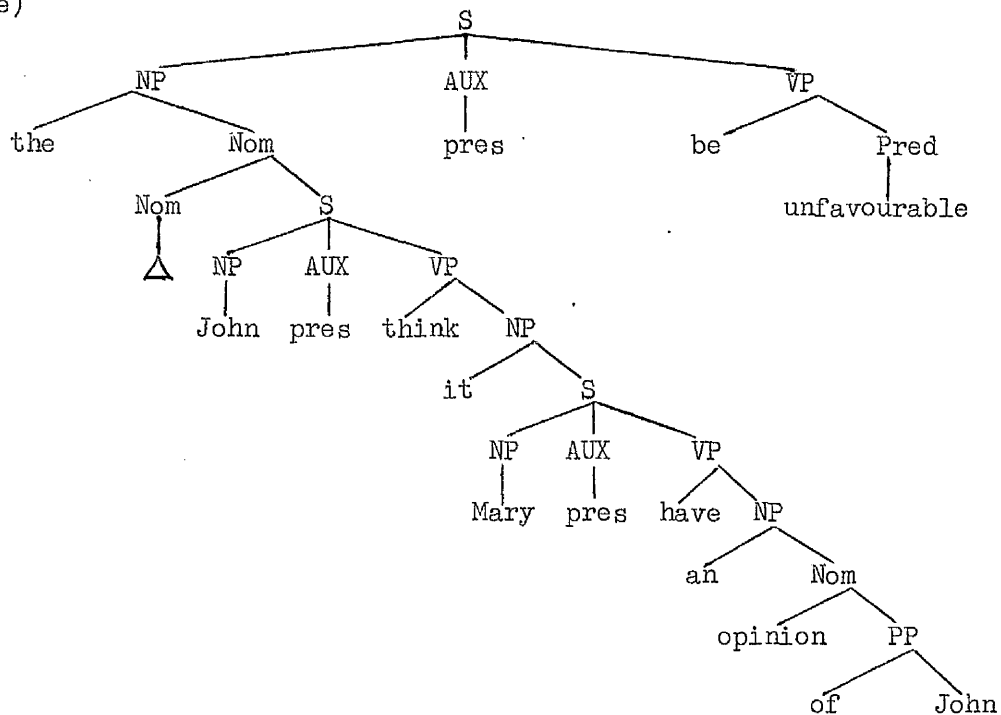
The matching analysis must apparently derive (95c) in such a way that the full NP neither precedes nor commands the pronominalized NP, which runs contrary to the normal generalizations about pronominalization. Schachter's solution to these difficulties is to suggest a promotion analysis for Rs also, whereby (94a) is represented as:

94. (c)



from which headway is promoted into the dummy position, and the relative clause is in other respects formed at the same time (though one would think that copying rather than promotion into △ would be necessary here, in order to preserve the otherwise well-motivated idea of matching). (95c), similarly, is represented as:

95. (e)



Pronominalization would apply forward and downward as it normally does, giving an opinion of him. This phrase is then promoted into the  $\Delta$  position, with the attendant changes as before.

Both of these problematical situations arise because some element which ought to be tied in some way to an embedded S appears in a matrix S. The promotion analysis, then, solves the problem by providing the necessary relationships in the embedded S, and then raising the item in question to the matrix S. Raising operations are well-documented, particularly in generative semantics (see Postal 1974, and Ch. IV below), but there remain some problems with this particular proposal. However, it should first be mentioned that alleged counter-examples, such as those Schachter adduces to the matching analysis, can legitimately be dealt with in other ways. The Neogrammarians proposed four strategies for countering apparent exceptions to their "exceptionless" rules:

- (a) Deny that there is in fact a relationship between the exception and the regular forms.
- (b) Agree that there is a relationship, but suggest that it is a different one from that handled by the rule.
- (c) Accept the irregularity, but explain it as resulting from a regularity at another level.
- (d) If all else fails, revise the rule.

Schachter's solution is in fact (d), but he probably has not explored the other strategies. With apparent counter-examples like (94a), it could be suggested that idioms do not constitute valid counter-examples to rules devised for non-idiom expressions, since they differ from regular phrases in many ways and therefore presumably require special treatment anyway. This would be strategy (a). Schachter's example [(43a)] (The portrait of himself that John painted is extremely flattering) is, like (95c), one of a series of counter-examples to the general rules of pronominalization, as discussed above. In placing these examples together, Schachter is presumably assuming that reflexivization and pronominalization are closely-associated rules, and perhaps even complementary aspects of a single rule. However, Paul Postal (1971: chs. 2, 10, 16) argues - convincingly to my mind - that they are separate rules, separately ordered, and that while reflexivization is cyclical, pronominalization is not. He also claims (p.17) that the latter "must apparently follow every other transformational rule in English which effects the reordering of nominal constituents". The sentences (95c) and Schachter's [(43a)] contain, in Postal's terms, "picture-noun

nominalizations" (such as story, opinion, picture, caricature, joke etc.) and he deals with the latter, at least, by postulating a special rule of late reflexivization (1971:185-91), the details of which need not concern us here. However, we might note that this is strategy (b) for handling counter-examples. George Lakoff mentions (1968:6-7) examples similar to (95c), which seem to show that pronominalization can operate backwards out of an embedded clause when the pronominalised element in the main clause is not the subject:

96. (a) Mary gave him<sub>i</sub> a dollar before Sam<sub>i</sub> could refuse.

(b) \*She<sub>i</sub> gave Sam a dollar before Mary<sub>i</sub> could change her mind.

Lakoff relates this and many other facts about pronominalization to his hypothesis about "output" conditions" (also known as "surface-structure constraints") although neither he nor Postal (who would presumably relate backwards-out-of-embedded-clause pronominalization to his Crossover Principle, which is a transformational, or derivational, constraint), as far as I can determine, anywhere deal specifically with counter-examples such as (95c). Their treatment of the problem, anyway, would presumably make use of strategy (c), constraining the theory rather than the specific rules involved.

There is, however, at least one more strategy, not included by the Neogrammarians, as far as I know, among their battery of arguments, which is:

(e) Deny the accuracy or completeness of the data,

and it is this strategy which I wish to use in discussing Schachter's proposal. First, we might note that there is an obviously related variant of (95c), namely:

95. (f) The opinion which John thinks Mary has of him is unfavourable, which is "regular" with respect to pronominalization and, furthermore, is probably more widely acceptable than (95c). (95c) could be derived from (95f) by a rule rather like Pied Piping, which moves the remainder of a constituent along to rejoin part of it which has been moved out. We also note that complex NPs containing a Prep Phrase generally seem to act similarly:

97. (a) The chartered accountant said that Mabel had had a row with him.

(b) The row that the chartered accountant said that Mabel had had with him was over her chartered account.

(c) The row with him that the chartered accountant said that Mabel had had was over her chartered account.



98. (a) Frenelli knew the Mob had made a threat on his life.  
 (b) The threat which Frenelli knew the Mob had made on his life didn't scare him a bit.  
 (c) The threat on his life which Frenelli knew the Mob had made didn't scare him a bit.

However, certain elements appear to inhibit the raising of the Prep phrase somewhat:

99. ?The full-nelson on him which the wrestler said the nun had put rather ruined his morale.  
 100. (a) ??The rug from under his assistant which the magician pulled was made in Birmingham.  
 (but (b) The rug under his assistant which the magician transformed was made in Birmingham).  
 100. (a) \*The ball across the street which the urchins kicked went under a lorry.  
 (but (b) The ball across the street which the urchins purloined belonged to little Wullie Smith).

I merely note here that the inhibition seems to be semantic rather than syntactic in nature, and appears to occur in the vicinity of [+ Activity] (including [+ Motion]) verbs.

Finally, we must challenge, I think, Schachter's attributions of grammaticality in some cases (perhaps dialectal differences account for this). Thus (95d) seems to me marginally acceptable, with the stress appropriately reduced on he (and on the question of stress-reduction v.-à-v. pronominalization, see Lakoff 1968b:10-14), and seems to me completely acceptable with the proper noun replaced by a definite common noun:

102. The view of the players<sub>i</sub> which they<sub>i</sub> think the public has is a flattering one.

and in the right contexts is fully acceptable even with a proper noun:

103. The image of Barenboim<sub>i</sub> which he<sub>i</sub> wants the public to have is dedicated, vigorous and fiery.

Thus it appears that the promotion analysis for R relative clauses is not particularly well-motivated, elegant though it is, and indeed Schachter himself raises problems that the analysis cannot handle (and which - though he does not mention it - the traditional matching analysis for the most part can handle) in the next section of his paper:

- (A) There are languages which form relative clauses without an antecedent by embedding one sentence in another in the place which the antecedent would occupy if it were in a simple sentence. The "head" has a relative marker attached to it, e.g. Bambara
104. (a) tyè ' be n ye so mìn ye dyo  
 man the PROG. [I PERF. house REL. see] build  
 'The man is building the house that I saw' (i.e. 'the I-having-seen house') (p. 22).

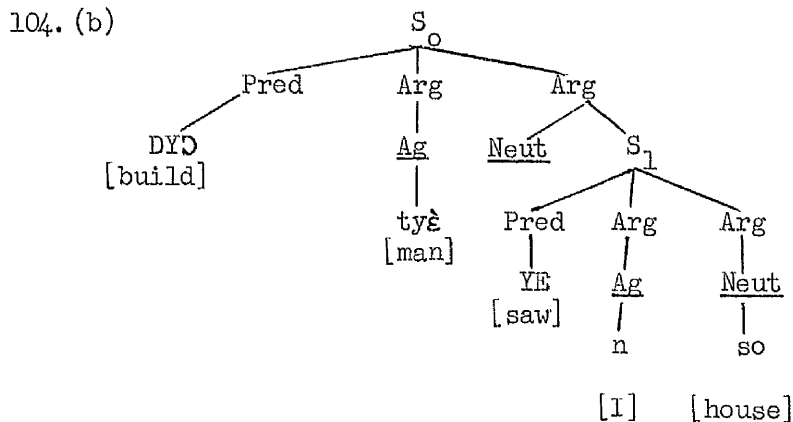
It is, of course, true that the matching operation appropriate for English will not deal with this situation adequately, but a fairly banal solution to the Bambara facts would seem to be a matching rather than a promotion analysis. Schachter implies that (2) is the only possible matching analysis for Bambara:

- (1) For English: on the identity condition between  $N_1$  (matrix) and  $N_2$  (constituent) being met (= matching), move the constituent S to a position immediately following  $N_1$ . Delete  $N_2$  and add the appropriate relative pronoun at the beginning of the constituent clause.
- (2) For Bambara: on the identity condition between  $N_1$  (matrix) and  $N_2$  (constituent) being met (= matching), move the constituent S to a position immediately adjacent to  $N_1$ . Delete  $N_1$  and add the relative marker to  $N_2$ .

As Schachter says, this analysis requires theoretical justification for deleting the higher rather than the lower element of a bound pair ( $N_1$  and  $N_2$ ).

A third analysis is possible, however, fitting the Bambara facts, given a GS-type grammar as developed in Ch. IV:

- (3) Since an Argument node may be filled by a Role, by S, or by Role^S, the "Object" Argument may be developed as S (thus expressing Schachter's description of an S embedded where the antecedent would be):



Since Bambara is evidently an SOV language, low-level rules will move the Pred node to the rightmost position in the immediately-dominating S. (104a) is, I suggest, a derived tree resulting from a rule which replaces an Argument subtree with an S containing that subtree. This would appear to be a kind of matching analysis, therefore.

(B) Some extensions of the idioms previously used to justify the promotion analysis, now provide difficulties for it:

105. (a) We made satisfactory headway.  
 (b) She's keeping careful track of her expenses.

Such Ss as (105a, b) by almost all accounts would be derived via:

105. (a') ??We made headway that was satisfactory.  
 (b') \*She's keeping track which is careful of her expenses.

and both the promotion and the matching analyses would assume underlying these:

105. (a'') \*The headway was satisfactory.  
 (b'') \*The track was careful.

Schachter's suggestion is that the adjectives modifying idioms should be directly generated in attributive position, particularly in the case of keep close/careful etc. track of, where the number of possible adjectives is limited. Clearly, if these expressions can be treated as special for one purpose, they can be treated likewise for other purposes. Schachter's suggestion for dealing with modified idioms therefore vitiates the force of idioms as counter-examples to the matching analysis.

(C) If the embedded S contains a two- (or more) place predicate, then any N in it can be promoted:

106. (a) The earl gave a pearl to a girl.  
 (b) The earl who gave a pearl to a girl (was English).  
 (c) The pearl that the earl gave to a girl (was English).  
 (d) The girl that the earl gave a pearl to (was English).

The problem for the promotion analysis - and it is a crucial one - is that the underlying representations of (106a - d) are identical: (106a - d) should, therefore, be synonymous. The fact that they are not suggests either that the promotion analysis is wrong, or that linguistic theory is wrong. Schachter opts for the second possibility, noting that the problem concerns not focus and presupposition, in the sense of Chomsky 1970, but basic categorial relationships. He suggests that semantic representation

should be cyclic (which seems to suggest that Schachter is a crypto-interpreter), so that "semantic relevance is ascribed to a level of syntactic structure" (p. 27). One might notice, however, that there is no problem at all here for the matching analysis.

- (D) Selectional restrictions pose a problem of a similar kind, in that promotion from a structure such as that underlying (106a) must take place before selectional restrictions for the matrix S can be specified:

106. (e) The earl who gave a pearl to a girl was virile.  
 (f) <sup>R</sup>The girl who the earl gave a pearl to was virile.

Schachter proposes a similar solution for this problem to that proposed in (C) above, so that selectional restrictions might be characterized cyclically. Again, note that there is no problem here at all for the matching analysis.

Schachter's final section investigates to some extent the explanatory power of the promotion analysis. Since he wants to make it cover two different (though similar in some superficial respects) operations, a semantic correlate for the syntactic proposal would provide a certain amount of justification. Both F and R express presuppositions (in Chomsky's sense), though the latter only when the head NP is a "referring" phrase:

107. (a) I'm looking for a man who's quicker on the draw than Wyatt Earp.

- (b) Some man is quicker on the draw than Wyatt Earp.

(107a) presupposes (107b) only when the relative clause is an identification of the head NP. If the relative, however, merely specifies a desideratum, then (107a) does not presuppose (107b): a man with such qualifications may not in fact exist. Presupposition, therefore, is evidently not a necessary property of Rs, and thus cannot provide any semantic correlation for their putative syntactic relationship with Fs.

Schachter then investigates, however, the notion that both Fs and Rs separate out "foregrounded" and "backgrounded" information. This is clearly the basic function of Fs; can Rs, however, be forced into the same mould? Schachter suggests that the function of the relative clause is to make an unlimited number of sentences into nouns, or noun-like expressions, by dividing the underlying sentential material into two parts, a head and an attribute. It is this division which Schachter claims is an instance of foregrounding: in both cases, he says, the sentence is divided into a more

prominent and a less prominent part. I must admit I find this idea singularly hazy, and as an explanatory device quite unrevealing. The notion of "foregrounding", as Schachter describes it, ought to be, given his claims for it, a basic semantic element. In fact, the terms he uses reveal that if anything it is an organizational device for the deployment of syntactic forms; but about the underlying semantic motivation for the operation, he actually makes no substantial suggestion at all. Now one would hope that his organizational hypothesis could be related to what is known about the organization of discourse: both, after all, concern the arrangement and emphasis of information. A short (and somewhat Pinteresque) dialogue might illustrate this:

108. A: Did many people come and view the house?

B: We had several over a few days.

(I) One man came yesterday though {, and } bought it immediately.  
He }

(II) A: So the man who came yesterday bought it? I'd have thought the first one along would have snapped it up.

(III) B: No. It was the man who came yesterday who bought it.

Notice that (109) is ungrammatical, i.e. cannot be contextualized:

109. \*The man who it was who called yesterday bought it,  
which is to say that a R can be embedded in a F, but not vice-versa.

What may at first sight appear to be a counter-example to this statement in fact turns out not to be:

110. (a) ?The man who it was who read to me was Joe  
(assuming that this is in fact grammatical). Notice that if this was really a cleft embedded in a relative, its source would be the structures underlying (110b, c):

110. (b) The man was Joe.

(c) It was Joe who read to me.

But the antecedent for the relative clause in (110a) is not the coreferent (Joe) but another noun (man). The sentences with Joe in antecedent position are even more dubious:

110. (d) ??The man was Joe who it was who read to me.

(e) \*Joe who it was who read to me was the man.

I shall be arguing subsequently (next section) that certain types of sentence which superficially resemble relative clauses are in fact types of focussed construction. (110a) represents one such sentence-type. (108) seems to suggest a hierarchical relationship among conjoined (or sequential) sentences,

relative sentences and cleft sentences, in the order (I), (II), (III), as indicated above. I should not have thought that this apparent fact provided evidence one way or another for Schachter's promotion hypothesis, however.

To mention some of my uncertainties about Schachter's analysis of Rs, therefore:

- (i) He appears to assume that all antecedents are definite, and that all relative clauses are indefinite (for work which examines other possible permutations, see Taglicht 1972).
- (ii) Not all embedded NPs can in fact be promoted:
  - 111. <sup>ⓧ</sup>The philosophers who the Greeks were were interested in the world around them.
  - 112. <sup>ⓧ</sup>The house which Mary was interested to look over John's.
- (iii) The difficulties for the matching analysis which Schachter makes much of are probably cases where derivational constraints (e.g. Crossover) have been violated, or which would be handled in a separate (idiom) grammar (which he needs anyway for modified idioms). The difficulties for the promotion analysis, however, are of a much more intractable nature, since they involve the basic semantic constituency of the language, i.e. his analysis falsely predicts ambiguity in some sentences, and mishandles semantic compatability in others.

I therefore propose to treat Rs as embedded constructions (as is traditional), and Fs as derived from simple Ss under motivation from the surrounding discourse.

### 3.24 R and pseudo-R

There are a number of constructions similar to relatives in superficial form (cf. section 1.2), all of them, as far as I am aware, types of "Focus" construction. I have already examined in some detail Schachter 1972, which attempts, I think unsuccessfully, to draw a parallel between cleft and R sentences. I have also discussed Kuroda 1969a, but not on this particular topic, since he does not actually bring up the question of focus-constructions. However, some of his examples of types of relative-clause are in fact pseudo-cleft constructions, so clearly the two structures are easy to confuse. I shall also want to extend my discussion of pseudo-clefts to a variant form which is even more relative-clause-like, and which, as far as I know, has not been classified with pseudo-clefts in previous work. I have already referred to this as pseudo-relative; I shall henceforth call it pseudo-R,

since there are no NR-like structures.

Kuroda, in comparing the behaviour of relatives and interrogatives, uses the following examples:

113. (a) What lay on the table was the issue.

114. (a) What lay on the table was the tissue.

(113a) is simply a form of indirect question, as the variants (113b-e) show, and need not detain us:

113. (b) What lay on the table was  $\left\{ \begin{array}{l} \text{the question} \\ \text{the problem} \end{array} \right\}$

(c) The  $\left\{ \begin{array}{l} \text{issue} \\ \text{question} \\ \text{problem} \end{array} \right\}$  was what lay on the table.

(d) They  $\left\{ \begin{array}{l} \text{asked} \\ \text{wanted to know} \end{array} \right\}$  what lay on the table.

(e) "What lay on the table?" was his first question.

(114a), however, is quite different: tissue cannot allow the same possibilities as issue, and Kuroda says that what here is an "independent relative pronoun, since it apparently lacks an antecedent". He later sets up rules deriving what in (114a) from that which, giving as the "base form" of (114a):

114. (b) THAT Pro (Wh + SOME Pro lay on the table) was the tissue.

An immediate point that arises concerns the pragmatics of relative formation: I have mentioned throughout the foregoing discussion the "identity condition" on Wh-relative movement, and stressed that it means identity of reference as well as of form. Yet this condition is surely somewhat tenuously adhered to in (114b).

However, let us look at some variants of (114a):

114. (c) The tissue was what lay on the table.

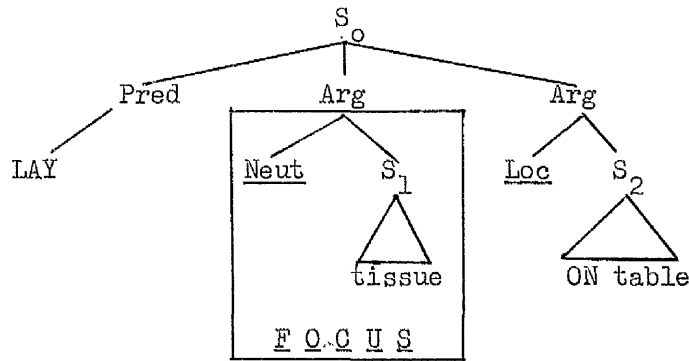
(d) It was the tissue that lay on the table.

(114d) is, of course, the corresponding cleft-sentence, which is usually taken to be an extraposition from a structure like:

114. (e) It (that lay on the table) was the tissue.

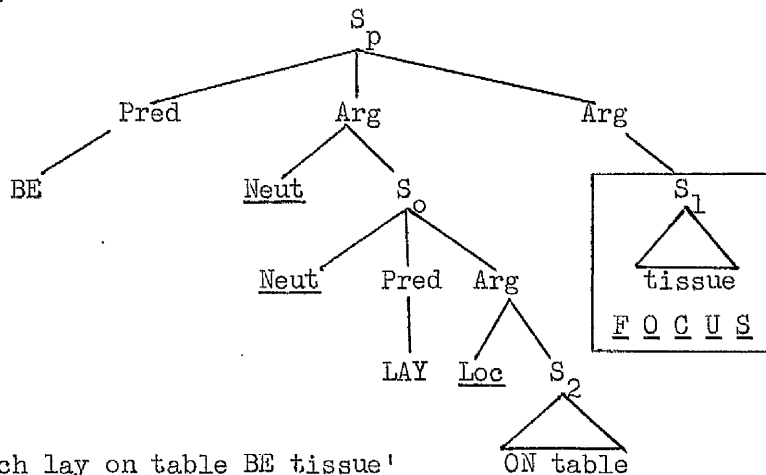
If we replace it in (114e) with Wh-, we have a possible alternative derivation to Kuroda's (and indeed the usual derivation). However, as we saw in sections 2.31 and 2.32, there is a well-motivated derivation for such Ss which regards part of an underlying simple S as promoted under Focus (a discourse condition). Thus, underlying (114a) would be a tree roughly of the form:

114. (f)



which, by promotion, becomes:

114. (g)



'Neut (Neut)' by low-level rule becomes what. (114g) with extraposition of  $S_0$  becomes the cleft-sentence (114d).

I am not so much concerned with (114a) and its derivation, however, as with another of its synonyms. (114a) does not make a very common type of relative clause - indeed, as we have seen, it is unlikely to be a relative clause at all. Its variant, however, is formally very much like a relative, and indeed there may be no clear distinction between the constructions, although most cases are clearly demarcable. This is the pseudo-R (the term was independently coined by Stockwell et al., *op.cit*:421, though they use it of generic relatives and wh-clauses in clefts etc.):

114. (h) The thing that lay on the table was the tissue.

(i) The material that lay on the table was the tissue.

(j) The stuff that lay on the table was the tissue.

We can add some more sentences of the same type:

115. (a) The knife which she wore at her side was a dagger.

(b) The thing which annoyed him most was her slovenliness.



- (c) The  $\left\{ \begin{array}{l} \text{one} \\ \text{man} \end{array} \right\}$  who had helped him the most was old Mr. Molestrangler.
- (d) The ship on which he received his basic training was a four-master.
- (e) The book which she was clutching to her ample bosom was Fanny Hill.
- (f) The profession in which he quickly found an opening was dentistry.
- (g) The thing which really makes me see red is people who push.
- (h) The point which I want you to notice is the general nature of the antecedents.

We may immediately observe that apart from the variation with initial what, who,<sup>4</sup> where, etc., which gives us the pseudo-cleft, all of these sentences are (a) cleftable and (b) expressible as simple sentences, without change of meaning (though focus may differ, which means, of course, a change in discourse-function). We have already seen (114h) in its cleft form: both (114i) and (114j) cleft into the same form (114d), without change of meaning. Some clefts from (115a - h) are:

116. (a) It was a dagger which she wore at her side.  
 (b) It was her slovenliness which annoyed him most.  
 (c) It was old Mr. Molestrangler who had helped him the most.  
 (d) It was a four-master which he received his basic training on.  
 (e) It was Fanny Hill which she was clutching to her ample bosom.

Simple sentences which correspond to (114h - j, 115, 116) are:

117. (a) The tissue lay on the table.  
 (b) She wore a dagger at her side.  
 (c) Her slovenliness annoyed him most.  
 (d) Old Mr. Molestrangler had helped him the most.  
 (e) He received his basic training on a four-master.  
 (f) She was clutching Fanny Hill to her ample bosom.

If we compare these sentences with true relative-clause sentences, we find that both of these paraphrases are impossible:

<sup>4</sup> Actually, rarely with who initially. Sometimes who in final clause position is possible:

(a) The managing director was who I went to see  
 but more commonly The man/person who, (i.e. pseudo-R) or the cleft-construction is preferred. There are some archaic uses with initial who, however:

(b) Who steals my purse steals trash,  
 where modern English would use Anyone who..., or Whoever...

118. (a) The Grand Master who finally won the tournament played a superb endgame.  
 (b) <sup>ⓧ</sup>It (was) played a superb endgame who finally won the tournament.  
 (c) <sup>ⓧ</sup>(Played) a superb endgame finally won the tournament.  
 (d) The actor who had once been a barrow-boy played the part of Hamlet loudly.  
 (e) <sup>ⓧ</sup>It played the part of Hamlet loudly who had once been a barrow-boy.  
 (f) <sup>ⓧ</sup>The part of Hamlet loudly had once been a barrow-boy.

It might be thought that the situation in (116) - (117) is a function of the matrix structure  $NP_1$ -BE- $NP_2$ . However, this is not in fact the case; though the sentences (119a - i) do act differently from (118a - f):

119. (a) The grand piano she was playing was an antique.  
 (b) It was an antique she was playing.  
 (c) She was playing an antique.  
 (d) The girl who was voted Miss United Dairies 1973 was an ugly baby.  
 (e) <sup>ⓧ</sup>It was an ugly baby who was voted Miss United Dairies 1973.  
 (f) <sup>ⓧ</sup>An ugly baby was voted Miss United Dairies 1973.  
 (g) The waiter who served us was a scream.  
 (h) <sup>ⓧ</sup>It was a scream who served us.  
 (i) <sup>ⓧ</sup>A scream served us,

since what happens here is not ungrammaticality but loss of meaning. In fact precisely the same thing happens in the sentences (114h - i, 115a - h) when other  $NP_2$ s are substituted in the matrix Ss:

120. (a) The knife which she wore at her side was a beauty.  
 (b) ?It was a beauty she wore at her side.  
 (c) ?She wore a beauty at her side.  
 (d) The ship on which he received his basic training was a great attraction.  
 (e) <sup>ⓧ</sup>It was a great attraction he received his basic training on.  
 (f) <sup>ⓧ</sup>He received his basic training on a great attraction,

and this becomes still more evident with different predicates:

121. (a) The  $\left\{ \begin{array}{l} \text{thing} \\ \text{material} \\ \text{stuff} \end{array} \right\}$  that lay on the table was bright red.  
 (b) ?It was bright red that lay on the table.  
 (c) <sup>ⓧ</sup>Bright red lay on the table.

- (d) The book which she was clutching to her ample bosom was beginning to wilt.
- (e) ?It was beginning to wilt that she was clutching to her ample bosom.
- (f) <sup>x</sup>She was clutching beginning to wilt to her ample bosom.

The explanation for these strange facts is, I think, a semantic one. Consider the apparent matrices of (114h - j, 115 a - h).

122. (a) The  $\left\{ \begin{array}{l} \text{thing} \\ \text{material} \\ \text{stuff} \end{array} \right\}$  was the tissue.
- (b) The knife was a dagger.
- (c) ?The thing was her slovenliness.
- (d) The man was old Mr. Molestrangler.
- (e) The ship was a four-master.
- (f) The book was Fanny Hill.
- (g) The profession was dentistry.
- (h) ?The thing is people who push.
- (i) ?The point is the general nature of the antecedents.

In all cases, the in the full pseudo-R can be anaphoric or cataphoric. In (122c), (h) and (i), at least, the so-called matrix-sentence is actually of dubious grammaticality. However, the point I wish to make is that in each case, the first NP is a more general term which includes the second NP: tissue is a sort of material or, more generally, stuff, or most generally it is a physical object; a dagger is a kind of knife; a four-master is a type of ship; slovenliness and people who push are state and event entities. To say that one NP is a more general term which includes another NP is to say that the first NP is a superordinate term or a hyponym, or, in terms of our theory, that it represents a node which dominates the second NP. Thus, like the it of the cleft-sentence, or the what of the pseudo-cleft, it serves merely to occupy the place in structure from which the focussed element has moved. A related point is that definitions are often couched in this construction:

123. (a) An enclosure in which sheep are kept is a pen.
- (b) A physician who treats teeth is a dentist.
- (c) A tarantula is a big poisonous spider living in Mediterranean countries.
- (d) A rhomb is an oblique equilateral four-sided rectilinear figure whose opposite sides are parallel.

(123c) and (d) are taken from Bierwisch and Kiefer 1969, a study of definitions and generic expressions. They are inverts of the form of (123a) and (b), but nonetheless equivalent; they are also much more complex, each adjective representing, in such a defining context, a restrictive relative. We might also note, in common with other generics, that definitions may be expressed in a number of ways, including IF/THEN:

123. (e) If a figure is oblique, equilateral, four-sided, rectilinear and has parallel opposite sides, then it is a rhomb.

The relationships between the various types of sentence shown in (123a - e) and discussed in Bierwisch and Kiefer are clearly very complex semantically, and their investigation could well throw new light on the explanation of restrictive relatives of all kinds, but this is too large an undertaking to pursue here.

Pseudo-R, then, is a type of focussed construction, equivalent to the pseudo-cleft in all significant ways, as far as I can see (i.e. I am claiming that it is merely a stylistic variant of pseudo-cleft, and indeed Akmajian 1970 - see section 1.2 above - actually takes a pseudo-R as an example of pseudo-cleft). However, pseudo-R is on the other hand clearly very similar to Rs in form, though as we have seen Rs do not have the same relationship as pseudo-Rs to true focussed constructions (such as clefts) nor to simple Ss. Any account seeking to derive Rs from focussed constructions, or at least to relate them, must be sure that it is not in fact using pseudo-Rs for data, bearing in mind that the "antecedent" in a pseudo-R can be any noun which is hyponymic to the predicate NP of the "matrix"; it is not confined to "semantically empty" nouns such as thing, person or one. This serves to diminish the distinction between pseudo-R and true R even more.

### 3.25 Further evidence for relative sources

#### 3.251 Opening remarks

In Ch. II and the preceding sections of Ch. III we have examined a large number of syntactic varieties: NRs and several distinct senses of R, both with definite and with indefinite antecedents, clefts, pseudo-clefts, pseudo-Rs. The whole tenor of our discussion seems to point to this conclusion: that for Rs, some sort of embedding source is correct, while for NRs, a conjunction analysis of some kind is justified. In addition, both are significantly influenced by contextual factors, particularly focus, contrast, and implication. We have seen this contextual influence as it

applies to Rs (and also to focussed constructions); I will devote part of this section to examining contextual aspects of NRs.

Furthermore, I also want to argue - chiefly using evidence from lexicalization - that the embedding underlying Rs is an embedding of semantic elements rather than categorial ones, i.e. that the source for Rs occurs at an early stage in the derivation, whereas that for NRs occurs late. In general, though, I should make the point that clearcut arguments for a semantic rather than a syntactic base (or vice-versa) are very difficult to find (though I shall be discussing some in Ch. IV). Such arguments usually depend on putative, potential or projected psycholinguistic evidence, or on such arguments as model simplicity. Genuine linguistic arguments for one position or the other are usually indeterminate or ambiguous, or ultimately they depend entirely upon the assumptions, faith, beliefs and hopes of the linguist. Thus in the debate between the interpretivists and the generative semanticists (see Ch. VI), some of the participants have been arguing from deeply-entrenched positions of faith rather than reason.

### 3.252 NRs, synonymy and contextual modification

I shall be examining the semantics and derivation of NRs in greater detail in Ch. V. For the present, I want merely to indicate some contextual data of relevance to the behaviour of NRs. Consider the following sets of Ss and S-sequences:

124. (a) Adrian ffitch-ffitch, who is the managing director's nephew, was allowed a two-hour tea-break;
- (b) Adrian ffitch-ffitch was allowed a two-hour tea-break, being the managing director's nephew;
- (c) Adrian ffitch-ffitch is the managing director's nephew, and he was allowed a two-hour tea-break;
- (d) Adrian ffitch-ffitch was allowed a two-hour tea-break. He is the managing director's nephew;
- (e) Because he is the managing director's nephew, Adrian ffitch-ffitch was allowed a two-hour tea-break;
- (f) Adrian ffitch-ffitch is the managing director's nephew. He was therefore allowed a two-hour tea-break.
125. (a) Adrian ffitch-ffitch, who is the managing director's nephew, was not allowed a two-hour tea-break;
- (b) Adrian ffitch-ffitch was not allowed a two-hour tea-break, despite being the managing director's nephew;

- (c) Adrian ffitc-ffitch is the managing director's nephew, and he was not allowed a two-hour tea-break;
- (d) Adrian ffitc-ffitch was not allowed a two-hour tea-break. He is the managing director's nephew;
- (e) Although he is the managing director's nephew, Adrian ffitc-ffitch was not allowed a two-hour tea-break;
- (f) Adrian ffitc-ffitch is the managing director's nephew. Nevertheless, he was not allowed a two-hour tea-break.

Many of the sentences in (124) and (125) are potentially ambiguous. Nevertheless, it seems clear that all the sentences of each set share at least one sense in which they are synonymous. The status of synonymy in generative grammar has been raised to a position of increasing centrality and importance with the development of semantic considerations in grammar. In 1955, Chomsky regarded synonymy as "the most dubious part of semantic theory" (p. 142), and any appeal to it, specifically in determining phonemic distinctness, but also elsewhere in a grammar (p. 150), as "irrelevant", a "dangerous bypass" and "quite beside the point", (p. 149-50). Clearly, however, the pairs (commutation) test in phonemic theory is based not on synonymy, but heteronymy (though Chomsky asserts (p. 142) that "to know difference in meaning is to know synonymy"; I am not sure that this is logically entailed). I should say, nevertheless, that in the central argument which Chomsky was making in this early article, namely that meaning is irrelevant to judgements about sameness or difference of linguistic form, he was obviously correct. As Paul Garvin pointed out in the subsequent discussion (p. 153), different isolated occurrences of ambiguous forms are still ambiguous for the listener: they are not distributed among the various possible senses. For synonymy, on the other hand, I should have thought it was at least an empirically-valid condition that the utterances should be different in form, since different occurrences of the "same" form, even including those displaying free variation, are it seems to me only synonymous in a trivial and quite unhelpful sense. In arguing his case, however, Chomsky several times voices the opinion that the notion of synonymy is fraught with uncertainty and vagueness, and the reader is left with the clear conclusion that there is no place for it in grammatical theory.

By 1957, Chomsky was prepared to accept the idea that synonymous strings were derived by the application of a different set of transformations on the same kernel sentence. No formal basis is given to the notion of synonymy, however: the reader is left to infer that this is the case from the examples used.

Katz and Fodor 1963 and Katz and Postal 1964 take synonymy as one of the basic meaning relations which a semantic theory must account for:

"Let S be some sentoid, specified in terms of its semantically interpreted P-marked PM, and let C and C' be any two distinct constituents of S. Then...

- (D4) C and C' are synonymous on a reading with respect to PM and PM' if and only if the set of readings associated with the node labeled 'C' in PM and the set of readings associated with the node labeled 'C'' in PM' have at least one member in common; PM may equal PM'.
- (D5) C and C' are fully synonymous with respect to PM and PM' if and only if the set of readings associated with the node labeled 'C' in PM and the set of readings associated with the node labeled 'C'' in PM' are identical; PM may equal PM'. "

(Katz and Postal, op.cit:26 sq.)

In the immediately pre-Aspects model, these writers are assuming that syntactic synonymy is handled by transformations which are meaning-preserving, i.e. that at the level where semantic interpretation takes place - Deep Structure - there is no syntactic synonymy. The above statements for paraphrase and full paraphrase are therefore aimed at lexical synonymy. It should be stressed that Katz and Postal's interest in synonymy here is as a semantic phenomenon which a semantic theory must account for.

Chomsky 1965, however - in complete contradiction to the views he expressed ten years earlier - seems to regard synonymy as a heuristic device for discovering syntactic relatedness, even where no currently-available rules could handle the situation:

- "126. (a) John strikes me as pompous - I regard John as pompous  
(b) I liked the play - the play pleased me...

Clearly there is a meaning relation, approaching a variety of paraphrase, in these cases. It is not expressible in transformational terms, as is possible, for example, in these cases:

127. (a) John is easy for us to please - it is easy for us to please John;  
(b) It was yesterday that he came - he came yesterday

... It seems that beyond the notions of surface structure (such as "grammatical subject") and deep structure (such as "logical subject") there is some still more abstract notion of semantic function still unexplained."

(Chomsky 1965:162 sq.)

It was, of course, such considerations as these which led to the development of Fillmore's Case Grammar, but of significance for the present discussion

is the fact that Chomsky is using the evidence of synonymy (or at least near-synonymy, notions of Focus not having been introduced at this stage) for the existence of linguistic relationships.

This type of linguistic argumentation was expanded by George Lakoff, notably in his (1968c) paper, in which he argues for the deep identity of the sentences:

128. (a) Seymour cut the salami with a knife;

(b) Seymour used a knife to cut the salami,

by demonstrating that the structures underlying them are synonymous in various derived forms, as well as in the forms of (128). This represents at least the beginning of the apotheosis of the meaning-preservation hypothesis from its original weaker form: "transformations do not affect the meaning-elements and -relations of deep structure" (cf. Chomsky 1965:132), to its stronger form: "similarity (including identity) of meaning in surface structures represents (full or) partial identity in underlying structure; superficial differences of form therefore represent either underlying differences in meaning or derivational distinctions brought about by purely formal transformations". Or, to put it another way, superficial Ss which are synonymous must have identical semantic structure.

In his (1970) article, referred to above in the discussions of Focus, Chomsky himself uses this extended appeal to synonymy in an attempt to refute the work of the GS-ists. For example, he cites the phrases:

129. (a) John's uncle;

(b) the person who is the brother of John's mother or father or the husband of the sister of John's father or mother;

(c) the person who is the son of one of John's grandparents but is not his father, or the husband of a daughter of one of John's grandparents.

He then claims that although (129a - c) must have the same semantic representation, being paraphrases, the sentences Sa, Sb, Sc, obtained by inserting them respectively into the context:

130. Bill realized that the bank robber was --- ,

are not paraphrases; "it is easy to imagine conditions in which each might be true and the other two false", (p. 197 in the 1971 printing); "... people can perfectly well have contradictory beliefs, can correctly be said to fail to realize that p even though (in another sense) they know that p, to be aware that p but be unaware that q where p and q are different expressions of the same proposition, etc.," (*ibid.*). But surely the "ideal speaker-



hearer" would not make such mistakes? As a far from ideal speaker-hearer myself, I cannot conceive how any speaker could be said to "understand", "know the meaning of", etc., the phrase (129a), and yet fail to realize that it is synonymous with (129b), (though clearly its conditions of use would be very different). It might, of course, take a little while and a pencil and paper to work out the synonymy, but realize does not necessitate instantaneous comprehension. Lakoff (1971:282 sq.) deals with this argument of Chomsky's quite briefly. He points out that, even accepting Chomsky's assumptions, which actually have been argued and challenged in philosophical debate, it shows "only that truth-values of sentences depend in part on the particular phonological form in which semantic information is expressed". However, it does not constitute an argument against GS or for a theory incorporating DS, but indicates only that the correlation between semantic information and phonological form must be made in the grammar. I would add, moreover, that the alleged facts of (129) - (130) upon which Chomsky's argument is based would appear to have no place whatsoever in a competence grammar, since they arise out of mistakes of comprehension, which are the analytic counterpart (and therefore more unlikely to be accounted for in a grammar) of:

131. (a) Harold Wilson;

(b) the present Prime Minister of Great Britain,

again incorporated into the context (130), for example. McCawley (1970b: 250 sq.) points out similar facts about phonological form and truth-values particularly when synonyms are embedded in opaque contexts such as know, believe, think, etc., or below verbs such as say. In the first case, truth-value is unaffected by change of form, e.g. by alternating (129a) with (129b) in (132):

132. Max knows that ---- is a lecher.

In the second case, where say is followed by direct-speech, the truth-value is concerned precisely with the phonological form of the direct speech, and not with its meaning. Thus, if Max's actual words were "I saw John's uncle", the proposition formed by inserting (129b) into:

133. Max said, "I saw ----",

would be false, since the representation of direct speech requires fidelity of phonological form, not meaning, (e.g. the reference of John or uncle is not guaranteed).

The upshot of all this is that linguistic practice in all branches of TG has increasingly legitimized the device of arguing linguistic relationship

from synonymous sequences. In fact, judgements of synonymy seem to be challenging judgements of grammaticality as the major heuristic device of linguistic research. I therefore make no further apology in making use of synonymy to indicate identity of semantic structure (and partial synonymy to indicate partial identity).

Returning to the sentences of (124) and (125), it seems clear that all the sentences of the former share a sense in which Adrian's relationship with the managing director is regarded as the cause of his extended refreshment privileges. Similarly, in the latter, surprise is expressed that this relationship failed to secure those privileges. In each case, (a) is the NR, and (c) is the conjunctive source according to the Ross hypothesis. The existence of the four sentences remaining in each set, and others similarly synonymous, leads one necessarily to conclude either that there is an underlying relationship which should be expressed by identity of underlying structure (whatever its nature), or else that there is no such relationship, i.e. that (b), (d), (e) and (f) in each set are coincidentally synonymous (if such a thing is possible in any reasonable grammatical theory), or that the synonymy is only "pragmatically implied" etc., (and therefore outside grammar; cf. section 2.17). Obviously if the argument of underlying relationship can be justified, this constitutes a significant generalization and therefore leads to simplification of the grammar. Notice, though, that since (d) and (f) are sentence-sequences, only a grammar which allows for discourse can include all the synonyms involved.

My final point is that (a), (c) and (d), being the least specific as to propositional connection, are thereby potentially the most ambiguous of the six sequences. They all allow at least one further interpretation whereby the two propositions represent separate items of information which do not modulate each other. This is what makes it possible to argue that (a), (c) and (d) do not "really" bear causative, concessive or consequential modulation, but that these are "pragmatically understood", and somehow subjectively forced on to the real meaning. But I cannot see how the ambiguity evinced by (a), (c) and (d) is any different from "acceptable" ambiguity such as The shooting of the hunters was terrible. For example, does the ambiguity of:

134. Seeing that Hitler was mad, Von Stauffenberg attempted to  
blow him up,

(i.e. 'realising that...' vs. 'because...') fall within the province of "grammatical" ambiguity or "pragmatic" ambiguity? (If the notion of

"pragmatic ambiguity" is merely a straw man which nobody subscribes to, then of course my argument that the causative, concessive, etc. interpretations of (a), (c) and (d) should be accounted for in the grammar rather than in some pragmatic component, will receive no objection).

In Ch. V, however, I assume that "pragmatic" implications etc. are in fact S-grammar fudges for discourse relationships, which should be handled by transderivational constraints. I regard and-conjunction as multiply-ambiguous (as is NR relativization and sentence-sequencing, given the lack of overt sequence signals), and therefore the surface form of several different sequence markers, which also underlie the equivalent NRs and sentence-sequences.

### 3.253 Rs, lexicalization and logical notation

In Ch. IV, I present a form of semantic structure in which Rs occur as Ss embedded under Arguments. The conjunctive source for Rs, argued for by Thompson (see section 3.22), though without explicit formulation, is in fact based on the practice of propositional calculus, in which embedding does not occur. In fact, conjunction is the only form of propositional linkage in this notation. McCawley (1970a: 222 sqq.) points out that the logical notation leads <sup>to</sup> certain consequences which are undesirable in natural syntax. For example, he notes that the denial of a natural language proposition is normally only the denial of one of the elements in it, whereas the denial of a logical proposition is the denial of all the elements in it. As we have seen in the discussion of the notion of "speaker-hearer assumptions" in Thompson's paper (section 2.16), the conjunction analysis of Rs makes the basic assumption that the basic sense of Rs consists of the conjunction of (the semantic structure underlying) an NP and (the semantic structure underlying) a relative clause, i.e. that there is no modification of the latter by the former. Bach 1968 gives some pronominal examples clearly showing this to be incorrect, if we provide equivalents with Rs:

135. (a) I doubt if there is a man who will be that clever when he is fifty;

(b) The ugly child who grew into a beautiful woman was elected Miss World;

(c) I walked across the lake which had been filled in.

(135a) does not imply <sup>to</sup> I doubt if there is a man; (135b) cannot derive from the conjunct The ugly child was elected Miss World; (135c) does not really

claim that the speaker is the Messiah. On the contrary, all three sentences must be interpreted with their antecedents and relative clauses forming a single semantic complex.

Similarly, I claim (along with Bach 1968 and McCawley, *passim*) that lexical items (or at least nominals) have a semantic structure identical to R, i.e. one in which the antecedent is a generic element corresponding to the role with which each argument is marked. (They are not, however, pseudo-Rs since, not having a matrix S - as they are not full Ss, but phrases - the generic NP<sub>1</sub> cannot be hyponymic to the NP<sub>2</sub>, i.e. the matrix NP). Thus I suggest (in Ch. IV), that lexicographic definitions of lexical items actually represent this semantic structure, though they do not necessarily directly reflect it. To this, I can add two further observations: first, there is a clear paraphrase relationship in that all Ns have a corresponding R (or set of Rs) but not *vice-versa* (cf. Bierwisch and Kiefer 1969). The following examples are selected from Chambers Twentieth Century Dictionary (Macdonald 1972):

136. (a) garden ... a piece of ground on which flowers etc. are cultivated: a pleasant spot: a fertile region ...
- (b) hermit ... one who lives a solitary life ...
- (c) ditch ... a trench dug in the ground: any long narrow depression carrying water ...
- (d) niggard ... one who grudges to spend or give away ...
- (e) vampire ... a dead man that leaves his grave to prey upon the living;
- (f) patriot ... one who truly, or ostentatiously and injudiciously, loves and serves his fatherland ...
- (g) monocoque ... a fuselage or nacelle in which all, or nearly all, structural loads are carried by the skin: a motor-vehicle structure in which body and chassis are in one and share stresses: the hull of a boat made in one piece ...
- (h) sexton ... an officer who rings a church bell, attends the clergyman, digs graves etc ...
- (i) urethra ... the canal by which urine is discharged from the bladder.

These are pseudo-R only if one takes the entry-noun as the NP<sub>2</sub> of the matrix (e.g. one who lives a solitary life is a hermit, which could be taken to be a focussed form of a hermit lives a solitary life).

The second observation concerns Anaphoric Islands (Postal 1969b), which are lexical items whose underlying semantic structure cannot contain the antecedent for any anaphoric element outside that structure, e.g.

137. (a) The girl with blond hair<sub>i</sub> got it<sub>i</sub> caught in the fan.

(b) <sup>✕</sup>The blonde got it caught in the fan.

The lexical item blonde presumably contains in its underlying structure the specifications 'girl' and 'having blond hair', but the latter cannot serve as the antecedent to a pronoun in (137b) whereas it can in (137a). Exceptions do apparently exist, however. Tic Douloureux 1971 provides examples of such exceptions, noting in passing (a not altogether inappropriate word) that J.R. Ross too has discovered exceptions involving (partly-)homophonous derivatives. Among the more printable of Tic Douloureux's examples is

138. When little Johnny threw up, was there any pencil-eraser in it?

My own contribution to this debate has to do with nouns and relatives. Note the following examples:

139. (a) Aubrey is one who acts (for a living), which he never wanted to  $\left\{ \begin{array}{l} \text{be} \\ \text{do} \end{array} \right\}$  when he was a lad.

(b) Aubrey is an actor, which he never wanted to  $\left\{ \begin{array}{l} \text{be} \\ \text{do} \end{array} \right\}$  when he was a lad.

140. (a) What do you do? I'm  $\left\{ \begin{array}{l} \text{✕ a fool, ✕ a Conservative} \\ \text{an actor, a milkman} \end{array} \right\}$

(b) What are you? I'm  $\left\{ \begin{array}{l} \text{a fool, a Conservative} \\ \text{an actor, a milkman} \end{array} \right\}$

Evidently, there is some dialectal variation in the acceptability of these examples. Some speakers reject (139b) with do, though accepting (140a). Speakers who accept both will usually also accept (though perhaps only marginally):

141. (a) I'm an actor, that's what I do,

though even they will reject:

(b) <sup>✕</sup>What I do is an actor.

G. Lakoff and Ross's (1972) suggestion for "selective tariffs on entry to anaphoric islands", (i.e. that morphological derivatives are less insular than forms which are completely unrelated morphologically), referred to by Tic Douloureux, is backed up by actor but not by milkman, (cf. also Watt 1973, who calls them "penetrable reefs"). Another seeming infringement of Postal's proposal, though not connected directly with relative clauses, concerns the behaviour of stress. Using one of Postal's examples, we find that the placement of stress is exactly the same after an anaphoric island

as it is after a non-island (stress is indicated by italics):

142. (a) Max's parents are dead, but my parents are alive

(b) Max is an orphan, but my parents are alive.

In both cases, parents has reduced stress: "legitimately" in (142a), since it is repeated; mysteriously in (142b), since it is apparently a first-mention. In both cases, alive bears contrastive stress: "legitimately" in (142a), since it contrasts with dead; mysteriously in (142b), since it is there apparently non-contrastive. But that is not all: we still have to

143. ?<sup>x</sup>Max is a  $\left\{ \begin{array}{l} \text{vegetarian} \\ \text{roadsweeper} \\ \text{homosexual} \end{array} \right\}$ , but my parents are alive. (143):

143. ?<sup>x</sup>Max is a  $\left\{ \begin{array}{l} \text{vegetarian} \\ \text{roadsweeper} \\ \text{homosexual} \end{array} \right\}$ , but my parents are alive.

(To be acceptable, (143) would have to be contextualised in some rather outlandish and desperate way, cf. my remarks in section 2.15).

It seems reasonable to postulate that, since such pairs as (139a) and (b) are more or less synonymous, and furthermore behave similarly in certain structural respects, they should be regarded as derivationally related. The relative construction is not only the more explicit member of the pair, it also provides the necessary alternative antecedents for be or do. Examples (140a) and (b) show that this alternation can only occur with lexical items whose underlying relative clause contains a non-stative predicate. Thus, as a response to the question in (140a), (144) would also be inappropriate:

144. <sup>x</sup>I am one who is  $\left\{ \begin{array}{l} \text{a fool/a Conservative,} \\ \text{foolish} \end{array} \right.$

though a conservationist would be perfectly acceptable, since that has an underlying non-stative: 'one who conserves X/campaigns for the conservation of X' (approximately). Finally, (142a) and (b) show striking similarity to each other, although I would want to argue that the form underlying (142b) is not (142a), but (145):

145. Max is one whose parents are dead ...

One point which reflects the direction of this discussion is the similarity between the subtrees for the two types of structure (that is for restrictive relative clauses and prelexical Arguments); indeed one can go further and call it identity. Both constructions are achieved using the same rules. What then is the difference? A very simple one, in fact: merely that the latter have lexical items associated with certain configurations, while the former have not. All this means is that certain configurations of semantic material recur to such an extent that a lexical replacement becomes an

obvious economy. This is somewhat similar to Paul Schachter's point, mentioned earlier, that relative clauses "provide names for, or ways of designating, the multitude of entities that people wish to talk about, but for which there is no established single-noun designation (or, perhaps, where the people do not know, or do not choose to use, such a designation)" (op.cit:32). However, I would argue somewhat the reverse, namely that only the more common semantic configurations (including that underlying the relative clause) have associated lexical items, which function merely as labels.

These comments are really diachronic in nature, and indeed the best evidence for them comes from semantic change (see, for example, Werth 1974a, in which I argue that true semantic change, (as opposed to what I call "lexical shift", when an already existing semantic structure simply acquires a new lexical realization), consists of operations of role-raising and subtree-loss and -gain on semantic structures of the type developed in Ch. IV). However, synchronically too, I would claim such structures are learnt as the "meanings" of lexical items (more accurately, the meanings with which lexical items may be associated). Similarly, as the discussion of my 1974a paper indicates, synchronic dialectal differences in semantic structure or lexicalization can also be accounted for with this machinery.

In Ch. IV, I shall outline a theory of semantic structure which will in fact represent the meanings of lexical items such as (136) as restrictive relative clauses which are subtrees in much larger structures, for the most part. These larger structures, I will suggest, are equivalent to the semantic field within which a particular (meaning associated with a) lexical item falls.

CHAPTER IV

LEXICALIZATION AND DERIVED STRUCTURES

IN A GENERATIVE-SEMANTIC MODEL



## CHAPTER IV: LEXICALIZATION AND DERIVED STRUCTURES

## IN A GENERATIVE-SEMANTIC MODEL

4.1 Assumptions4.11 Generative semantics

George Lakoff (1971:232 sqq.) sets out in schematic form what he calls the "basic theory" (using a form of argumentation which resembles - and perhaps even parodies - that of Chomsky's (1970) discussion of what he calls the "standard theory"):

1. (a)  $P_1, \dots, P_n$ 

where  $P_n$  is a surface structure, each  $P$  and its immediate successor are related by a transformational rule, and there is no  $P$  preceding  $P_1$ .  $P_1 \dots P_n$  therefore represents a sequence of phrase-markers in a single derivation (i.e. of one  $S$ ). We may note, in passing, that no provision is made for sequences of  $S$ s in a discourse (though Lakoff does mention the possibility on p.235 fn). However, more crucial to the present section is the lack of specification of  $P_1$ . By contrast, the well-known Aspects model has a fairly well-specified initial  $P$ -marker, namely the product of the categorial rules of the base. (I leave aside the question of the lexical component of the Aspects base, since it is at least arguable - as Lakoff in fact does - that the lexical insertion rules are transformations and therefore operate upon  $P_1$  rather than contributing to its formation).

Lakoff calls (1a) a syntactic structure, and defines the semantic representation (SR) of a  $S$  as:

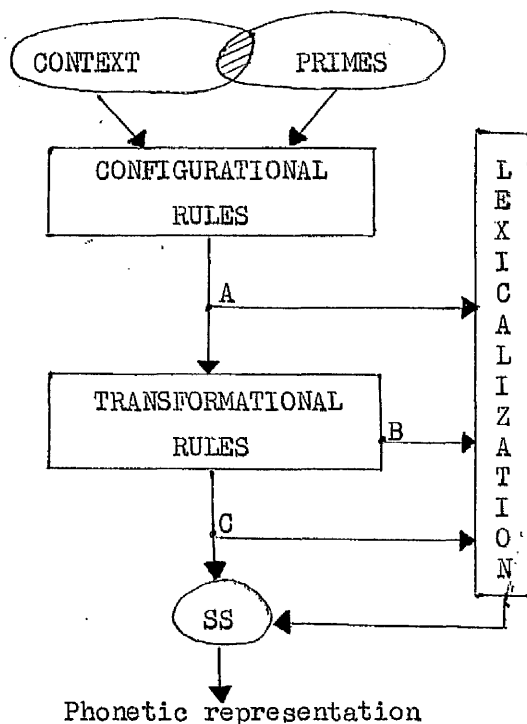
1. (b)  $SR = (P_1, PR, Top, F, \dots)$ ,

"where  $PR$  is a conjunction of presuppositions,  $Top$  is an indication of the 'topic' of a sentence, and  $F$  is the indication of the Focus of a sentence" (p.234). He suggests that  $PR$ s are of the same form as  $P$ s (labelled trees) and structurally independent, as (b) implies.  $Top$  and  $F$  also may be taken as structurally independent. However, as I have shown in Ch. II,  $PR$ ,  $Top$  and  $F$  are all naturally definable in terms of context. This does not, of course, invalidate Lakoff's schema: it merely shows that the provenance of  $P_1$  is different from that of the other terms stated in Lakoff's ordered  $n$ -tuple, and indeed it seems likely that any other terms which may be stated at some future time will also be contextual (in the wider or narrower sense) in nature.

The form of the basic model which I will assume, therefore, will specify the constitution of  $P_1$ , and the other components of  $SR$  will be

provided as functions of the context:

2.



Context, as we have seen (Ch. II), tends to include knowledge which is specific to the culture, the language, and the participants; the primes, on the other hand, are claimed to be features of universal semantic knowledge: I shall discuss them presently (section 4.12). The area of overlap symbolizes the possibility of transition from contextual feature to prime (and perhaps vice-versa), e.g. in semantic change, where an erstwhile connotation can become a feature of denotation (e.g. such "social" terms as villain, noble, kind, churl, peasant, the last perhaps illustrating a transitional stage of the process). I shall say no more about this here, but cf. Werth 1974a, F'coming b. The primes are the substantive universals of the theory (cf. Chomsky 1965:28 etc.), which therefore "asserts that each output of this component consists of elements that are characterized in terms of some [finite] number of fixed, universal [semantic] features, each of which has a substantive [extralinguistic] characterization independent of any particular language" (ibid.). The words in square brackets are mine, and replace "small", "phonetic", and "acoustic-articulatory", respectively. On the fixity of these features, I reserve my judgement: arguments about whether semantic primes constitute an open or a closed set seem futile at the present imperfect state of our knowledge. Wierzbicka's rather idiosyncratic study of the subject (1972), however, plumps for a small, fixed set (e.g. pp.15-16).

Whether or not the set of semantic primes is open or closed, small or large, it seems clear that they do not occur in "unstructured heaps" (cf. Weinreich's (1966) criticisms of Katz and Fodor 1963). Wierzbicka's combinations of semantic primitives into more complex definitions, for example, take very complex syntactic forms, e.g.:

3. (a) X feels afraid = X feels as one does when one thinks that something bad can happen to one which one cannot cause not to happen and which one diswants to happen, (p.63);
- (b) Congratulations! = Knowing that you have caused something good to happen to you, assuming that you are pleased because of it, wanting to cause you to know that I am pleased too, I say: I am pleased because of it too, (p.141).

Clearly, such expressions as these, whatever their semantic reality, have structures identical with those of sentences. But whereas syntactic structures are configurations of non-meaningful categories filled in with lexical items which can be viewed either as having meanings, or else as being interpretable, semantic structures are configurations of (meaningful) semantic elements, directly representing meanings. This remains true whatever notation is chosen to represent semantic structures, whether it is a natural language one (as in Wierzbicka or Gordon and Lakoff) or a logical one (as in G. Lakoff or McCawley, *passim*).

If the semantic elements are structured, then those structures must in fact be statable. In several places (e.g. 1968b), McCawley has stated that semantic representations must be equivalent to labelled trees, just like syntactic structures, and if this is so (as I believe it is), then these trees must, just like syntactic structures, be generable in terms of explicit and formal rules, which might be both of the highly restricted constituent-structure type and of the freer (prelexical) transformational type. However, I have nowhere seen any rules of the former type suggested, (with the possible exception of Fillmore, e.g. 1968, who is, however, not writing in a GS framework; the rules I shall be suggesting, though, do owe a great deal to his work).

In section 4.12, I shall examine the nature of semantic notation, and the question of semantic primes. In section 4.13, I shall present some of the assumptions which underlie the configurational rules I will use. Later in Ch. IV, I will present these and some of the basic transformational rules I have found necessary, and discuss the question of lexicalization.

#### 4.12 The nature of semantic notation

In this section, I want to briefly consider the following questions:

- (i) what is a semantic notation a notation of?
- (ii) what is the nature of semantic primes?

I shall also discuss some criticisms of GS made by Bartsch and Vennemann 1972, which are the farthest-ranging criticisms of the model I have encountered so far. I include them here because they concern the question of representing meaning with a logical notation.

A criticism of GS that has been made (e.g. Gallagher 1970) is that it assumes that the "deep" representations of meaning which it uses are (i) equivalent to, or even actually comprising, meaning itself, and (ii) decompositions into "the" basic elements of meaning (comparable, for example, to the DF's of phonology). In response to the first of these (which asserts the extreme view that a semantic notation is the meaning it represents), I wish merely to point out that there is a clear distinction which must be drawn between any representation and the "reality" it represents. In the same way, nobody would now argue, I trust, that a grammar directly models the cognitive processes underlying language; the most that can be claimed is that a grammar is equivalent to such processes, or perhaps that a grammar is isomorphous with them. (The former would be Chomsky's strongest claim now for TG; the latter might be Postal's claim - in (1972) - for GS). Similarly, nobody would argue, surely, that musical notation is music, or that it is the meaning of a musical piece, or its structure. A notation simply represents some aspect of the total reality in focus; thus, different notations can correspond to different aspects of the "same" reality.

The notation most widely used by the proponents of GS is the predicate calculus, which is a system designed to express rules of deduction from one statement to another in terms of a small set of relationships (e.g.  $\rightarrow$  or  $\supset$  for 'if...then',  $=$  'is the same as',  $\leftrightarrow$  or  $\equiv$  'if and only if' etc.). Clearly, then, the well-formed formulae (wffs) of the predicate calculus include only representations of that information which is required for purposes of inference, viz. predicates (P,R), variables (x,y,z), operators ( $\&$  or  $\wedge$  'and',  $\vee$  'or',  $\sim$  'not') and quantifiers ( $\forall$  'for all',  $\exists$  'there exists at least one' etc.). Of these, the predicates and variables (or arguments), which roughly correspond to verbs

and nouns in natural language, are normally, in philosophical writing, contentless, i.e. the main interest in the exercise lies in investigating the properties of the operators and quantifiers, while keeping the predicates and arguments constant and empty.

A weaker form of the predicate calculus investigates the truth-functions of the propositions in it. However, the truth or falsity of such propositions is analytic truth or falsity, i.e. that which arises out of the form and relationships of the formulae, while again keeping their content trivial or empty. Therefore, the truth of propositions having reference only in the real universe, or only in some possible worlds, is not investigated in traditional truth-functional logic. (Analytic sentences, by the way, are true or false in all possible worlds, since their truth-value depends upon their linguistic properties). Also, propositions containing relative terms (e.g. heavy) have no part in traditional truth-functional logic, since their use depends upon a standard (of heaviness etc.) which holds independently and outside of the proposition containing the relative term. (Actually, this last proviso is probably true only of modern logic. The Aristotelian syllogistic often seems to use relative terms as though they were absolute, e.g.:

4. All Greeks are tall.

Papadopoulos is a Greek.

∴ Papadopoulos is tall).

However, a distinction was made between major premisses which were true by virtue of their internal meaning (e.g. All women are female), and those which require empirical verification, as in (4).

The goal of these logics, then, is to explicate the internal properties of their wffs. Thus a proposition like:

5.  $(\forall x) P(x) \& Q(x) \rightarrow (\forall y) P(y) \& Q(y) \leftrightarrow y \in x$

holds, whatever the content of P, Q, x and y (with the provisos mentioned in the previous paragraph): 'for all x, if x is P and x is Q, then for all y, y is P and y is Q, if and only if y is an x'. (5) is really a statement of set-inclusion: 'if y is a member of x, then whatever holds for x automatically holds for y'.

Such statements are obviously not statements of meaning, nor are they meant to be: they are, rather, logical inferences from logical

relationships. As such, they appear to form a proper part of the universal conditions governing statements of meaning, but they could not be said to represent any extralinguistic facts. In philosophical logic, this is said to be the province of a model theory: "Model Theory is the study of the relations between languages and the world, or more precisely between formal languages and the interpretations of formal languages". (Crossley et al. 1972:20). The statements of Model Theory consist of stipulations whose satisfaction guarantees the truth of a particular predicate calculus formula, given interpretations for its predicates and variables. Crossley et al., (op.cit:12sq.) gives an example which we may examine:

"Consider the following sentences of PC:

6. (a)  $\forall x \forall y (P(x,y) \rightarrow P(x,y))$ ,  
 (b)  $((P(x,y) \& P(y,z)) \rightarrow P(x,z))$ ,  
 (c)  $\forall y \exists x P(x,y)$ .

If we interpret P as the ancestor relation over the domain of people, both living and dead, [(a)], [(b)] and [(c)] are all true. With this interpretation they become

- (a') if x is an ancestor of y then x is an ancestor of y, for any x and y,  
 (b') if x is an ancestor of y, and y is an ancestor of z, then x is an ancestor of z,  
 (c') everybody has an ancestor.

Also, if we interpret P as  $>$  (greater than) over the natural numbers (1,2,3,...) or as  $<$  over the integers (...,-2,-1,0,1,2,...) these are all true sentences as well. But if P is interpreted as  $<$  over the natural numbers, then [(c)] is false. Also, if P is interpreted as 'the father of' over the domain of people, [(b)] is false. However, [(a)] will remain true no matter what interpretation one gives to P.(...)

An interpretation of the formal system PC is a structure  $\mathcal{A} = \langle U, R \rangle$ , where U is a set (which must not be empty) the members of which are: a,  $a_1$ ,  $a_{11}$ , ..., and R is a relation on U.(...)

Now let members of U be assigned to all the individual variables of PC in such a way that not more than one member of U is assigned to each variable of PC.  $\phi$  [i.e. a formula of PC] is said to be satisfied in  $\mathcal{A}$  by an assignment of  $a_1$  to x,  $a_2$  to y, ... (where x, y, ... are the free variables in  $\phi$ ) if the relation over U corresponding to  $\phi$  (that is, when each P in  $\phi$  is replaced by R) holds between the elements assigned to the free variables of  $\phi$ . In this case we write

$$\mathcal{A} \models \phi[a_1, \dots],$$

where the list in the square brackets includes all the assignments to the free variables in  $\phi$ ."

(The meaning of this formula is: ' $\phi[a_1, \dots]$  is true in  $\mathcal{A}$ ').

All that this machinery does, in fact, is to state that an interpretation of a predicate-calculus formula is valid only when the relationship holding between the elements of the interpretation is the same as the relationship holding between the elements of the formula. Somewhat cynically, we might observe that it merely replaces one formula with another equivalent one. But it assumes that the user of the model theory is correctly able to determine that the relationship 'is ancestor' of ' over the domain of all people is the same as (6), whereas that of 'is father of' over all people is not the same as (6). In other words, the explicitness we require of a linguistic theory is not present here. The point that needs explicit formulation is the distinction between the relationships of ancestry and fatherhood. But this is relegated to a condition (i.e. an item assumed to be given) on a rule. In fact, what Model Theory does is to show whether any given interpretation of a wff of predicate calculus is true or not; but to do this, it needs to assume that a great deal of the meaning of the interpretation is given:

"we can write down a fairly obvious set of sentences true in [a] structure, and then using model-theoretic methods show that from these sentences everything true in this structure can be proved. In this way we get a practical method for finding whether a sentence is true in the structure or not",

(Crossley et al:30).

Thus, all that Model Theory does is to guarantee that a particular sentence is a token of some logical formula, given that its semantic relations and arguments are set-included in those of the formula. (cf. Potts 1973, and Jardine and Jardine 1973 for other criticisms of Model Theory as a theory of meaning).

It would appear, therefore, that the value of Model Theory as a theory of meaning is highly limited. Furthermore, it would appear to the linguist that, with one possible exception, modern philosophy as yet contains no theory of meaning worthy of the name, and it is against this philosophical vacuum that linguistics must attempt semantic hypothesis. The possible exception to this generalisation is the theory of speech-acts (e.g. Searle 1969), which Searle claims successfully makes the connection between a semantic representation and the "facts of reality":

"a person's knowledge of the meaning of sentences consists in large part in his knowledge of how to use sentences to make statements, ask questions, give orders, make requests, make promises, warnings etc., and to understand other people when they use sentences for such purposes. (...) The speaker who utters a sentence and means it literally utters it in accordance with certain semantic rules and with the intention of

invoking those rules to render his utterance the performance of a certain speech-act. (...) Saying something and meaning it is essentially a matter of saying it with the intention to produce certain effects on the hearer. And these effects are determined by the rules that attach to the sentence that is uttered. (...) Any attempt to account for the meaning of sentences must take into account their role in communication, in the performance of speech-acts, because an essential part of the meaning of any sentence is its potential for being used to perform a speech-act", (Searle 1972:22sq.).

For Searle, then, in the direct tradition of Wittgenstein and J. L. Austin, a theory of meaning is a theory of communicative use. It seems to me that this is undoubtedly part of a semantic theory: I would characterize this as belonging to the external meaning of an utterance, by which I mean the relationship between the internal meaning of the utterance and its situational context. The conditions of use of an utterance are clearly determined not only by the intention of the speaker, but also by the relationship of the participants, and the topic, function and setting of the utterance (cf. section 2.1). G. Lakoff, McCawley and the GS-ists (and, of course, Katz and the interpretivists) have been attempting, on the other hand, to characterize the internal meaning of sentences, also including their presuppositions. (However, the two types of meaning - internal and external - are not in fact separate, as my own approach will show).

Any reasonable theory of meaning, therefore, must show that it connects up with the real world - otherwise, as Searle (1972:22) points out, it could be a theory of numerals, piles of stones, old cars, strings of symbols, anything whatever. In other words, a theory of meaning is a theory involving the interfaces between meaning and externals. The three main practical subject-areas where these interfaces occur are: philosophy, psychology and sociology. For the first, as we have seen, we can look at truth-values, logical inferences etc. (and perhaps belief-systems, possible worlds, etc., if philosophy is defined to include them); there are also philosophical implications to the other two subject-areas. For the second, we must investigate the cognitive processes in general, but specifically conceptual behaviour. For the third, as we have seen, there is much to be said about the use-conditions for language, interpersonal interaction, and sociolinguistic variation in general. I shall assume in the model I am using that these sociolinguistic considerations are specified contextually. For the present, I want to examine the question of conceptual items.



I consider the question of conceptual items to be ultimately the same as the question of semantic primes, although neither psychology nor linguistics is perhaps very close to an actual identification of these elements.

Traditionally, the term "concept" has been used for 'that which a word means', 'the mental image, or the like, which a word evokes' etc. These uses of the term have rightly been castigated as hopelessly vague and based on a formless notion of "mind". Furthermore, they do not analyse these entities below the level of the word, and in general they correspond to nothing more than 'the meaning of a word', thus begging all the more essential questions which are raised by the study of meaning. Most earlier psychological studies of concepts suffered from the same limitations, as did some later ones (Bourne 1966 cites Archer 1964 as an extreme case of identifying words with concepts). However, Bruner et al. (1956) distinguish between concepts and attributes:

"The working definition of a concept is the network of inferences that are or may be set into play by an act of categorization... We have found it more meaningful to regard a concept as a network of sign-significate inferences by which one goes beyond a set of observed properties ... to the class identity ... and thence to additional inferences about other unobserved properties of the object or event", (op.cit:244).

"An attribute, in brief, is any discriminable feature of an event that is susceptible of some discriminable variation from event to event ... When we say that any attribute may vary, we imply that any attribute represents a dimension along which one may specify values", (op.cit:26).

Furthermore, they classify concepts according to how they organize the attributes of which they are made up: they may be conjunctive, disjunctive, or relational. Referring to a series of shapes, they give examples of each: respectively, (i) "all cards with one red figure", (ii) "all cards with two figures and/or with circles", (iii) "all cards possessing the same number of figures and borders". Thus, (i) conjoins one with redness, (ii) pairs disjunctively the attributes two and circle, (iii) specifies some relationship (here, numerical identity) between different attributes. Each of the descriptions (i) - (iii) is a concept (see p.41, op.cit.), although the "working definition" of concept quoted above (which occurs in the book's overview, and may therefore be regarded as a conclusion) seems to take it as a set of recognition and classification strategies, rather than simply a group of attributes. However, if the latter is the case,

Bruner et al. is an important step in dissociating the concept (or semantic structure, in such a case) from the word. What these authors call the "attribute" is clearly something like the item we have been calling the "semantic prime", although they are, in fact, very uncritical of the notion: attributes are either taken for granted, or held constant while "concepts" (or more accurately, acts of concept-attainment) are being examined. Furthermore, the three "modes of combination" are not investigated further: perhaps not surprisingly, in that pre-syntactic era. What is notable, though, is the lack of impact which this important work has enjoyed in recent linguistics: at first, because it did not mesh in with the early TG view that semantics had no place in theories of grammar, and later, because the theoretical presuppositions of Katz and his associates precluded them from regarding their semantic features as cognitive realities of any sort (though Katz and Fodor 1963 describe them as "atomic concepts" (see Fodor and Katz 1964:496)). Katzian semantics also regards the word as a semantic unit, so that semantic features are somehow sub-verbal (though they must be semantic substantive universals, presumably: Katz 1970 talks of a "concept store" which is input to the dictionary component of his model). However, even if, as Peterson 1973:37 sq. avers, Katz's features are psychological concepts, the fact remains that Bruner et al. 1956 is unacknowledged in most TG literature. In fact, Katz 1972:38 sq. explicitly dissociates the term concept from any psychological construct: "concepts are abstract entities ... They are not ... elements in the process of thinking, but rather the objective content of thought processes, which is 'capable of being the common property of several thinkers'." I am not at all sure whether this distinction has any real substance, but it at least indicates that Katz believes there to be a difference between semantic concepts and psychological ones.

An example from M. Lewis 1936, quoted by Werner and Kaplan (1963), seems to confirm that concept acquisition in early language development proceeds by the gradual refining of sets of attributes. (7a) gives the stages and ages at which a child acquired a set of animal-words. (7b) provides, in simple conjunctive terms, what appears to be the content of each word at its different significant stages. The so-called "concepts" (or "attributes" in Bruner et al.'s terms) in (7b) are all themselves, of course, relatively complex. I will discuss this problem presently.

Notice, though, that the child apparently entertains and rejects hypotheses about the semantic scope appropriate to a word: at one time, /gogi/ apparently means a small animal of indeterminate kind (and excluding cats and cows!) while /hosh/ means a large animal.

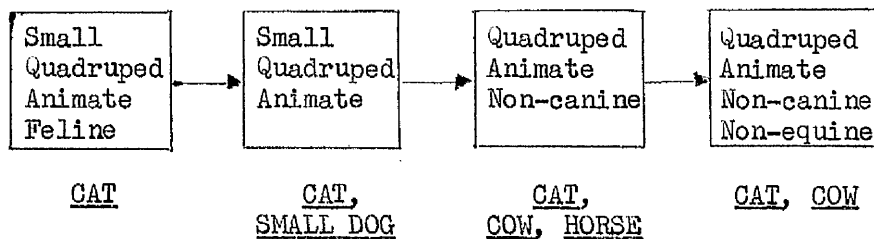
7. (a) Development of a child's animal-vocabulary:

AGE	Cat	Cow	Horse	Large dog	Small dog	Toy dog
1-9, 11	ti:				ti:	
1-10, 18	ti:					
1-11, 1						gogi
1-11, 2					gogi	
1-11, 24			ti:			
1-11, 25			hosh			
1-11, 26			(ti:)			
1-11, 27	pushi					
2-0, 10				hosh		
2-0, 20		muka		gogi		
Vocab. at end of period	pushi	muka	hosh	gogi (bigi)	gogi	gogi
"Adult" equivalent	pussy	moo-cow	horse	big doggie	doggie	doggie

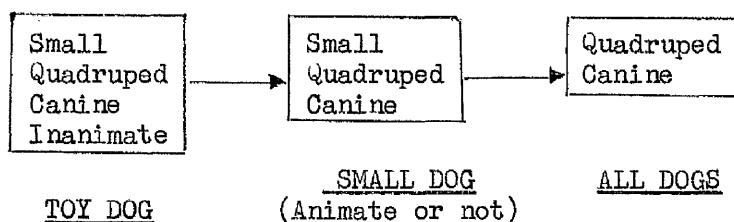
- After Werner and Kaplan (1963:117), originally from M. Lewis (1936:216).

(b) "Concepts" involved:

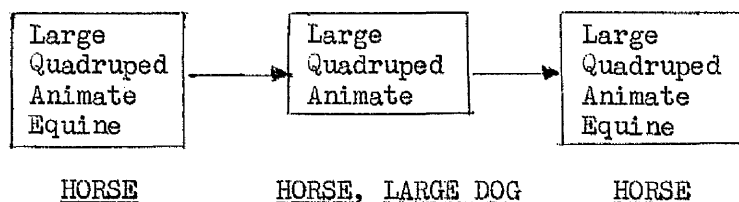
(i) /ti:/ (= 'animal?')



(ii) /gogi/ (= 'dog')



(iii) /hosh/ (= 'large animal' -- 'horse')



There seems to be some psychological evidence for the existence of semantic primes of some kind, therefore. (And see Bourne 1966 for a useful survey of theories of conceptual behaviour. He also makes a suggestive comparison between conceptual behaviour and linguistic behaviour:

"Attributes are the particular, usually point-at-able, qualities of things; words are their signs or labels. A conceptual rule is a vehicle for generating sensible stimulus groupings, given a set of attributes; likewise grammatical rules generate a meaningful ordering of words... There is no implication here of an identity of linguistic and conceptual systems", (op.cit.:107)).

If semantic primes do have psychological counterparts, (and space prevents me from further investigation in the present work), then we may bear in mind Arnold Zwicky's words (1972:105): "It is time to move from questions of generative power to questions of simplicity within a descriptive framework, and to inform this investigation with considerations of psychological reality".

Thus, all else being equal, "we should like to accept the least 'powerful' theory that is empirically adequate", (Chomsky 1965:62). Much research in recent years has been devoted to the task of restraining the power of transformational grammar, in order to characterize all and only natural human languages, and to distinguish them naturally from all other possible outputs of an unrestrained TG. These restrictions may be internal (such as self-consistency, isomorphism, economy) or external (e.g. evidence

from psychology, or sociology, or a theory of situation). Thus a theory of language constrained by such external evidence would, all else being equal, be less powerful, and therefore more adequate, than one not so constrained.

I shall henceforth assume that my semantic primes are equivalent to (represent) cognitive primes (or at least structured clusters of them), or "concepts" (although the elements I have in mind - in both senses - would be more like Bruner et al. or Bourne's "attributes" than their "concepts"). However, the question of whether these are cognitive elements or theoretical constructs is, at least at the level of descriptive adequacy, which is all that the present study would claim, quite unimportant to the basic thesis, set out in subsequent sections.

Bartsch and Vennemann (1972:10-28) make a series of wide-ranging and potentially damaging criticisms of GS based mainly on the fairly recent work of George Lakoff (especially 1972a) and James McCawley (especially 1970a). However, their potency is vitiated firstly by their false notions about the aims and notation of GS, and secondly by their misplaced faith in the capability of a conventional logical notation (backed up with Model Theory) to provide a semantic representation of natural language.

Their basic criticism is that the generative semanticists admit "as arguments of predicates sentences indiscriminately with variables and constants for individuals", (p.14). Because of this, they claim that the formulae of a GS notation are in principle impossible to interpret, for the reason that the S formative stands for "several semantically radically different structures". This would make it impossible to formulate any single rule of interpretation for S.

It may with some justice be remarked that one of the great weaknesses of logical notation as applied to natural language is its handling of embedding, which in most varieties of notation requires a clumsy system of bound variables and bracketing. To give an extreme example, in Cresswell's notation (Cresswell 1973:164), the sentence:

8. (a) John and Arabella run and jump,  
receives the logical deep structure:

(b)  $\langle\langle \lambda, y_{\langle 0,1 \rangle}, \langle\langle \lambda, x_{\langle 0,0,0 \rangle}, \langle\langle \lambda, x_{\langle 0,1 \rangle}, \langle\langle \lambda, y_{\langle 0,\langle 0,1 \rangle} \rangle, \langle \text{John}, \langle \lambda, x_{\langle 0,\langle 0,1 \rangle} \rangle, \langle\langle x_{\langle 0,\langle 0,1 \rangle}, x_{\langle 0,1 \rangle} \rangle, x_{\langle 0,0,0 \rangle}, \langle y_{\langle 0,\langle 0,1 \rangle}, y_{\langle 0,1 \rangle} \rangle \rangle \rangle, \text{and} \langle\langle x_{\langle 0,\langle 0,1 \rangle}, x_{\langle 0,1 \rangle} \rangle, x_{\langle 0,0,0 \rangle}, \langle y_{\langle 0,\langle 0,1 \rangle}, y_{\langle 0,1 \rangle} \rangle \rangle \rangle, \text{Arabella} \rangle, \text{run} \rangle \text{and} \rangle, \text{jump} \rangle.$

As Cresswell himself remarks, this "is a monster and would need to be extraordinarily well motivated to be the deep structure of anything". We might add that this is not even a grammatically complex sentence; Cresswell appears satisfied with notations for complex structures of not much less involvedness, e.g.

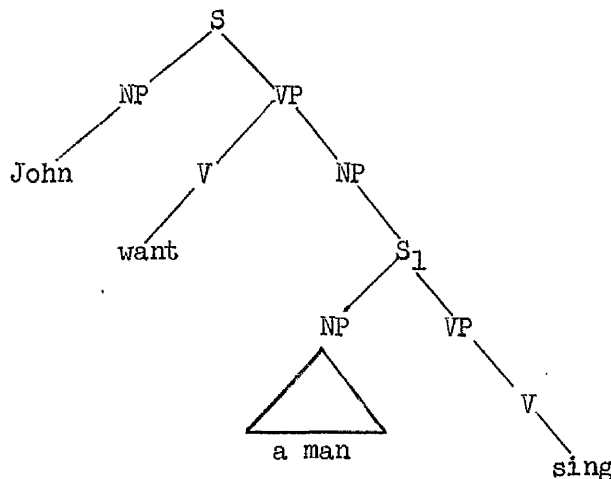
9. (a) John wants a man to sing,  
in its particularized sense, has the logical deep structure, according to Cresswell:

(b)  $\langle \text{John}, \langle \lambda, x_{\langle o, \langle o, 1 \rangle} \rangle, \langle \text{wants}, \langle \lambda, x_{\langle o, 1, 1 \rangle} \rangle, \langle \text{a, man}, \langle \lambda, z_1, \langle x_{\langle o, \langle o, 1 \rangle} \rangle, \langle \lambda, x_1, \langle \langle \lambda, y_1, \langle x_{\langle o, 1, 1 \rangle}, x_1, y_1 \rangle \rangle} \rangle, \langle \text{inf}, \langle \langle \text{to, sing} \rangle, z_1 \rangle \rangle \rangle \rangle \rangle \rangle$ , (op.cit:170).

He makes use of a process called  $\lambda$ -conversion which simplifies (9b) to a "shallow structure" more directly related to (9a), the "surface structure", (his debt to linguistic terminology is obvious). This functions rather like a deletion-transformation, presumably, pruning the form of the structure, but leaving its interpretability intact.

The deep structure (9b) may be fully specific semantically (excluding contextual information) - and Cresswell is very well aware of much recent work in linguistics - but it is not, of course, very much like the syntactic structure which is conventionally assigned to such a sentence:

9. (c)



in which an S underlies a man to sing, and the surface form is derived via a raising operation. However, it should be said immediately that the conventional tree (9c) is not adequate to capture the various interpretations of (9a); it is adequate only in a model which downgrades semantic information at the categorial level. Thus apart from the two senses which

Cresswell accounts for, the particularizing one of (9b), and the stipulative sense in which any object will satisfy John's requirements, provided that it is a man, there are various possibilities in which a man to sing is interpreted as a single unit, functioning as the object of John's desire. This gives the following senses:

- 9. (d) John wants someone to sing, namely a certain man;
- (e) John wants someone to sing, who must be a man;
- (f) John wants something, namely a certain man to sing;
- (g) John wants something, namely someone who must be a man to sing.

Relating these to (9c), we can immediately see that the ambiguities reside in the embedded S constituent, which covers the four different senses of the complements of want in (9d-g). It could, of course, be specified to give the necessary different complex structures expressing (9d-g), but as a structure requiring a semantic interpretation, the constituent S would still (and indeed a fortiori), fail to meet Bartsch and Vennemann's criticism mentioned above. But, and this is my point, Bartsch and Vennemann's criticism only holds if S is taken to be an argument of the same kind as (x,y), i.e. as a variable whose meaning is separately defined for each structure, and which is a simple NP in all the examples given. But, of course, S is meant to be a constituent of a different type from (x, y), (though sharing some of their properties). In fact, S together with x and y is identical with Cresswell's category of "names": in which "the values of things ... have no restrictions placed on them. This is unlike the category of sentences whose values are propositions. There is no reason why propositions should not be named, or anything else for that matter", (op.cit:66). It should be said that Cresswell is probably talking about citation-forms of propositions rather than embedded sentences, and in his subsequent practice, he treats all nominals as predicates, with (x, y) variables as arguments; (proper nouns, however, he treats as constants). Moreover, his treatment of embedded Ss, as example (9) shows, takes them to fall into the scope of a logical operator (e.g. that, that' or inf) which has a syntactic value, but does not alter the semantic content. But his "semantic rules" simply restate the familiar conditions on transformations (e.g. the identity condition) in a less transparent notation. Otherwise, so far as the actual content of propositions is concerned, Cresswell's model-theoretic rules simply provide a device for ascertaining

the truth (in some possible world) of the proposition; thus, talking of his rules for nominals, he says:

"Take a predicate like runs  $\in F_{\langle 0,1 \rangle}$ . Then  $\langle \text{John}, \text{runs} \rangle$  will be true iff  $V$  (runs) has the (higher-order) property of being instantiated by John, just as  $\langle \text{someone}, \text{runs} \rangle$  is true iff  $V$  (runs) has the property of being instantiated by someone. Given that  $F_1$  contains, say,  $\text{John}^*$ , designating John, [the rule] says that  $\langle \text{John}, \text{runs} \rangle$  is to be true (i.e., runs is among the predicates true of John) iff  $\langle \text{runs}, \text{John}^* \rangle$  is true (i.e., iff John satisfies the predicate runs)", (op.cit:132).

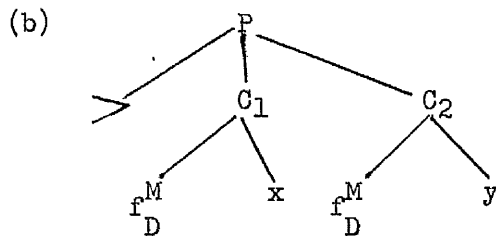
It should be noted, however, that his rules tell us nothing of the semantic content of runs, which a linguistic theory of meaning would require. Nor does he provide in principle a way of assigning meaning to a variable (in the general sense) such as John. Nor do his rules tell us how the meanings of John and runs interact with each other. Thus Cresswell's "semantic rules" suffer from precisely the same limitations as Crossley et al's model-theoretic rules discussed above. Much the same can be said, I believe, of the attempts by other logicians to represent meaning using logical notions and notations. (Lewis (1972:174 sq. and 213 sq.)) distinguishes between extensions, which are the references, or more generally, the truth-determining conditions, of a word or sentences; and indices, which are packages of other factors affecting these conditions, e.g. situation, setting, etc. However, he still does not analyse, or provide for, the cognitive meaning of language, unless his "definition" of pig (p.203) may be taken seriously: "every pig is a pig and an animal and grunts" (and (p.204): "the character of the universally generic pig... is the set having as members just those properties that every pig has as properties"). Apparently he intends us indeed to take this seriously: "appropriate extensions for noun phrases are characters, either individual or generic" (ibid.). But the trouble with such approaches to meaning is their vulnerability to trivial falsification, e.g. by producing a pig that never grunts. And if the grunting of a pig is said to be a contingent rather than a necessary attribute, the linguist may retort that the language (and its speakers) ignores the distinction).

I have tried to show, therefore, that logician's treatments of (i) embedded Ss, and (ii) cognitive content are inadequate. The symbol S, I would suggest, is used by Lakoff, and others, not as a variable having a constant or a predicate as its predicate, but as a variable having a proposition as its predicate. Thus, in (9), John  $\in x$  (or 'x is John'),



just as a man sing  $\in$   $S_1$  (or ' $S_1$  is a man sing'): the pieces of language are instances of the variable and are really citation-forms. In fact, if we examine Bartsch and Vennemann's practice (as opposed to their pre-script), we find that they too use such symbols, as soon as they translate logical formulae into trees, e.g.:

10. (a)  $f_{D}^{M}(x) > f_{D}^{M}(y)$



(Bartsch and Vennemann  
1972:73 sq.)

Quite evidently, the symbols  $P$ ,  $C_1$  and  $C_2$ , which do not appear in (10a), function simply as node-markers. This embodies the statements that  $f_{D}^{M}(x)$  is a  $C_1$ , i.e.  $(f_{D}^{M}(x))(C_1)$  and that  $f_{D}^{M}(y)$  is a  $C_2$ , i.e.  $(f_{D}^{M}(y))(C_2)$ , and that both of these and the relation '>' constitute a  $P$ . The most that can be said against these node-symbols, then, is that they are superfluous. One cannot say that a notation containing them is incorrect, or that they make the notation "impossible to salvage" (*op. cit.*: p.14); merely that it is not as economical as possible in terms of a serial notation: however, as soon as a two-dimensional notation is required, such symbols become necessary. Furthermore, as has been well-known in linguistics since at least 1965, such symbols represent the recursive function in generative rules: embedded  $S$  is configurationally identical with topmost  $S$ , but functions like a constituent of topmost  $S$ . Logical notation of the conventional type represents embedding by means of bracketing (e.g. Carnap 1947:131:

11. (a) 'Hs' ('Scott is human');  
 (b) ' $\Diamond$ (Hs)' ('it is possible that Scott is human');  
 (c) 'J ( $\Diamond$ (Hs))' ('John believes that it is possible that Scott is human').

Thus, in (11b) and (c), the terms included in the outermost brackets function, in their totality, identically with the term  $\underline{g}$  in (11a), viz. as arguments.

#### 4.13 Configurational assumptions

The hypothesis concerning semantic primes which I propose to follow, therefore, is that they are equivalent in some as yet undefined way to the perceptual and conceptual distinctions made by human beings. At the level of semantic primes, such distinctions as word, phrase, clause, sentence, discourse do not exist. However, semantic primes do not occur in "unstructured heaps", but in structured configurations, whose properties will form the concern of most of the remainder of this chapter. It is, of course, well known that phrases, clauses and sentences have structure, and most linguists these days would also admit that discourses have structure. When it comes to words, however, the situation is not so clear; of course, compounds and polymorphemic words have a certain structure (though perhaps there is more structural ambiguity with compounds than there is with clauses: see Lees 1960), but monomorphemic words cannot be said obviously to exhibit this property (even phonological structure is not a property of words, but of syllables). Furthermore, the traditionally-recognized structure of clauses, sentences, etc. has always been a configuration of word-classes, whose semantic content, if any, is so generalized as to be virtually non-existent, (though Lyons 1968:317 sqq., for example, argues that at the core of each of the major word-classes at least there lies a semantic property). Chomsky 1965 refined the traditional word-classes (or at least the major ones) by introducing the idea of subcategories, but these were still, in his view (though not in the view of McCawley 1968a) purely syntactic categories.

It has been one of the most interesting achievements of GS (and such of its predecessors as Uriel Weinreich) to show that in terms of semantic structure there is no difference in principle between words and phrases, clauses etc., and that those syntactic distinctions are comparatively superficial. However, semantic structures are still structures; the difference between them and syntactic structures, as I suggest in section 4.11, is that the terminal symbols (at least: cf. my discussion on the use of S in section 4.12) represent meaning directly, whereas the terminal symbols in, say, the Aspects categorial component are content-free. Then words, phrases, clauses etc. are taken in GS to be derived linguistic forms associated with particular configurations or sub-configurations of semantic elements, and not simply bite-sized sense-chunks inserted into hitherto meaningless syntactic configurations whose ultimate meaning is

seen as a Fregean compositional function of the meanings of its parts. This, the Katzian and Aspects view, implies (i) that word-meaning is of a fundamentally different character from phrase-, clause-, etc. meaning - although as Lakoff 1971:269 points out, Chomsky 1970 adopts "without fanfare" the opposite assumption - and (ii) that there is no structural similarity between words and phrases etc. of identical or similar meaning. Both of these interpretivist assumptions will be challenged in the present work.

The assumptions which underlie the configurational structure proposed in the next section include the following:

- (i) that all semantic information is represented before the application of any transformational rules, i.e. that transformations are meaning-preserving;
- (ii) that the so-called "grammatical relations", upon which the projection rules of interpretivist theories are based (see Ch. VI for discussion) are in reality superficial relationships of derived structure, representing convergences of basic semantic roles, such as agent, neuter, dative, beneficiary, location, purpose etc. These each have complex situational meanings which ought to be defined in the theory, since these are substantive universals. However, I shall regard them here as semantic primitives;
- (iii) I shall also assume the VSO order (or the "Polish" notation of formal logic; cf. McCawley 1970c, 1972a). Though nothing substantive depends on this, it does simplify the statement of some transformations (e.g. Predicate-raising). A very interesting paper by Anita Hochster (1973), however, argues for the necessity of a VP node in order to unify the three raising rules mentioned in McCawley 1970c (Subject-, Predicate-, and Neg-Raising), also, presumably (though she does not mention this) to allow for pre-lexical structures in which a Pred + "object" is raised to a Pred to form a potentially lexicalizable subtree, (e.g. puncture (x, y): CAUSE (x (LOSE (y, air))), i.e. CAUSE-LOSE-air (x, y)). However, her argument requires that lexicalization takes place post-cyclically, so that Verb-Subject Inversion (a post-cyclical rule (McCawley 1970c) which yields the superficial SVO order; also called Subject Formation in Bach 1971, and by Hochster), could be ordered

before it, to give a VP constituent, thus enabling, for instance, the constituent LOSE-air in the above example to be specified. Also, as she points out (p.24), there is nothing in McCawley's arguments to prevent SOV or VOS orders, in which a VP constituent might be discerned. I shall actually assume a V Argument Argument Argument ... order at the deepest level, and since my model allows for some post- and inter-transformational lexicalization (see figure (2) section 4.11), Hochster's modifications could still apply. I shall return to her argument for a unified Raising rule, in the next section;

- (iv) Despite arguments to the contrary (Grinder 1972, Kimball 1972b, Koutsoudas 1972, Ringen 1972), I shall assume the existence of both the transformational cycle and rule ordering in the grammar, (though I shall rarely have need to refer to them). George Lakoff (1972b) makes the point that, given a straight choice between the cycle (which is a universal principle) and extrinsic ordering (an ad hoc blocking device), the former must be preferable. However, in all the arguments contra extrinsic ordering, I have never seen the simplest case discussed, namely that of the reflexive vis-à-vis the imperative; the cycle does not enter into this question, since reflexivization and imperativization necessarily take place on the same cycle, and, it seems to me, necessarily in that order. I can see no alternative to the principle of extrinsic ordering at least in this case. But since the cyclic principle is an extremely elegant, and, I believe, indispensable device in such rules as Raising, I have retained this notion, too.

Before proceeding on to the proposed rules themselves, I want to make some more points about assumption (ii), the introduction of roles into the configurational component. In GS terms (and of course in interpretivist terms, too) this is the main innovation of these rules, though others writing in a GS framework have also recognized the necessity of role-marking (particularly van Dijk 1972, Landerman and Frantz 1972).

In section 1.3, I have already made the point, too, that semantically-specified arguments are preferable to the conventionally ordered variables

of logical notation. Given the usual facile examples in philosophical argumentation ("Scott wrote Waverley", and all the rest), then the identification of the first variable as "subject" and the second as "object" is probably sufficient (although even here we note that Waverley is presumably a Result rather than Neutral (or Patient as it is sometimes called)). However, as soon as more complex sentences are taken into account (even minimally more complex), then this conventional (and usually tacit) assignment of roles is found to be completely inadequate. The variables are seen to represent a number of different role-relationships, given the formula P (a, b), with a variety of different natural language predicates in the P position:

12. (a) KICK (a, b), (a = Agent, b = Neutral)  
 (b) RECEIVE (a, b), (a = Beneficiary, b = Neutral)  
 (c) USE (a, b), (a = Agent, b = Instrument)  
 (d) OPEN (a, b), (a = Agent, b = Neutral) or  
 (a = Instrument, b = Neutral)  
 (e) MAKE (a, b), (a = Agent, b = Result)  
 (f) REMIND (a, b), (a = Agent, b = Dative) or  
 (a = Neutral, b = Dative)

(These role-assignments are merely indicative, and may in reality be much more complex. See Fillmore 1968, 1969a, 1971a, Langendoen 1970, Nilsen 1972; on remind, see Postal 1970). To this extent, then, logical notation is only adequate when empty (given the assumption that all logical predicates have a fixed relationship - of whatever kind - with their variables). As soon as it is used for natural language (and even including, as we have seen, the usual simplistic examples), conventional logical notation, when unmarked for roles, is inexplicit and not uniquely interpretable.

The second point I wish to raise concerns the notion of grammatical relations. Jerrold Katz, in his 1970 article, quite properly questions how the semantic structures advocated by such generative semanticists as McCawley originate, though his discussion and conclusions on this point seem to me to be most dubious. He erects a sort of Morton's Fork of an argument by which on the one hand McCawley's indices cryptically represent grammatical relations, or on the other the predicate-calculus type of analysis represents precisely the reverse of the interpretative semantic analysis, and therefore is a mere "notational variant". This is not the occasion to argue the merits or demerits of such remarks (though I hope

to do this in a forthcoming paper (forthcoming a)). All I want to do here is to point out (for discussion, see Ch. VI) that Katz is operating in the stubborn belief that what he calls "grammatical relations" are in fact syntactic in nature. There is so much counter-evidence to this idea, presented for example by Fillmore, in several places, that it does not need arguing again here. However, Chomsky's arguments against Fillmore (Chomsky 1972a mainly, but also 1970) should be assessed at this point. I agree with some of his criticisms: the case system is clearly not the same as semantic structure. However, Chomsky goes on from his demonstration of this to claim, without attempting specific substantiation of any kind, that "the relevant semantic properties... [are] statable only at... the level of deep structure" (1972a:175). But this is by no means a necessary conclusion: in fact, the same arguments might equally well be used by a generative semanticist to prove that semantic structure was "deeper" than case relations.

In fact, some of Chomsky's subsequent arguments seem dubious to me. He argues that (my numbering):

13. (a) Caruso broke the window with his voice,  
has two case representations:

(b) [V, break], [obj, the window], [instr, Caruso's-voice]

(c) [V, break], [obj, the window], [instr, voice], [agent, Caruso]

and yet is not ambiguous, since it always means, according to Chomsky, Caruso's voice broke the window. But the dual possibility of case representation falsely predicts ambiguity. From this, he argues that the "semantically significant grammatical relations" have nothing to do with case structure, since differences of case structure apparently do not correspond to differences of meaning. But Chomsky is mistaken in this: (13a) clearly is ambiguous, since the damage can be intentional or unintentional. This may be demonstrated by prefacing the sentence with For a bet..., or another phrase presupposing intention:

13. (a') Intentionally, }  
For a bet, } Caruso broke the window with his voice.  
Unwittingly, }

This then restricts the interpretation to (13c), in which Caruso is the agent and therefore the intending mover of the action. Without the volitive phrase, however, the sentence is ambiguous between the intentional sense and the accidental sense otherwise expressed as:

13. (d) Caruso's voice broke the window,

and this sense, notice, cannot be prefaced by a volitive phrase:

13. (d') <sup>☞</sup>For a bet } Caruso's voice broke the window.  
etc.

This completely nullifies Chomsky's argument at this point, which is ironic in that he has just used an ambiguity of precisely the same sort (p.177) to demonstrate a relationship between Subject-position and Agent-case.

He also considers the sentences:

14. (a) Mary pinched John on the nose,  
(b) Mary pinched John's nose,  
(a') <sup>☞</sup>Mary pulled John on the nose,  
(b'') Mary pulled John's nose,

in relation to the idea that it is the syntactic context of the verbs pinch and pull which determines this distinction. He notes that instead of (14a'), the sentence Mary pulled John by the nose does exist, but that since it has a different meaning, it must have a very different source. However, it is for many speakers, at least, ambiguous between 'Mary pulled John, by pulling his nose', which is presumably how Chomsky has interpreted it, and 'Mary pulled John's nose', i.e. a sense which is fully analogous to (14a). So at least for some speakers, these two verbs are not syntactically differentiated in the way Chomsky suggests. But suppose we accept Chomsky's data. Does this necessarily force us to accept his conclusion also? I would argue that it does not, since Chomsky has shackled himself to the assumption that syntactic distinctions are prior; he therefore does not bother to argue his case, but simply assumes that if Fillmore is proved to be wrong, then he is ipso facto right. But the mere existence of a syntactic distinction - for some speakers - does not constitute proof of Chomsky's position, nor does he vouchsafe us any explanation for the distinction: apparently, it just is. Distinctions between pinch and pull there certainly are: but it is the contention of GS that such distinctions have their root and essence in the different meanings which the forms are associated with. Consider the type of actions which pinch and pull denote. For pinching, the instrument used must have two opposing parts (e.g. thumb and finger, pincers, pliers, a closing door), the action is a certain closing, and sometimes twisting movement, usually applied by an agent, and the object, which is often animate, but not necessarily so, is a small surface area at the point of contact. For pulling, the instrument used may be muscular, mechanical or gravitational in nature, and the action

involves a drawing motion upon the whole of the object specified. This has certain consequences. Thus, (14a) and (14b) both entail that Mary pinched John, though the reverse does not hold, since Mary pinched John necessarily implies 'not the whole of John', but 'some small area of John'. (14b'), on the other hand, does not necessarily entail that Mary pulled John, though it might in fact be the case. But if Mary pinches John on the nose, she also pinches his nose, his face, and indeed John: in fact, any part of John which contains the specified object inalienably. If, however, Mary pulls John by the hair, she does not necessarily pull his head, or John himself - unless, that is, the sentence is to be understood in the sense 'Mary pulled John, by pulling his hair'. In other words, the use of pull which most resembles pinch is the one which Chomsky dismisses as having "a very different source"! In both cases, the action is applied to a part, but entails an effect on the whole. The differences (e.g. on as opposed to by) arise out of the different natures of the actions, i.e. they are semantic: you cannot pull somebody on the nose for the simple reason that pulling involves the whole of the object specified, whereas 'on' refers to a small part of the surface of the object specified. For this semantic reason, therefore, certain prepositions may be used with pinch, since they refer to part of an article, but not with pull. This explains Chomsky's example (as Chomsky himself fails to do):

15. (a) Mary pinched John near the nose, behind his left ear, etc.

(b) \*Mary pulled John near the nose, behind the left ear, etc.

I am arguing, therefore, that any syntactic differences between the two items - and those claimed by Chomsky are by no means universal among speakers of English - result from a semantic distinction to do with differences in the nature of the actions denoted.

Fillmore's arguments are, it seems to me, perfectly valid if one takes the notion of case relationships as a substitute for that of grammatical relationships (and not as representing "semantic structure", which involves much more - much more, indeed, than we at present know). Jackendoff's "functional" component in his variety of EST appears to me to comprise an implicit recognition of the inadequacy of "inferring" grammatical relations from categorial configurations; in this respect, as I shall subsequently suggest (see Ch. VI), Jackendoff's model is closer to GS, and certainly to Fillmore, than is Chomsky's.



Fillmore's evidence, however, demonstrates that Katz's basic grammatical relations are derived from a small number of semantic roles, in various combinations, and are therefore very superficial in nature. Thus, for Katz to say that McCawley's indexical markings must conceal some stipulation of grammatical relationships is really to say that they should express a hypothesis about particular Arguments (as opposed to Predicates) being associated with semantic roles. This, it is true, has nowhere to my knowledge, been explicitly done by the "chief movers" of GS (Fillmore's earlier papers, of course, embody such a proposal in a different linguistic theory). Explicitness of this kind is the very essence of formal grammars, and is desirable for itself alone; I therefore propose to incorporate the specification of semantic roles explicitly into the semantic theory.

#### 4.2 The proposed rules: first approximation

##### 4.21 Configurational rules

In the conventional Base, the rewriting rules manipulate categories and subcategories according to restrictions which arise from the fact that this is a formal system. The categories themselves are no more than denominations for the various constituents of the largest constituent, S. Grammatical relations are regarded as (statable as?) unique paths between certain categories and S. In semantic generation, the rewriting rules (fewer in number since so many superfluous structural types and subcategories can be specified by means of semantic roles or through contextual restrictions) manipulate not constituent-categories, but semantic elements. However, the formal restrictions on rewriting systems still apply. Thus, both category membership and grammatical relationship (as conceived in ST) will here be presented as fairly superficial consequences of a specific item's having derived from a Predicate or Argument node, and of the role-marking of the node, and its subsequent participation in transformational rules. Another substantial difference between the model I am proposing and the conventional Base is that S in the latter is taken not only as the starting-point of the grammar, but its descriptive goal, too. In the present model, however, S is an intermediate symbol, a convenient entry-point for a derivation, and part of an ongoing linguistic act. Thus, my first rule (at least for the time being) starts with " $\Sigma$ ", which can stand for "sentence" or "sema", and like Fillmore's rules, rewrites this into

16. (a)  $\text{Mod}^*S_0$

"Mod(ality)" covers what I have hitherto called "contextual representation" (cf. Ch. II), equivalent, roughly speaking, to a specification of (i) significant contextual information (deployment of "given" and "new" items, anaphora and deixis, presuppositions associated with the discourse and its immediate setting), and (ii) significant attitudinal information (whether an item is important or unimportant, approved of or disapproved of, the speaker's viewpoint: tense and time references, place references, cultural assumptions, intended speech act). I propose, at least for the time being, to regard "Mod" as an insertion-point for such information. The rest of the basic rules, then, are:

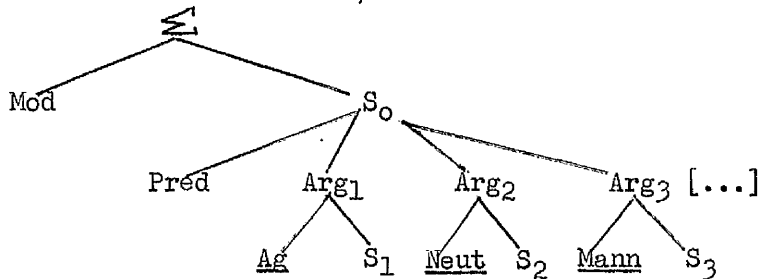
16. (b)  $So \rightarrow \text{Pred}^{\text{Arg}_1}(\text{Arg}_2)^{\text{Arg}_3}(\text{Arg}_4)^{\dots}$

(c)  $\begin{bmatrix} \text{Arg}_1 \\ \text{Arg}_2 \\ \text{Arg}_3 \\ \text{Arg}_4 \\ \dots \end{bmatrix} \rightarrow \left( \begin{bmatrix} \underline{\text{Ag}} \\ \underline{\text{Neut}} \\ \underline{\text{Time}} \\ \underline{\text{Mann}} \\ \underline{\text{Res}} \\ \underline{\text{Loc}} \\ \dots \end{bmatrix} \right)^{\text{S}}$

(d)  $\text{Pred} \rightarrow \text{S}$  (optional)

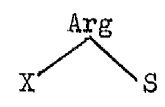
(The subscripts are merely for identificatory purposes: they do not affect the integrity of the symbols). These give as a possible tree:

16. (e)



Rule (b) expands  $So$  ( $\hat{=}$  "proposition") into a Predicate and a number of Arguments, after the predicate-calculus model advocated by McCawley, G. Lakoff and others (cf. section 4.1). The number of Arguments present is an empirical question: it is certainly finite and quite small. A related question concerns the number of obligatory arguments there are for a particular predicate, i.e. whether it is one-place, two-place, etc. It might be argued for the present proposals that all the obligatory places are dominated by  $\text{Arg}_1$ , while subsequent  $\text{Arg}$ 's dominate the optional modifications (Time, Place, Manner, Purpose etc.). However, a point that needs

to be discussed is: what is meant by "optional" and "obligatory" in a semantic component? Not what is meant by the terms in a syntactic component, surely. Thus, an optional syntactic element is one whose omission will leave a grammatical sequence of the same type. Clearly, nothing like this would define the notions for any semantic use. Therefore it must, I suppose, be assumed that each predicate is marked for the minimum number of places it can support, and any arguments over that number are optional. The bracketing in rule (b) indicates (as is the convention) that not the whole series of Arguments need be chosen (though at least one must be). Rule (c) analyses each Argument into a constituent consisting of a role (which would be defined in the metatheory, by meaning-postulate drawn from the complex situational relationships involved here, or by some equivalent device), and/or an embedding-point (S). The configuration



expresses the relationship 'the (or an) X such that S'. The order expressed here is not necessarily correct, and some of the roles mentioned may well be second order features derivable from others. However, these are details whose correct formulation will not affect the present problem. Rule (d) allows the Predicate to be replaced by a whole proposition, optionally. The intention of this is to capture postlexical predicate structure (as will shortly be seen). Postlexically, it might also possibly allow for the derivation of predicate-modifiers, but this is immaterial to our present purpose, and I propose to assume the essential correctness of the structure.

4.22 Semantic primes

The content of the configurations thus generated is provided by semantic primes specified and defined as substantive universals of the theory. The number and nature of these primes, as I have already remarked, is an empirical question open to experimental investigation. I would suggest that the number of basic Predicates in natural language is quite small (excluding 'BE + complement', which in itself is an open set), while the number of basic Arguments is perhaps confined to the roles. Thus semantic information is basically predicative, with the roles being semantically specified by embedded Ss. Wierzbicka's "present favourites" as semantic primitives are (Wierzbicka 1972:15 sq.):

- 17. want something
- don't want (diswant) someone (being)
- feel I

think of	you
imagine	world
say	this
become	
be a part of	

These must be "put together according to the postulated grammatical rules of the 'semantic language'" (op.cit:23) - though she does not provide these, eschewing formalism as a matter of strategy not principle (p.25). However, her semantic structures are so complex (cf. example (3), section 4.11) that their formation would require the full battery of PS and transformational rules in derivation (though she regards this as a matter of "a few extremely simple grammatical patterns", (p.23). Her structures - which, she points out (p.23 sqq.) are not "the thought itself" but are, she claims, "isomorphic to the thought" - are the deep structures of actual sentences of the language. Grammar is thus simply a system of transformational rules to convert these deep structures into surface sentences. Thus her implicit model is roughly generative semantic, though lacking labelled trees and derivation rules. This rather reduces its credibility.

My own view is that the primitive predicates would include at least the following:

18. BE (+ Pred: TRUE, IN, TO ...)
- DO
- SAY
- THINK
- CAUSE
- MOVE
- HAVE
- ...

The first of these, as I have already said, is, when '+ Pred', an open set, whose Predicate will include items which superficially might be adjectives, nouns or prepositions. In subsequent trees in this work, this 'BE' will be omitted. BE without Pred is the simple predication of existence (not, though, the logical quantifier '∃'). There is also a special class of predicates (equivalent in logic to "connectors" or "operators") whose formal characteristic is that they are predicates whose arguments must be Ss (propositions). They include:

19. NOT
- AND
- IMPLY
- DESPITE
- AND THEN

The empirical method of obtaining such primitive terms is, let it be said, fraught with great difficulties. Wierzbicka, in her first chapter, has several apposite quotations on this problem, including, notably, contributions from Locke and Leibniz. The latter distinguishes between genuine primitives, in terms of which other notions are defined, and which are therefore conceptually irreducible, and those notions which, though complex, resist definition as groupings of more fundamental terms. Among the latter type would be included many sense-data, such as colours: blue is not a genuine primitive like TRUE. A heuristic for this, I suggest, (and implicit in R. Lakoff 1973:162) is to scan the content of definitions, using dictionaries and informants, and proceeding in ever-decreasing circles (of "delicacy", as a Hallidayan might put it), in order to isolate these irreducible terms. But, of course, the words for these irreducible terms themselves require definitions: upon examination, these will be found to be defined in terms more complex than themselves, e.g.:

20. have... to hold: to keep: to possess: to own: to hold in control: to bear: to be in a special relationship to (analogous to, if short of, ownership...): to be characterised by: to be in enjoyment of: to experience: to know: to entertain in the mind: to grasp the meaning or point of: to have received as information: to put, assert or express: to suffer, endure, tolerate: to hold or esteem: to cause or allow to be: to convey, take or cause to go: to accept, take: to get: to obtain: to give birth to: to be obliged: to get the better of, hold at a disadvantage or in one's power in a dilemma: to take in, deceive...

Macdonald 1972:597.

A rule-of-thumb (requiring to be formalized), therefore, is that non-basic concepts are defined in terms of basic ones (or in mixtures of basic and non-basic concepts), whereas basic concepts are defined in terms of more complex expressions or near-synonyms. Great problems still exist, particularly among contenders for basic concept status, e.g. MAKE, BRING, and CAUSE, whose definitions in four separate dictionaries I have consulted (Macdonald 1972, Wyld 1932, Onions 1944, Devlin 1938) all include each other, sometimes by way of yet other words (especially produce). Colour terms are defined referentially (e.g. "blue... of the colour of the unclouded sky", Macdonald 1972:140), while species names are defined in terms of (i) the animal taxonomy, (ii) their (well-known or determining) physical or functional attributes, and (iii) by comparison with similar or related species, e.g. elephant:

21. "a Proboscidean (Elephas) of several fossil and two surviving species, the largest living land mammal, having a very thick skin, a trunk, and ivory tusks...", (Macdonald 1972:418); "a very large pachydermatous quadruped, with large tusks and a long trunk; there are two surviving species, the Indian and the African, the latter being distinguished by a straighter back and very large ears...", (Wyld 1932:356); "a huge quadruped of the Pachydermate order, having long curving ivory tusks and a prehensile proboscis. Only two species now exist, the Indian and the African; the former of which (the largest of extant land animals) is often used as a beast of burden...", (Onions 1944:593); "a large mammal of Asia and Africa, the largest land animal, distinguished by a long, flexible proboscis and the development of the upper incisors into tusks", (Devlin 1938:248).

The problem for a semantic theory is whether to include this encyclopaedic material in semantic structure. The solutions reached in Wierzbicka 1972 and Leech 1969 amount to the same thing: such continual or taxonomical terms as colours, species (to which Leech adds types of movement etc.) are regarded as unanalyzable, at least for the semantic theory:

"a cat = an animal thinking of which one would say "cat" ",  
(Wierzbicka, op.cit:22);

"the only available solution, it seems, is to assign a single contrastive component to every species, e.g. 1 SPE for 'dog', 2 SPE for 'cat', 31 SPE for 'elephant', etc... In this analysis we fail to represent any of the known zoological facts about elephants - we merely note that the elephant is a distinct species, separate from and contrastive with all other species",

(Leech 1969:87).

Wierzbicka's solution, it should be noted, is to treat species-names as proper nouns (cf. "The man called John = the man thinking of whom we say "John" ", (ibid.)). In my earlier remarks on proper nouns (section 2.16 above), I suggested that their meaning was in principle no different from that of common nouns, except that it included no class-attributes, i.e. attributes held by virtue of the item being a member of a class of such items. Clearly, species-names are like (other) common nouns in this respect: something that is correctly referred to as an elephant will display at least a high proportion of the attributes of the class elephant. However, species-names seem to me to be similar to proper nouns in that there is in principle no limit to the number of attributes which may be predicated of them (and, as a matter of fact, I cannot see that common nouns are any different in this respect either). For Leech, this is a counsel of despair:

"we find numerous, perhaps innumerable, properties, of which one or a small selection would serve to differentiate the given species. For example, for the elephant: 'living on land'; 'larger than other land mammals'; 'having a trunk'; 'non-extinct'; 'ivory-producing'; 'having a gestation period of approximately 640 days'. How could the meaning of the word elephant be specified in terms of such properties?

For a start, let us rule out one solution to this problem - that of embodying all the characteristics of the species (physical, social, geographical, etc.) in the definition. The result would be an encyclopaedia entry, rather than a definition. As a specification, it could never be considered complete, since science might at any time discover further unsuspected facts about elephants; and to have an infinitely or indefinitely long semantic specification would run counter to the whole notion of an explicitly formulated semantic description we have been considering. A second solution would be a selection of any group of properties sufficient to distinguish animals from other species... The selection of criterial properties would... be arbitrary, and this would mean that we were allowing for innumerable semantic descriptions of the word elephant...

We may conclude that no denotative properties of the kind we have been discussing can reasonably be incorporated into definitions as "essential" properties."

(ibid.)

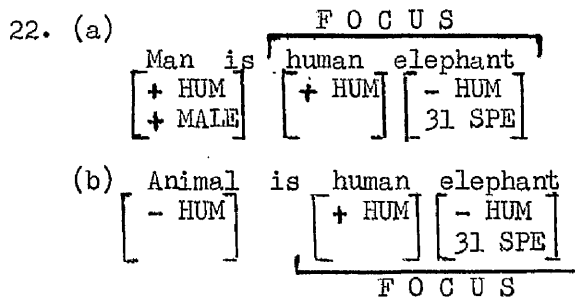
Leech's solution, as we have seen, is an "emic" one (to use Pike's terminology): on one level, at least, species-names may be regarded as symbolic "counters" functioning merely to distinguish verbally one species from another. Thus he feels able to treat This elephant is a tiger as a logical contradiction, but This elephant has eighty legs as well-formed. He is led to this counter-intuitive position (as it seems to me) by his assumption that a theory of semantic competence will be a well-defined object, i.e. hermetically self-contained. Leech, perfectly consistently with this assumption, sees that certain terms (I would postulate most, if not all, lexical items upon closer examination) are not well-defined - their specification is open-ended. This leaves as their only differentia the species-distinction itself (and even this, as Leech himself points out, is not necessarily discrete, as other "multiple taxonomies", e.g. words denoting vessels of various kinds, show even more clearly); but this solution renders these distinctions completely vacuous: it is an evasion of analysis rather than an upper limit. Even Wierzbycka, whose solution of the species-name problem is not dissimilar to Leech's, as we have seen, cannot accept his extension to all non-hierarchical sets: she regards it as "impatient eagerness for simplicity and neatness of

description", and "abandonment of some of the most congenial tasks that structural semantics could set itself", (op.cit: 108 sq.).

The faultiness of Leech's solution can be seen in his treatment of metaphor, which like factual information he regards as part of performance, (on the grounds that (i) it is item-bound, and (ii) it depends heavily on context, which he regards along with the prevailing orthodoxy as a matter of performance). His interpretation rule for metaphor is:

"If an expression E expresses a componential formula a, then E may also express a specification of the form '(someone/thing) (behaving) like/as if a', (op.cit: 90).

Thus, if an expression is a logical contradiction, it may be interpretable by this rule: That man's a fox → That man's like a fox. He observes that such an expression as human elephant, which is logically contradictory, may be interpreted as a metaphor, upon a human or upon an elephant (presumably when in such a sentence as Here comes the human elephant). But ultimately the context will disambiguate such a sentence (another process which Leech regards as performance), giving such structures as (in Leech's notation, apart from the "focus"):



An alternative to Leech's interpretation rule given above will allow contextual specification to provide the information that man and animal respectively are Topics in their sentences, i.e. that they constitute the literal subject-matter (the tenor), and this in turn tells us that the constituent incompatible with that forms the vehicle of the metaphor (viz. elephant in (22a), human in (22b)). But neither formulation specifies the ground, the third component of any metaphor, i.e. in what respects the man is like an elephant, or vice-versa. However, Leech's formula does not even allow the ground of comparison to be present in principle (even in cases where it is perfectly clear, because standardized in the language, or specified in the context, e.g. for (22a):

22. (a') ... He's so clumsy;  
 (a'') ... He's so big and heavy;  
 (a''') ... He's got such a good memory.)



and this has semantic-lexical implications, too. Presumably the lexicon in Leech's model will contain derived forms such as elephantine, foxy, etc. The latter, for example, will receive in Leech's specification the interpretation 'like a  $\begin{bmatrix} -\text{HUM} \\ 236 \text{ SPE} \end{bmatrix}$ ', say, but the interpretation of this interpretation will, according to him, depend on extralinguistic knowledge, since it will not be derivable from the linguistic theory. Thus it might be 'in that he has a bushy tail', 'in that he is frequently hunted', 'in that he has a pointed, narrow snout' etc. How is the common meaning of such words to be specified at all, unless either (i) separately from fox, or (ii) by derivation from the specification of fox? Leech must presumably follow solution (i), which is uneconomical, since the derivation of such forms in -y is perfectly regular up to this point. He suggests (op.cit:92) that "a semantic change has taken place whereby the meaning 'like X' has been replaced by a meaning incorporating the warranty [= ground] of the comparison. One might argue, for example, that fox, as a term referring to human beings, has become a "dead metaphor" in this way: that it means 'a cunning person' rather than 'a person like a fox (in that he is cunning)'." But I am at a loss to see how Leech's model could possibly allow for this process, even if it were incorporated into a theory of linguistic change.

This suggests that a closed semantic system will fail to account for all the data, though it may be testable as a formal system. On the other hand, a theory which accounts for all the data (e.g. one incorporating a contextual component) may not be fully testable as a formal system, since it will have to be open-ended. This is the dilemma which modern linguistics must resolve: it lies at the centre of current controversies. (The problem is not so much that an open-ended system is untestable - these can in fact be tested - but that an open-ended interpreted system may not be validatable).

Despite all this, I would suggest that any semantic theory which sidesteps the problem (as Leech does) is not a true semantic theory at all, but a system of lexical contrastivity merely. In my view, a semantic theory should specify meaning-configurations postulated to be present in the mind of the mature speaker-hearer. Part of these configurations will undoubtedly consist of factual information; though I have never seen it demonstrated - by Leech or Katz or anyone else - in what way '+ HUM' is "logical" or "linguistic" as opposed to '+ TRUNK', which is supposedly

"factual" or "extralinguistic". In the same way, Leech would presumably distinguish between childish, 'like a  $\begin{bmatrix} + \text{HUM} \\ - \text{MAT} \end{bmatrix}$ ', i.e. 'immature' which thus contains linguistic information; and mulish, 'like a  $\begin{bmatrix} - \text{HUM} \\ 17 \text{ SPE} \end{bmatrix}$ ', i.e. 'mulish'! (Or perhaps mule is '15/16 SPE'?). Mulish therefore, in Leech's formulation, means nothing more than 'like a mule', while mule means 'a non-human of a certain species'. Leech's arguments (quoted above) boil down to a preference for arbitrary distinctions over specific but open-ended ones. In fact, his semantic categories, like Katz's (see Searle's comments in section 4.12 above), are empty of any content except that which the reader, using the mnemonic clues of the category-names, may be moved to supply. And if it is claimed (as it may with some justification be - as indeed I have done) that the semantic categories are defined in the metatheory, we then encounter precisely the same problem: how to define '+ HUM', '1 SPE', '2 SPE', ..., 'n SPE', without using "factual" information?

I therefore propose that semantic structure contains such encyclopaedic information in principle, though in practice most of it will not form part of the "active meaning" of a piece of language. By "active meaning", I mean that part of a semantic configuration which is used and referred to by a language-community (different dialect-usages are, of course, common, as are different period-uses: the stock of subconfigurations, including connotations, and the choice from it, may vary across space and time). Which subconfigurations (or "subtrees") are active for a particular community, at a given time, is open to empirical investigation, both by informant elicitation techniques (as used by Leech himself, see Leech 1970, 1974:90 sqq. and references) and by the analysis of discourses for collocations and co-occurrence relationships. And, of course, as always, the linguist may use the evidence of his own intuition, as well.

It is a consequence of the GS approach that a single word and a lengthy expression containing several clauses may nevertheless share an identical semantic structure. It is more accurate to say, however, that a single word will stand for that structure, whereas the lengthy expression might be an isomorphic exponent of it. Indeed, it might well be the case that the lengthy expression only partially expounds the structure (in the

case of the open-ended configurations we have been discussing, for example), whereas the word will always stand for the whole structure, whether it is well-defined or not. Thus, paradoxically, a word will almost always be more "complete" than any would-be synonymous expression. The traditional - and indeed current - mistake is to act on the belief that such expressions "paraphrase" words. Thus, Bartsch and Vennemann 1972:21 sq. argue that kill and cause to die are not synonyms because there is no relationship of bilateral implication between them: kill  $\supset$  cause to die, but the reverse does not hold. Therefore, they argue, the latter cannot represent the underlying structure of the former (similar arguments have been put forward by Katz: see Ch. VI below). I am not at all sure that Katz's or Bartsch and Vennemann's interpretation is correct here (as I argue in Ch. VI): kill (and indeed cause) can imply either direct or indirect causation (via the mediation of an instrument or another agent: cf. the discussion later in this section). But in any case, I would not expect a "monolexicalization" necessarily to paraphrase exactly a "polylexicalization", as Bartsch and Vennemann apparently do. In fact, such an expectation is quite incorrect, an error compounded by centuries of dictionary definitions: words and their (near-) synonymous expressions actually stand in a triangular relationship with semantic configurations: words as labels for configurations, expressions as (partial) exponents. This is why bachelor and unmarried man are not synonyms: the former stands for the whole configuration, connotations and all (and particularly those current in the "core" speech-community), whereas the latter only expresses a small number of the configuration's subtrees. I am arguing, therefore, for the logical priority of the configuration over both the (grammatical) sequence and the lexical item. The rules set out in section 4.21, together with the semantic primes discussed in this section, generate the possible semantic configurations of language. Lexical items may replace part or whole configurations before, during or after the transformational rules (points A, B or C in figure (2)). I shall have more to say on lexicalization in section 4.3. A large subtree may be replaced by a lexical item A, or its various parts may receive lexical items a, b, c, d..., whose structural relationship (as determined by the subtree structure) adds up to an expression (virtually) synonymous with A. Both lexical items and their synonymous expressions will probably undergo various of the transformational rules, whose function is to map semantic structures on to phonetic representations. I shall look at some of those rules in the next section, and I shall examine some sets of grammatical expressions - relatives - in Ch. V.

So far in this section, I have restricted discussion to the primitive components of Preds. I want now briefly to return to the question of the roles, which are peculiar to arguments in this model (though of course insofar as predicates contain arguments, they also contain roles). There are two points to discuss:

- (i) the metatheoretical semantic specification of roles;
- (ii) the interaction between individual Preds and the roles they take, i.e. the minimum number of arguments they are marked for, and the roles which fill these argument-nodes.

On the first of these, I want to do little more than observe that since roles are substantive universals of the theory, they have to be defined in the theory. A few informal definitions exist in the literature, e.g.:

Agentive (A), the case of the typically animate perceived instigator of the action identified by the verb.

Instrumental (I), the case of the inanimate force or object causally involved in the action or state identified by the verb.

Dative (D), the case of the animate being affected by the state or action identified by the verb.

Factitive (F), the case of the object or being resulting from the action or state identified by the verb, or understood as a part of the meaning of the verb.

Locative (L), the case which identifies the location or spatial orientation of the state or action identified by the verb.

Objective (O), the semantically most neutral case, the case of anything representable by a noun whose role in the action or state identified by the verb is identified by the semantic interpretation of the verb itself; conceivably the concept should be limited to things which are affected by the action or state identified by the verb."

(Fillmore 1968:24 sq.).

In an unpublished doctoral dissertation (which I have not seen), quoted in Nilsen 1972, Ana McCoy provides a "feature profile" for the cases (or roles, as I am calling them). Part of Nilsen's diagram for McCoy's (1969) system is worth quoting here:

Cases	Features									
	Cause	Instigator	Performer	Intent	Effect	Source	Goal	Active	Control	Affected
Agent	+	+	+	+	-	+	+	+	+	-
Instrument	+	-	-	-	-	-	-	+	-	-
Material	+	-	-	-	-	+	-	-	-	+
Contents	+	-	-	-	-	-	-	-	-	+
Causative	+	+	-	-	-	-	-	+	-	-
Purpose	+	-	-	-	-	-	+	-	-	+
Dative	-	-	-	-	-	+	+	+	-	+
Experiencer	-	-	-	-	-	+	+	-	-	+
Objective	-	-	-	-	-	-	-	-	-	+
Factitive	-	-	-	-	+	-	-	-	-	+

(McCoy 1969, quoted in Nilsen 1972:34).

This seems to suggest that roles are not in fact primitives, but definable in terms of still finer features. This may be so, but as far as I know, McCoy provides no arguments (Nilsen certainly does not quote any) for the primacy of the features. Three points suggesting that her features are not in fact primitives are: (i) they include at least three terms which have been postulated as roles: Cause, Source and Goal (although the first of these is more properly a predicate); (ii) four of the features are only positive for a single role each (namely, Performer, Intent, Effect and Control), and Intent is not necessarily positive even in its single function; (iii) most of the features are actually predicative in nature, suggesting perhaps an underlying tree-structure of the type specified above. However, as we shall see subsequently, agent-nominalizations such as performer represent Role-raised structures yielding a non-lexicalized equivalent such as 'one who performs' (cf. McCawley 1968b), which in fairly superficial terms is, of course, an NP rather than an S. If this is so, then the semantic content of arguments is distributed still further into predicates, leaving arguments to be nothing more than places in structure

(cf. McCawley's "indexed variables"; logical notation also assumes this: but as we have seen, logical predicates are free of content, too). The problem is that of the "infinite regress", caused by the exigences of defining language-meaning in terms of the meaning of other elements of language. Since all words are definable to some extent linguistically (as opposed to ostensive or grammatical means), the question of linguistic-semantic primacy cannot be settled with purely linguistic evidence; ultimately, we must hope that psychological discoveries will provide this much-needed footing, or possibly the type of sociolinguistic definition which is employed for "felicity conditions" in speech-act philosophy, e.g. "for  $x$  to be an Ag(ent),  $x$  must satisfy the following conditions: (i)  $x$  must be either sentient or a natural force; (ii)  $x$  must perform or cause to be performed some action; ...". This, in turn, will require a foundation either in psychological first causes or in a theory of situation. We always fetch up against these twin abysses of ignorance. (However, we cannot relinquish responsibility for the specification of semantic universals in the sanguine expectation that another science will come up with the answers, since it can readily be ascertained that workers in those sciences often have the same hopes about linguistics!)

In any event, I shall assume that the role-term Ag(ent), (for example), is different from the word agent, (though related, naturally). McCoy's feature profile of the cases is, I would therefore argue, actually a feature profile of the words (in certain senses). The roles are thus semantic primes in the theory by definition (by brute definition, one might say). The second point concerned with roles I wish to discuss is that of the relationship between (sets of) roles and individual Preds. Fillmore 1968, assuming a basically Aspects-type model, with only the PS component altered, envisages that each verb will be specified in the lexicon for its "case-frame", i.e. the cases which it can take, with what regularities and redundancies, and in which order. His verbs are, of course, lexical items, and the case-frames impose strict subcategorization conditions upon the nouns selected.

There are two main problems here. The first is: are there obligatory and optional roles for particular Preds? The second concerns the consistent identification of roles with different Preds: can we be sure that Ag with Pred X is identical with Ag of Pred Y? The first is an empirical

question to some extent, but it is possible to take the practical position either that only the obligatory roles are stipulated for a Pred, and the optional ones are selected from the general set available, or that all the roles open at any time to a given Pred are specified, and the obligatory ones are marked. Neither of these is very satisfactory, because in a dynamic system change may take place, leading to different specifications for a Pred (although whether this is true for logical Preds is not clear). Also, as I have already remarked, it is not at all self-evident that the distinction between obligatory and optional is justified for semantic elements. Preds in the present model will be marked for the minimum number of arguments they sustain, and the roles which fill these (there will often, of course, be alternative sets). It will be assumed, unless stated otherwise, that the remaining (unspecified) roles may appear as well: it is these which we may call "optional".

The second problem is partly, of course, a matter of the definition and identification of roles. But insofar as this concerns relationships between roles and predicates, it is not merely a matter of role-definition. The problem is often posed in terms of particular NPs appearing to have double roles, e.g. Langendoen 1970: 66 sq., 102 sqq., who notes that the nail in The carpenter struck the nail is both patient (i.e. my Neut, Fillmore's Objective, later called Experiencer) and location, and that Ruby in Ruby is a soprano is either agent ('Ruby sings soprano'; 'Ruby "sopranos"') or essive (Ruby merely "identif[ies] the party designated by the predicate noun" (op.cit:102)); the latter is a case of ambiguity rather than multiple role-assignment. Nilsen (op.cit:45 sq.) argues that Instrument may be animate, citing the example Nixon used Agnew to promote his Viet Nam policy, and suggesting that Agnew represents animate Instrument. But in the sense intended, it naturally follows that Agnew promoted Nixon's Viet Nam policy, i.e. that Agnew is agentive, (other senses, in which Agnew is being used as an example, or as an unwitting pawn, or as a lever in some power struggle, i.e. in general, senses in which the former Vice-President represents something less than a functioning, sentient being in control of his own actions, may well be instrumental). Could Agnew be agent/instrument? It seems to me that the instrumental sense is hardly possible in the intended interpretation, as the alternative instrumental form is ungrammatical: Nixon promoted his Viet Nam policy with Agnew (where with ≠ 'together with'). Thus Agnew appears quite

clearly to be agentive. But can there be two agents in a single sentence? Answer: yes, if they are conjoined, or one is subordinated to the other. Lehrer (1974:42), in fact, argues that the role of both arguments with certain reversible surface predicates (notably buy and sell) is agentive, and that the difference which leads to one being surface subject (with the appropriate verb) is a matter of focus.

Langendoen's assignment of both patient and location roles to the nail above seems to me equally dubious. I would argue that there is an important semantic distinction between The policeman knocked on the door (in which the door is Goal) and The fairy danced on a toadstool (in which a toadstool is Location). The difference between Goal and Location is that Goal represents an argument of the Pred knocked, whereas Location is a further predication on the subject or remainder of the sentence (The fairy danced and This/the fairy was on a toadstool). Thus the nail is clearly not location, since neither the carpenter nor his action was located on a nail. Is it, on the other hand, patient/goal (rather than patient/location)? In other words, what is the difference between patient and goal? Consider the following pair: Harry banged the wall/Harry banged on the wall. In the former, the wall is regarded as an object which is affected in toto by the activity of the predicate; in the latter, it is an object only part of which is affected by the action, namely the part directly in contact with the (unspecified) instrument. I would certainly want to associate the former with the patient role, i.e. the "experiencer" of the action (Neut in my terms). I am not so happy about relating the latter to the Goal role, since I question the unity of this role, which seems to cover Destination, Purpose, Intent, Patient, Result and perhaps others (indeed Nilsen, op.cit. regards the Source-Goal dichotomy, in various of its aspects, as logically including all the roles).

Finally, the putative role essive (Langendoen, op.cit.:102; Stockwell et al. 1973:9, 29) seems rather doubtful, semantically. It is used for the subject of predicate nominals (i.e. with BE used copulatively): and that really is all one can say about it. The trouble is that this is not really a semantic assignment, but a syntactic one, and one moreover which is not invariable, as we have seen. Thus, Ruby was agentive rather than essive in the sentence Ruby is a soprano; this is perhaps even clearer in the comparison between Zeke teaches and Zeke is a teacher,



and I would claim that Zeke is agentive in both. In fact, I can discern no need for essive at all. The subject of copulative sentences seems to be agentive with a nominal complement (and I have taken this to extend to predicate proper nouns, too, for the most part, though this varies with the role of the embedded proposition, which, particularly in the cases of Ag and Neut, is governed by the predicate commanding the embedded proposition); neutral with an adjectival complement (i.e. the "experiencer"), and locative, temporal etc. with a sentential complement.

#### 4.23 Some transformations

The transformational rules I am most concerned with are those which operate to lift certain nodes, together with all they dominate, and adjoin them to a node of the same type in the next higher S. These are known as raising transformations generically, and their description, and sometimes specification, can be found in McCawley 1968b, 1970c (for Predicate-raising), and in Kiparsky and Kiparsky 1970, and especially Postal 1974 (for Subject-raising). Since the term "subject" stands for, in my view (and apparently in that of Postal, too, inchoatively: cf. 1974:27 etc.), a low-level derived clause-arrangement covering several role-combinations, I prefer to use the term Argument-raising for the latter rule (since the term "subject" does not appear very useful at this deep level).

The rule for Predicate-raising, since it operates on a structure like (17) above, takes a slightly different form from that informally described in McCawley (1970c:295): "Predicate-raising adjoins the predicate of the lower sentence to the right of the predicate of the upper sentence". In my formulation, the whole S containing the lower predicate is raised and Chomsky-adjoined to the upper predicate (McCawley's trees are unlabelled, but the adjunction seems to be sister-adjunction), leaving only its commanding role behind:

#### 23. Predicate-raising (optional)

$$\text{SD: } W - S[\text{Pred}_1 - X - S[\text{Pred}_2 Y]_S - Z]_S$$

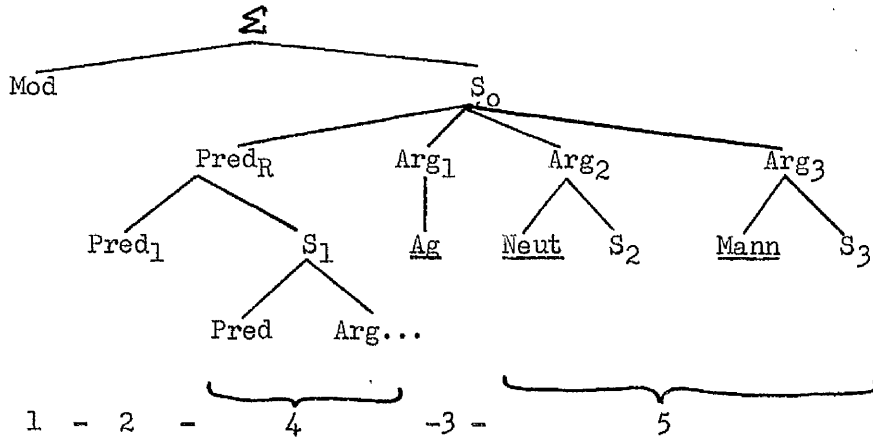
$$1 - \quad 2 - 3 - \quad 4 \quad - 5 \quad \Rightarrow \quad 12+43\emptyset 5$$

$$\text{SC: } W - S[\text{Pred}_R [\text{Pred}_1 - S[\text{Pred}_2 Y] S] \text{Pred}_R - X - Z]_S$$

$$1 - \quad \quad 2 - \quad 4 \quad -3 -5$$

This yields the derived structure (23'), from (16e) above:

23'.



The second raising rule I wish to specify is found in its earliest form in Rosenbaum 1967 under the name pronoun-replacement (later, it-replacement). As Subject-raising, it is informally described by McCawley (*ibid.*): "Subject-raising takes the subject of the embedded sentence and puts it outside and to the left of that sentence". McCawley deliberately leaves the exact position of the raised subject in derived structure vague because there are in fact two operations: one raising to upper subject-position (sometimes called subject-to-subject raising), and one to upper object position (thus subject-to-object raising). Which takes place depends on the upper predicate: some, such as be certain, seem, pretend, require the former kind; some, such as believe, consider, the latter, (see Postal 1974 for details). Argument-raising as I formulate it raises a role (with its sister S) out of its S and Chomsky-adjoins it to the left of its S, as an Arg node:

24. Argument raising (optional)

SD: A - S<sub>1</sub>[Pred<sub>1</sub> - B Arg[- C - S<sub>2</sub>[Pred<sub>2</sub> - Arg[Role S]Arg -D]S<sub>2</sub>]Arg -E]S<sub>1</sub> -F

1 - 2 - 3 - 4 - 5 - 6 -7 -8 -9

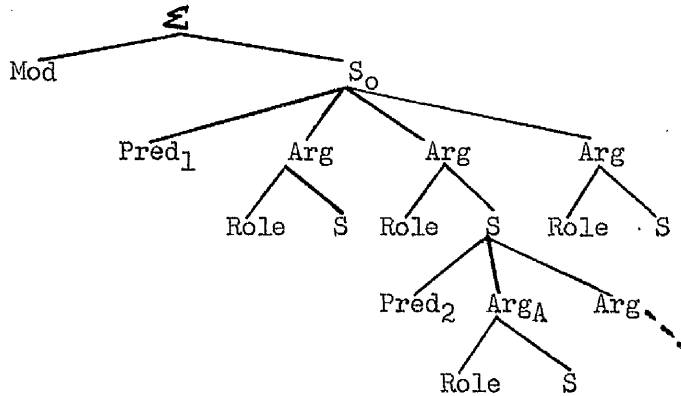
1 2 3 4 5 6 7 8 9 ⇒ 1 2 3 4 6 + [5 Ø 7] 8 9.

- Conditions: (i) Role = Ag, Neut, Loc, Purp...  
 (ii) Pred<sub>1</sub> is an R-trigger.

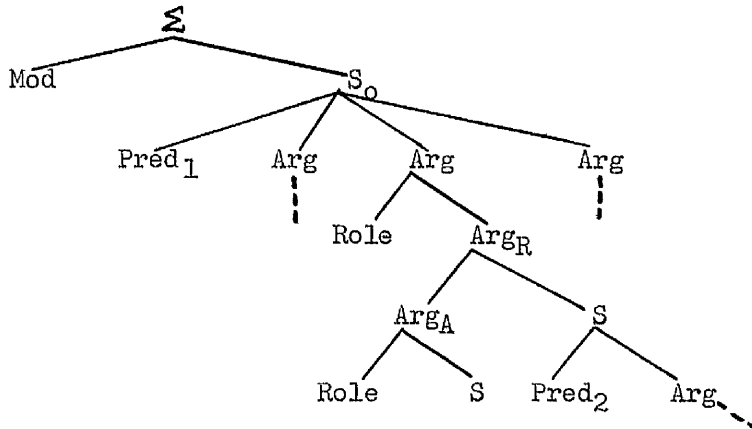
SC: A - S<sub>1</sub>[Pred<sub>1</sub> - B Arg[- C - Arg<sub>R</sub>[Arg[Role S]Arg -S<sub>2</sub>[Pred<sub>2</sub>-D]S<sub>2</sub>]Arg<sub>R</sub>]Arg -E]S<sub>1</sub> -F

1 - 2 - 3 - 4 - 6 - 5 -7 -8 -9

giving the derived structure (24'') from (24'):

24<sup>i</sup>.

Given:  $\text{Pred}_1$  is an R-trigger.

24<sup>ii</sup>.

Rule (23) is, as far as I am aware, exclusively a prelexical rule (though the literature is not always very clear on this point; McCawley's predicates, for example, are not words, but semantic elements). Rule (24), however, is a postlexical rule (akin, as I have said, to Subject-raising); there is, though, a very similar prelexical role-raising rule which I suspect is really the same as (24), though the details are somewhat different. The main distinctions are that condition (2) of (24) does not apply, but instead a higher role acts as trigger for an identical lower role (in fact, coreference is assumed, though I am not sure what the general implications of this are), and the sister-S of the lower role is raised, leaving its sister-role behind. Thus, (24) raises a whole node (i.e. both role and role-content) whereas this prelexical rule raises the content only, though its role acts as the immediate trigger for the operation. The rule should therefore be called Role-content raising, but I have used the shorter, though less accurate, term Role-raising throughout (except when actually specifying the particular role: Agent-raising, Result-raising etc.).

25. Role-raising

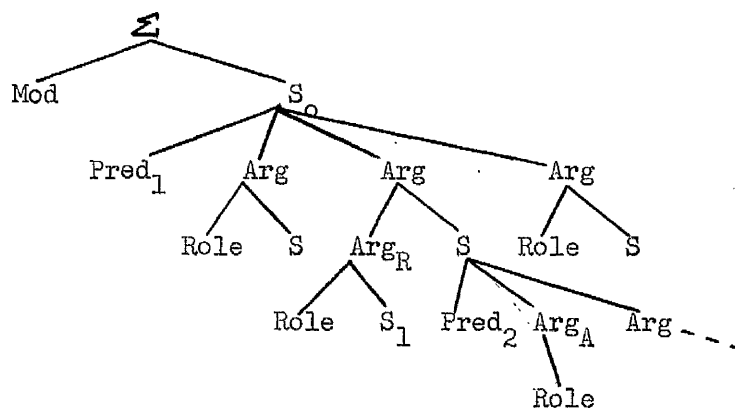
SD: W - Arg [Role<sub>1</sub> - S [X - Arg [Role<sub>2</sub> - S] Arg - Y] S] Arg - Z  
 1 - 2 - 3 - 4 - 5 - 6 -7  $\xrightarrow{\text{OPT}}$  12+534/67

SC: W - Arg [Arg<sub>R</sub> [Role<sub>1</sub> - S] Arg<sub>R</sub> - S [X - Arg [Role<sub>2</sub>] Arg - Y] S] Arg - Z  
 1 - 2 - 5 - 3 - 4 - 6 - 7

Condition: Role<sub>1</sub> is immediately dominated by a node which also  
 dominates Role<sub>2</sub>, and Role<sub>1</sub> = Role<sub>2</sub>, (where Role = Ag,  
Obj, Inst, Time, Loc, Manner...).

This would give the derived structure (25') from (24'):

25'.



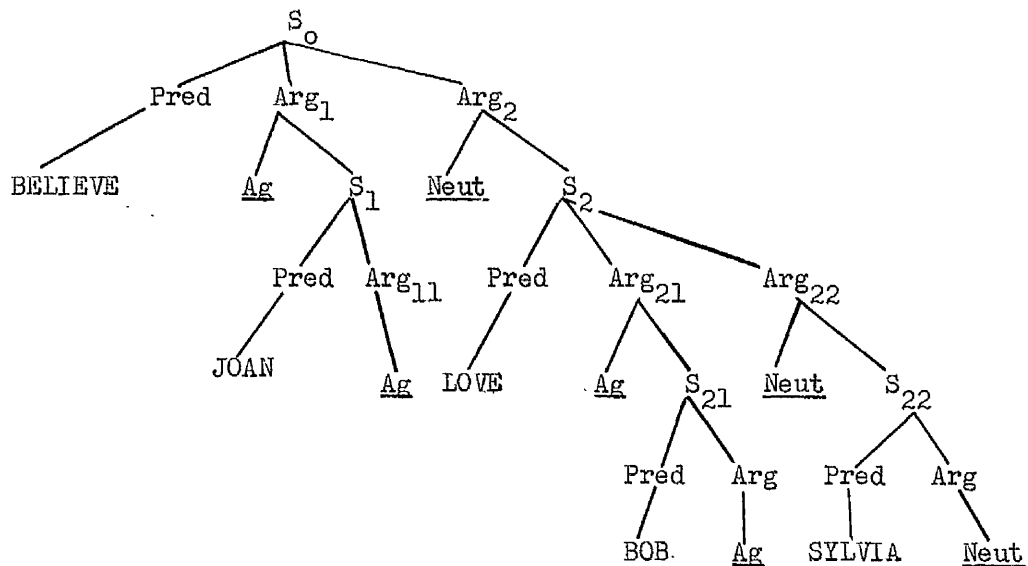
(25) is clearly very similar to (24), and a unified Argument-raising rule seems a priori likely. Notice, incidentally, that Role-raising, unlike Argument-raising does not stipulate that the raised argument must be the first in its S.

To demonstrate that (24) is equivalent to Postal's rule for subject-raising (op.cit: 24 sqq.), let us try it out on Postal's examples:

26. (a) Joan believes that Bob loves Sylvania;  
 (b) Joan believes Bob to love Sylvania;  
 27. (a) It happens that Bob loves Sylvania;  
 (b) Bob happens to love Sylvania:

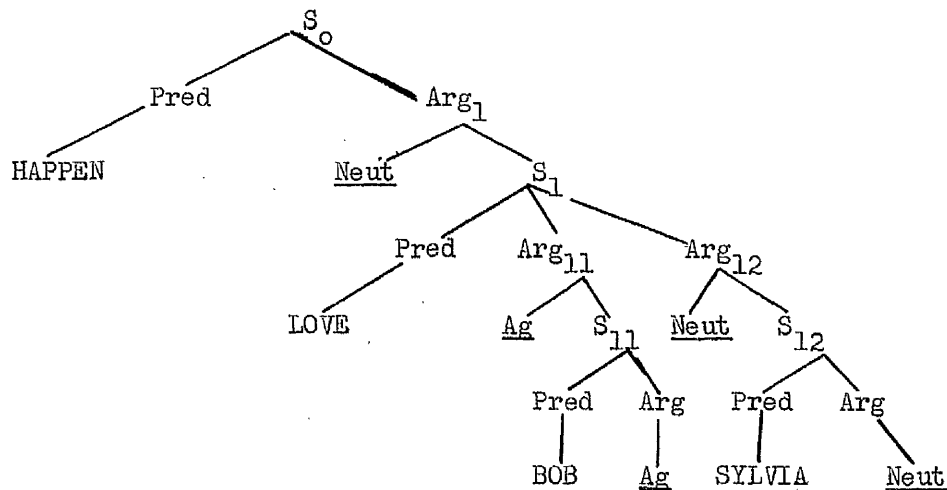
These would have the (non-fundamental) structures:

26. (c)



'Ag such that Ag is Joan believes something, namely, that Ag such that Ag is Bob loves Neut such that Neut is Sylvia'.

27. (c)

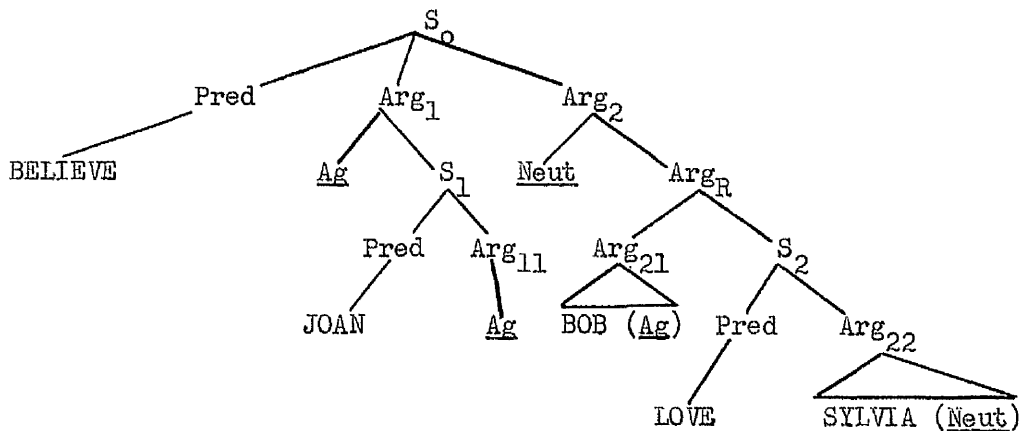


'Thing (Neut) such that Ag such that Ag is Bob loves Neut such that Neut is Sylvia happens (to be the case)'.

Both of these contain lexicalized subtrees already (i.e. prelexical applications of both (23) and (25) have already taken place, and a Lexical Insertion rule has replaced subtrees with appropriate lexical items). Scanning (26c) for the conditions which (24) imposes, we find that BELIEVE is, in fact, an R-trigger. Its S ( $S_0$ ) contains two possible embedded Ss

( $S_1$  and  $S_2$ ). Taking  $S_1$ , the first (and only) argument consists of Role only: it therefore does not meet constituent 6 of (24). (However, even if this condition is relaxed, we do not end up with an ungrammatical sequence, since Role-raising without S, which is the converse of the typical pre-lexical operation (cf. (25)), will result in the unlexicalized subtree (that is, unsubstituted by a single lexical item): 'one who is Joan'). Taking  $S_2$ , we find that it satisfies all the conditions; by rule (24), therefore, we can raise Role S of the first argument ( $Arg_{21}$ ), and Chomsky-adjoin it to the  $S_2$  node, giving:

26. (c')



Postal's Raising rule is as follows:

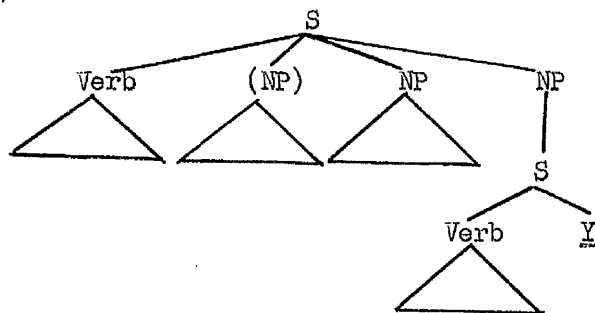
28. (a)  $\underline{X}$ , Verb, (NP), [ $_{NP}$ [ $_S$  Verb, NP,  $\underline{Y}$  S] NP]  $\underline{Z}$

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8  $\implies$  1 2 3 5 4 6 7 8 (1974:25 sq.)

The advantage of this rule, as Postal points out (cf. McCawley 1970c) is that it enables the unified treatment of both types of R-trigger (exemplified in (26) and (27)), since it is based on the VSO order suggested by McCawley (*ibid.*). The drawback is that it does not stipulate the roles of the NPs, particularly in derived structure. Thus the derived structure following rule (28a) is:

28. (b)



The relationship between the upper Verb and its three NPs is obscure. (28b) also appears to claim that the raised NP is no longer part of a bigger NP. However, (26c') shows that the basic role-allocation of (26c) is unchanged:  $S_2$  is still an NP, but one whose internal structure has been altered. This captures the correct entailment of the sentence: note that Joan believes Bob to love Sylvia, like Joan believes that Bob loves Sylvia does not entail Joan believes Bob, but rather Joan believes something. Postal's derived structure (28b) gives us no such information, and in fact suggests, incorrectly, that the raised NP is now quite distinct from its previous matrix. In other words, Postal has to rely on the meaning-preserving hypothesis alone to justify the semantic structure derived by his raising rule. In the present formulation, the derived structure preserves the underlying semantic structure without needing to lean on this global constraint. However, Postal does add a caveat postulating that the specification of grammatical relations would improve his rule (op.cit:27).

In two papers, (1973: already referred to; and 1975), Anita Hochster also questions the formulation of Raising. The former has only McCawley's informal statement of three raising rules - Predicate-raising, Negative-raising, and Subject-raising (McCawley 1970c) - to work on. Her main thesis is that all of these raising rules could be unified if the SD of the rule could stipulate VP as one of its constituents (which the VSO hypothesis does not allow, since it separates V and O). However, Hochster's thesis is possible, given VOS or SOV order also (as has already been pointed out above); however, it also depends on late lexical insertion, in shallow structure, after the cyclical transformations have operated. (This would, of course, make it possible for lexical insertion to follow the rule of Verb-Subject Inversion, also postcyclical, so that lexicalizations from VPs merely require to follow this rule). Hochster's unified Subordinate Clause Raising rule is as follows:

29.  $X, V, {}_S[NP, W]_S, Y$

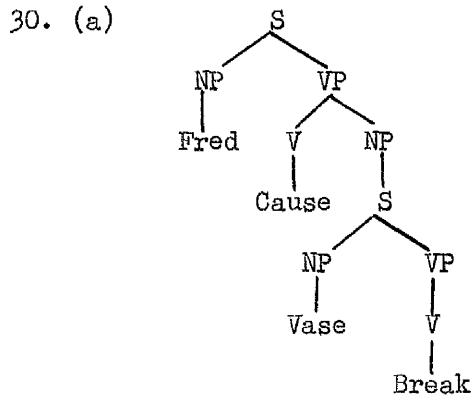
1 2 3 4 5  $\implies$  1 2 + 4 3  $\emptyset$  5,

where + = Chomsky-adjunction if  $W = V$

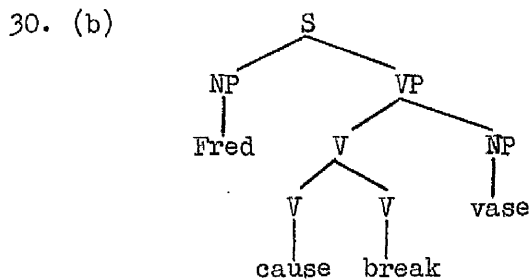
= sister-adjunction if  $W = VP$

As the SD of rule (29) shows, the constituent W, along with NP, exhausts its dominating S; thus, if  $W = V$ , V must be intransitive, and since intransitive Vs are also dominated by VP, it follows that both conditions

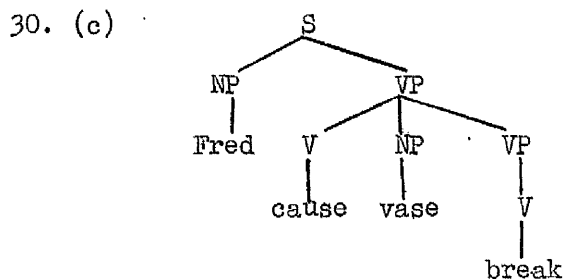
in (29) will apply: the intransitive V may be Chomsky-adjoined, or the VP, together with its dominated intransitive V, may be sister-adjoined; otherwise, VP represents transitive V + NP. This analysis handles embedded intransitives very neatly, e.g.:



If W is analysed as V, (30b) results (after tree-pruning of the lower NP node, cf. Ross 1969b):



Cause-break is then lexicalized into the causative verb break. If, on the other hand, W is analysed as VP in (30a), the VP is sister-adjoined to the dominating VP, and the lower NP node is again pruned, yielding:



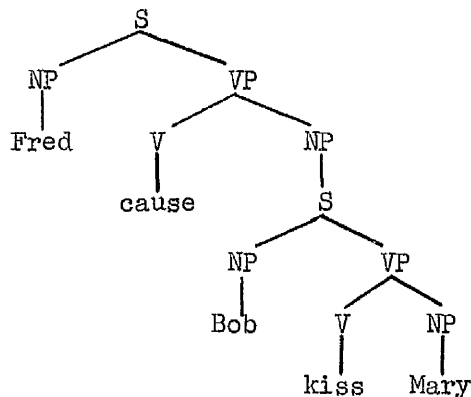
which gives the (subject-raised, according to Postal) sentence: Fred caused the vase to break. By Hochster's formulation, therefore, it is not the subject which is raised, but the predicate (when embedded and intransitive), giving what is a restructured VP. My quarrel with this elegant solution is similar to my argument against Postal's raising rule: and that is that the derived structure actually runs counter to the semantic



structure. Thus, although we can infer that 'Fred acted' ('Fred VP-ed'), we cannot infer that 'Fred caused something' from (30c). It remains to be seen whether arguments of this type have any validity in general, but in the present work I propose to assume that there are two raising-rules, the second of which (Role-raising) is subject to some only partly-understood conditions when postlexical.

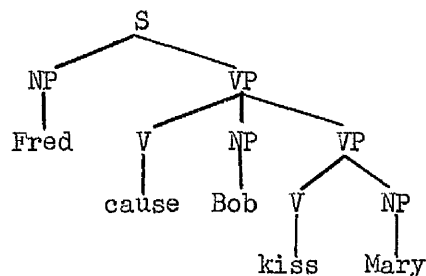
On embedded transitives, Hochster claims that only VP-raising is possible, i.e. in McCawley's terms, that only Subject-raising, and not Predicate-raising, may apply to such structures. Hochster uses the example:

31. (a)



"only VP's will be raised from embedded transitives, and no transitive predicate can be adjoined to a higher predicate to form a 'potential' lexical item. That is, I am claiming that such a combination of elements will never correspond to a lexical item", (op.cit:14). The derived structure of (31a) therefore, is:

31. (b)



yielding Fred caused Bob to kiss Mary (which suffers from the same entailment deficiency as discussed above). However, there are at least three ways in which V only may be raised from an embedded transitive, i.e. in which Predicate-raising takes place:

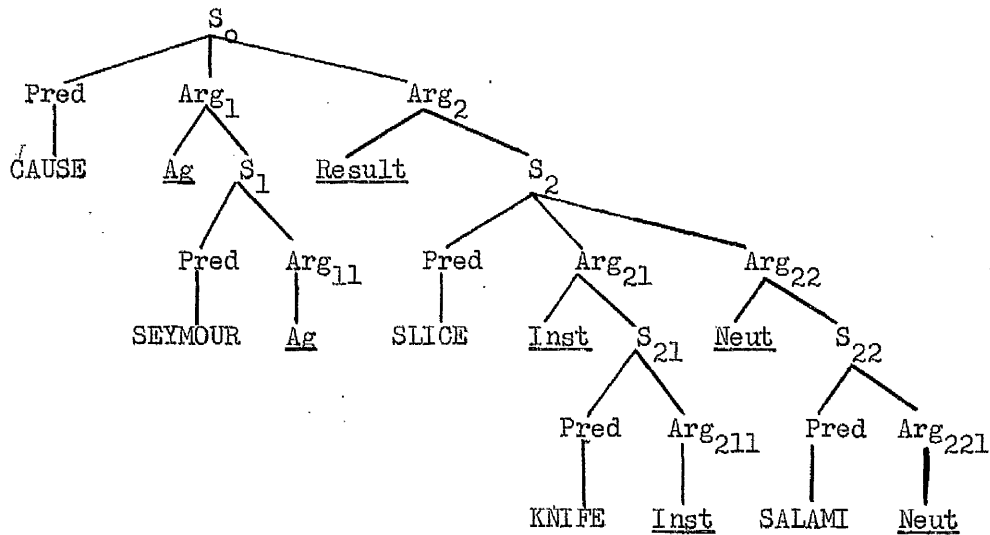
(i) In instrumentals of the kind discussed in Lakoff (1968c). Thus we might relate the sentences:

32. (a) Seymour sliced the salami with a knife;

(b) Seymour caused (used?) a knife to slice the salami;

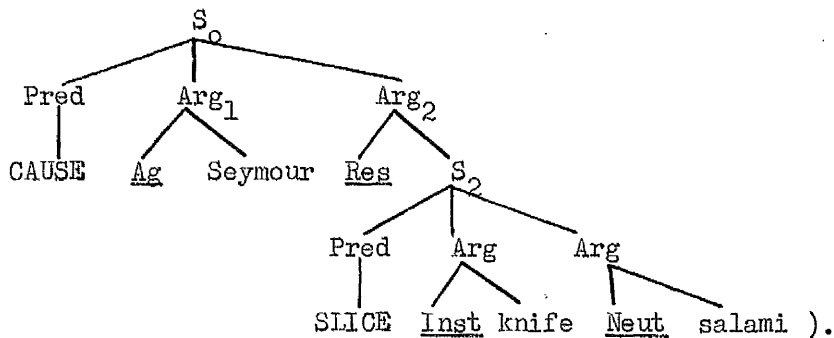
(c) Seymour caused the salami to be sliced with a knife.  
to an underlying structure of the general form:

(d)



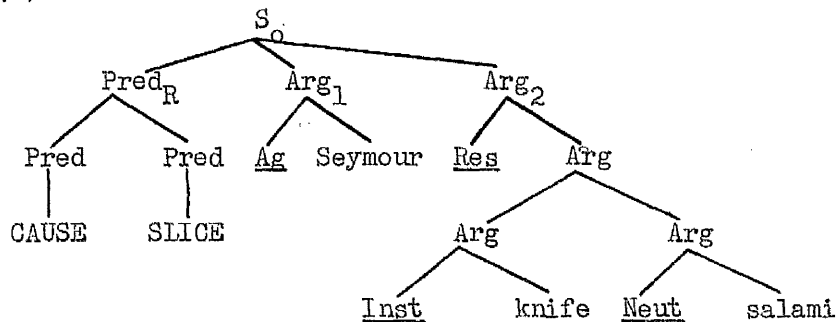
(The simplified version of this is:

(d')



Predicate-raising on SLICE yields:

(e)



The lexicalized predicate here is clearly (causative) slice, but the Arg<sub>2</sub> constituent clearly needs restructuring (although semantically, the relationship between knife and salami is reasonably presented as the result

of the slicing). Obligatorily, though, under conditions which I do not understand, one of the arguments under  $Arg_2$  becomes surface-structure object, while the other is set off with a preposition:

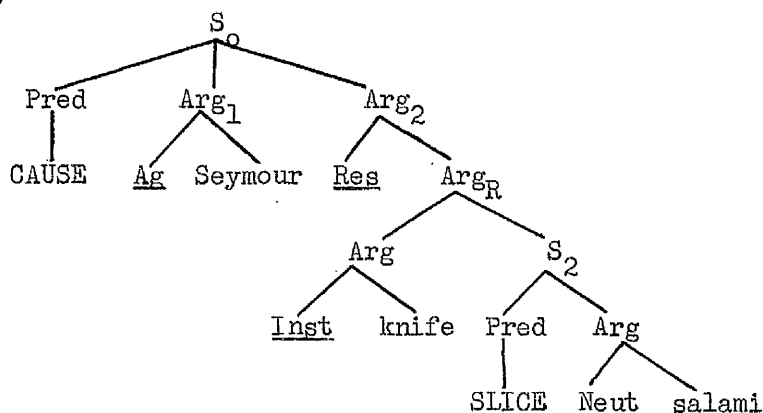
32. (a) Seymour sliced the salami with a knife;

(f) Seymour sliced a knife into the salami.

(However, these appear to be not quite synonymous).

Argument-raising on (32d') gives:

(g)



which is (32b).

(32c) is the result of Passive on  $S_2$  (which merely permutes the two arguments), followed by Argument-raising. (The only problem here is the use of with rather than by in the passive; however, this is regular for passivized Instruments).

(ii) With symmetric predicates (cf. Lakoff and Peters 1969). Thus Hochster (op.cit.) points out that the sentence

33. (a) Fred caused Bob to kiss Mary

has no predicate-raised form with cause-to-kiss lexicalized; she claims this is a systematic lexical gap. I would claim that it is an accidental gap, since other verbs substituted for kiss do have a lexicalized predicate-raised form, e.g.

(b) Fred caused Bob to marry Mary

(= [in one sense], Fred married Bob  $\left\{ \begin{array}{l} \text{to} \\ \text{and} \end{array} \right\}$  Mary)

(c) Fred caused Bob to meet Mary [in one sense]

(= Fred introduced Bob  $\left\{ \begin{array}{l} \text{to} \\ \text{and} \end{array} \right\}$  Mary)

(d) Avogadro caused hydrogen to mix with oxygen

(= Avogadro mixed hydrogen  $\left\{ \begin{array}{l} \text{with} \\ \text{and} \end{array} \right\}$  oxygen.

The fact that \*Fred married Bob Mary is unacceptable, seems to suggest that there are other important rules preceding predicate-raising, whose

function is either to conjoin the two terms, or else to mark one Dative etc. Thus, Fred caused that Bob married Mary  $\xrightarrow{\text{CONJOIN}}$  Fred caused that Bob and Mary married. The derived joint subject may then be raised in the ordinary way, giving

(e) Fred caused Bob and Mary to marry.

Marry may then be predicate-raised giving CAUSE-MARRY, i.e. marry.

(iii) With show. For at least this form, there is evidence not only of predicate-raising, but also of a derived structure for the remaining arguments which looks rather like (32e):

34. (a) Fred caused Bob to see Mary;

(b) Fred showed  $\left\{ \begin{array}{l} \text{Bob Mary} \\ \text{Mary to Bob} \end{array} \right\}$ .

Hochster's analysis meets problems with all of these observations. Taking it, therefore, that her solution, though elegant, is attended with great problems, I shall assume that Predicate-raising is a separate rule from Argument-raising. This is partly because Argument-raising (and, indeed, Subject-raising) is, as far as I know, not a rule which specifically contributes to lexicalization, unless of course some unification with Role-raising (which does so contribute) can be effected. As far as I know, the latter rule is original to the present writer (though perhaps implied in Bach 1968).

#### 4.3 Lexicalization

Let us look first at pre-lexical structure. My basic premise will be that synonymous lexical items will have identical semantic structures, near synonyms will have almost identical semantic structures, and so on. (As a matter of fact, my even more basic premise - which I hope to discuss in another paper (forthcoming a) - is that lexical items in fact do not "have" semantic structures, or meanings at all. I believe it can be convincingly shown that lexical items are merely associated with given meanings at any given time, and that the particular configurations of semantic material which make up perceived "lexical meanings" are subject to alteration, modification and change, not only from one period to another, but equally from one use to another, cf. my remarks in section 2.16 above, and my paper on semantic change (Werth 1974a). Synonyms may, but not necessarily, turn out also to function identically in subsequent structure, i.e. to be the same "part of speech", but this is not a semantic consequence,

but results from the particular semantic configuration and node-dominance relationship which the items in question are subordinate to. Thus, many surface nouns are clearly verbal in force, and upon examination they almost invariably turn out to be verbal in derivation as well, e.g. temptation, transmitter, handshake, search. Sometimes these deverbal nouns are modally or aspectually marked, e.g. a buy (that which has been bought), a drink (that which may be drunk), and there may be co-occurrence or syntactic restrictions not found with non-deverbal nouns, though we need not go into these facts here. Some surface nouns with verbal force have no verbal equivalents, either because the nominal has been borrowed from another language (in which the verbal equivalent, that is, source, does exist), or else because the verb has become extinct. A well-known example of this is aggression (<sup>\*</sup>aggress according to McCawley 1968b does not exist, and he cites Lakoff (1965, published 1970). However, as Lakoff points out there, e.g. 85 sqq., dictionaries do in fact contain the item, unmarked for archaicism, rarity or dialect restriction. This is therefore a problem (i) of idiolectal differences, and (ii) of "central" vs "peripheral" vocabulary, both of which we may expect to be problematical with accidental lexical gaps). To this, we may add contempt (contemn is obsolete), and revulsion (revulse is obsolete). Sometimes, particularly with aspectually and modally marked nouns (cf. above), in which in my terms Result-raising has operated, the verbal force of the nominalization is likely to diminish with time, and will often disappear altogether, though there may be idiosyncratic variation in this (e.g. for me, a (bread-) roll is felt to be non-verbal, whereas a (Swiss) roll or a (bed-) roll still is verbal). Similar remarks apply to the other major parts of speech. The question is, therefore, what semantic structure underlies these facts.

Emmon Bach, in his important 1968 paper, makes the suggestion that, for various reasons connected with their ease of derivation, certain nouns have underlying them restrictive relative clauses (a similar proposal is made in Thorne 1972a). I wish to go further and suggest that all "contentives" (nouns, verbs, adjectives, adverbs, roughly) have underlying them whole propositions, whose predicates and arguments consist of semantic primes. Furthermore, I wish to propose that different lexical items, whatever their superficial form or category, will share part of this underlying structure to the extent that they share meaning. That is to say, partial synonymy is reflected by partial identity of underlying structure. This is uncontroversial

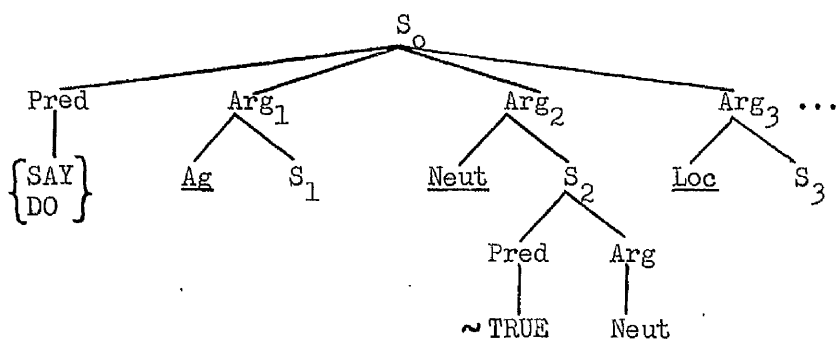
in TG semantics, I think. However, in a theory which rejects the traditional notion that words "have" meaning, but which instead proposes that lexical items are accidentally associated with semantic structures, in such a theory it becomes necessary to recognize the fact that a semantic tree may in its entirety be associated with a word or even a number of separate words, while at the same time different parts of the same tree may be associated with other words. This set of words, which need not be functionally or morphologically related, will all be at least partially similar in meaning, and will constitute, in Saussurean terms, a "semantic associative set". I shall now attempt to substantiate these remarks.

Let us first consider the following lexical items:

35. (a) <u>act</u> (a part)	<u>rôle</u>	<u>actor</u>	<u>play</u>	<u>theatre</u>
<u>lie</u> (tell lies)	<u>part</u>	<u>player</u>	<u>drama</u>	<u>playhouse</u>
<u>pretend</u>	<u>falsehood</u>	<u>performer</u>	<u>tragedy</u>	<u>stage</u>
<u>play</u> (a part)	<u>pretence</u>	<u>liar</u>	<u>comedy</u>	
<u>disguise</u>	<u>fiction</u>	<u>con-man</u>	<u>story</u>	
<u>dissemble</u>	<u>fraud</u>	<u>impostor</u>		
<u>sham</u>	<u>lie</u>	<u>impersonator</u>		
<u>feign</u>		<u>mimic</u>		etc.

I am claiming, therefore, that all of these items are at least partially synonymous, which in terms of the theory I am putting forward means that they have some semantic structure in common. This, I would suggest, is something like (35b), (ignoring 'Mod' for the time being):

35. (b)



If this were a postlexical structure, with the roles filled in by appropriate lexical items or grammatical formatives, and Verb-Subject Inversion (cf. McCawley 1970c) and other surface-structure formation rules having taken place, (35b) would represent a surface sentence like (35c):

35. (c) Someone says or does something such that this is false  
(in some place)...

(The Loc and any further arguments there might be are meant to be optional in the sense discussed above. The deictic expressions in the surface-"translation" (35c) represent the "binding" of a role either by virtue of its having the same subtree specification (e.g. Ag  $S_1$ ) or of its being dominated by a higher occurrence of the same role (as with Neut), in which case, the lower occurrence will be unspecified).

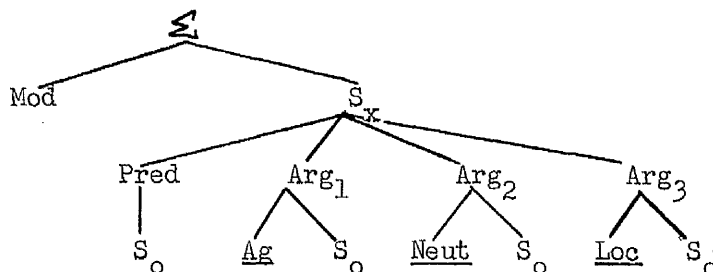
Prelexically, however, transformational rules (such as those discussed in the previous section) can apply, to "incorporate" (cf. Gruber 1965) some parts of the structure (35b) into other parts of it. The raising transformations, as we have seen, operate to lift certain nodes, together with all they dominate (and, in some cases, command), and adjoin them to a node of the same type at a higher point in the tree. At various stages of the process, rules of lexical insertion can take place, to substitute lexical items for whole trees, or, more often, subtrees.

We are now in a position to try out the rules (23) and (25) on a structure which will end up containing several of the closely-related items in (35a), occupying different roles:

36. (a) An actor played a part in a theatre.

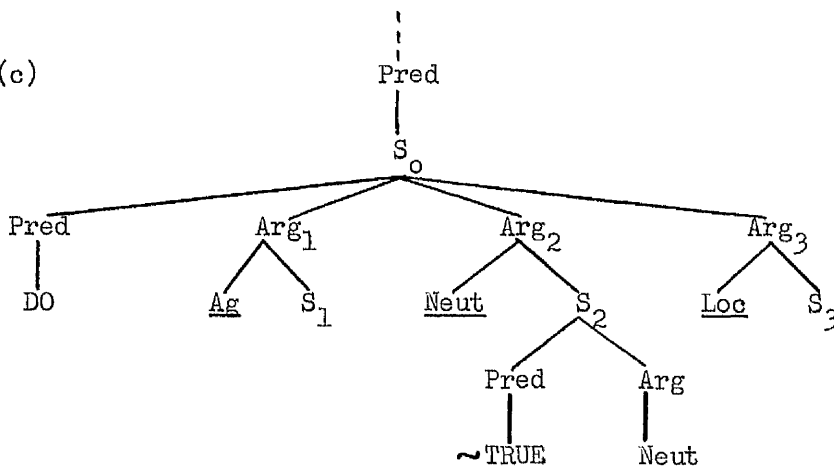
The underlying structure of (36a) can be represented as the high-level tree (36b), in which the embedded proposition  $S_0$ , occurring four times, is meant to refer to the structure (35b) above:

36. (b)



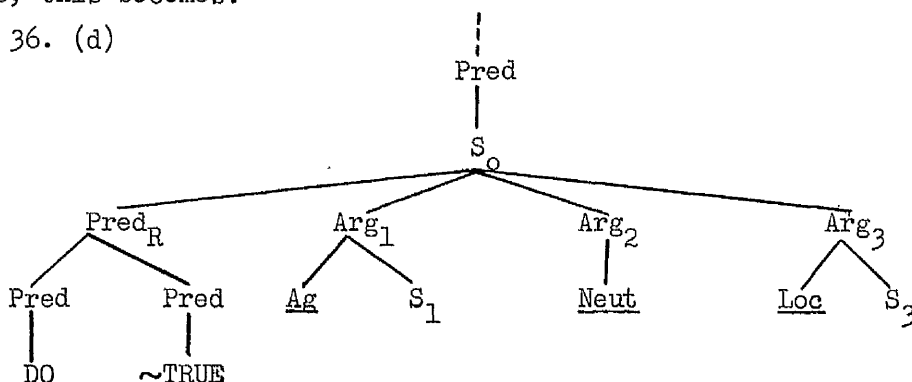
Since (36a) contains four items from list (35a), of which (35b) represented the common meaning, this structure occurs four times, as a subtree of different roles and as a predicate-subtree. Such lexical items as actor, played, part, theatre are, it is claimed, lexicalizations of the results of different raising transformations on  $S_0$  of (35b). It will simplify the presentation of this if we consider each of the nodes dominated by  $S_x$  in (36b) in turn:

36. (c)



With Predicate-raising on the Pred of  $S_2$ , and tree-pruning, as discussed above, this becomes:

36. (d)



In "Semantese", the translation of this is:

36. (e) 'For Ag to do -false something (in some place)'.

(The paraphrase has no significance except presentationally). A lexical insertion rule will then apply to replace the whole of  $S_0$  here with an appropriate lexical item. I conceive of this type of rule as forming an adjunct to what I call a Configuration Archive. Briefly, this is an open-ended collection of semantic structures such as (36c) and (36d), (though not necessarily these), together with substitution rules linking lexical items with these structures or parts of them. The substitution rules are what I have called "lexical insertion rules", but it should not be assumed that the Archive or these rules are anything like the lexical subcomponent of the ST Base, for example. One important difference, as I see it, is that in the Archive, words are not considered to have an inherent semantic structure, or be composed of inherent semantic features. The idea that words do possess such attributes is inculcated into us by our lexicographical tradition, which gives them a spurious fixity and exactitude. In fact, of course, a dictionary is no more than a record of some of the semantic



configurations which have been or have come to be associated with a particular form. Dictionaries can be neither exhaustive nor up-to-date, since they can only record comparatively few uses of a particular word in a particular sense (which may in fact be several subtly-distinct senses grossly lumped together) while ignoring the many other uses which are perhaps never written down and which are gradually altering and minutely varying minute by minute and from speaker to speaker. The Archive, too, therefore, is in constant flux: it represents the fluidity of the lexical resources of any speaker. The semantic configurations persist, we may assume, though with additions as new "concepts" (as they tend to be called) come into the language. What changes - and rapidly - are the associations between lexical items and configurations, (cf. Werth, 1974a). The discrepancy between form and meaning is an ancient observation, which has survived drastic changes of linguistic theory virtually unscathed. Thus ST has lexical items "pre-existing", as it were (provided by the lexicon in the Base), and given semantic content by the semantic component, and phonological form by a combination of the lexicon (which also specifies some semantic/syntactic features) and the phonological component. Thus, from their earliest formulation in ST, words embody in outline both form and meaning. In the Archive, however, meanings are quite clearly basically specified, while forms are secondarily related to them (cf. my comments in section 4.22).

Almost every item in list (35a) could be substituted for (36d), though the node 'Pred' helps to ensure that a smaller subset of the list, marked as occurring under 'Pred' with a high probability, will in fact be chosen. That is to say, we should find the sentence

37. ?Sir Lawrence Olivier acted humorously  
comprehensible, though odd, since the form actor has a low probability rating as Pred. High probability Pred forms for this structure include act, play, perform, stage, enact, rehearse etc. (distinguished from other uses of the same words, e.g. act, play, by perhaps a Purpose Argument, marked 'drama' or 'entertainment'). It might be objected that it begs the question to mark items for probabilities, since it could be argued that the naïve learner has no means of ascertaining levels of probability, and uses some such notion as "correctness" to regulate his own speech and that of others, i.e. that probability is a linguists' construct. Thus it should be obvious in the grammar that a form such as actor does not occur correctly as a predicate.

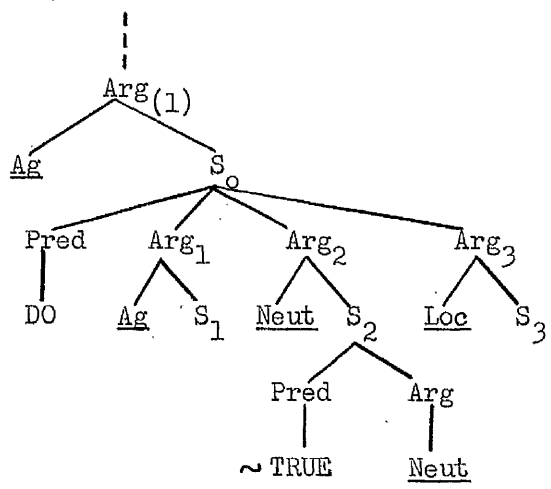
There are two points to make here, one metatheoretical, the other lexicomorphological: first, as I have argued in section 2.15, it is the either-or notion of correctness, or grammaticality, which is the artificial linguists' construct - the naïve speaker can recognise that some sentences are less probable than others (for various reasons), and with enough inducement (a large proportion of which is inherent in the social conventions governing language use) can probably contextualize all but the least probable. The idea of degrees of acceptability (and even of grammaticality, cf. Chomsky 1965) is much more reasonable as an evaluation of human behaviour than the simple dichotomy "correct/incorrect", given that behaviour, including linguistic behaviour, can usually only be judged relative to its context. Arriving at the probability ratings, presumably on the basis of observation and elicitation, is altogether more difficult than talking about it, however. The second point concerns the fact that a word such as actor is of course marked with an agentive suffix; this tends to fix its function. It is possible to find de-agentive verbs (e.g. tailor, butcher), but they appear to be rare and semantically restricted, (i.e. to tailor does not normally mean 'to be a tailor', though it can: he tailored for a living. Even so, it may be noted that there is no lexically-related verbal root <sup>\*</sup>tail). The borderlines between the superficial word-classes are highly flexible, as the following examples show (all of them genuinely observed):

38. (a) He navvied for three years before taking Holy Orders;  
 (b) Are you coffee-ing? (= having coffee);  
 (c) Boycott has been stonewalling for four hours (= acting defensively, like a stone wall);  
 (d) The status-report is all systems very much go.

It would not therefore be reasonable to mark actor as obligatorily nominal, since such a sentence as (37) is actually quite clearly comprehensible (and given that the item to act also exists, a predicate item to actor might have some additional substructure to differentiate it, e.g. the subtree underlying in an affected manner). On the other hand, this flexibility is clearly limited by the lexical resources associated with the particular subtree. A large amount of research into the processes of lexicalization is urgently required.

Taking the second branch in (36b), we have:

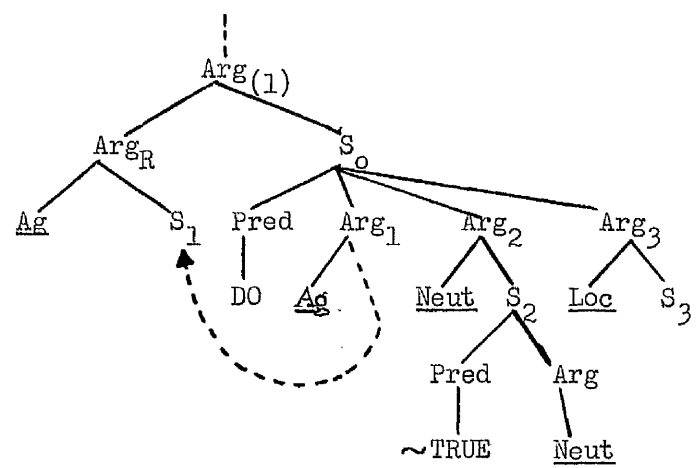
36. (e)



'Ag such that Ag does something which is not true somewhere'.

The topmost role (under Arg(1)) is the commanding role, regulating by the condition on rule (25) the application of role-raising to a lower node of the same label. Role-raising in this case will therefore apply to Arg<sub>1</sub>:

36. (f)



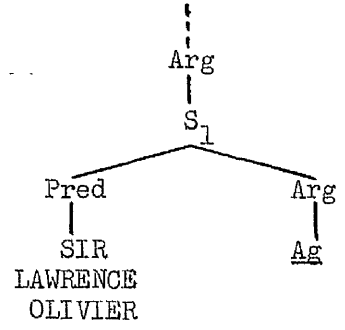
'Ag (such that S<sub>1</sub>) who does something which is not true somewhere'.

With Predicate-raising, as before, and assuming that the lexicalization of DO ~TRUE is something like dissemble or pretend, a synonymous Semantese rendering would be:

'Ag (such that S<sub>1</sub>) who pretends something somewhere'.

Note that by rule (25) the raised element has to be S<sub>1</sub> alone, without its sister Role. Assuming that the expansion of this S provides the further content of Ag in its Argument, and that it is something like:

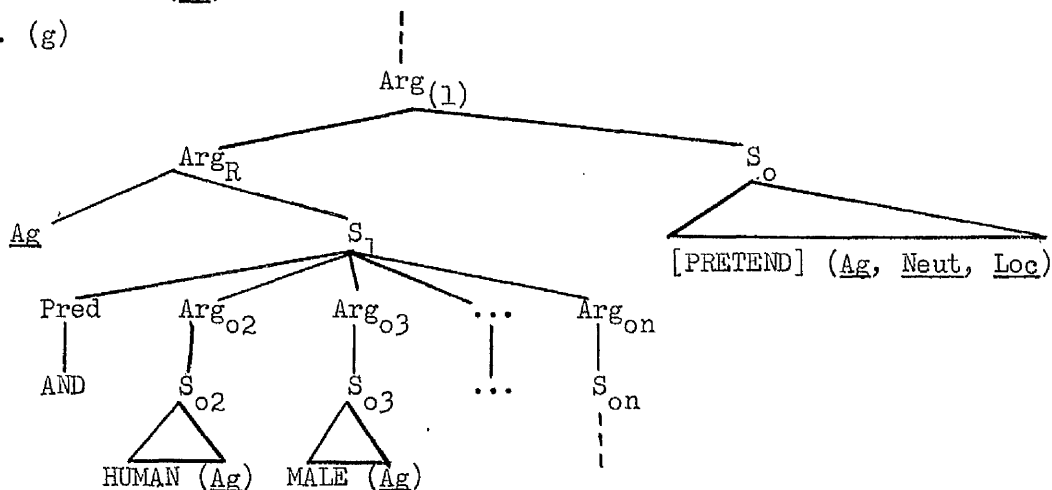
36. (f')



i.e. with a Pred consisting of a large poly-conjoint sequence of Ss subsumed under the label of (lexicalized as) a proper noun (or what the logicians think of as a "constant"), then this provides naturally for the expansion 'Ag who is Sir Lawrence Olivier who pretends something somewhere', or, with later lexicalization (for which, see below) 'actor Sir Lawrence Olivier'. Notice, too, that since the rule moves the role-content only, and the two nodes in question are necessarily identical, the result is equivalent to permuting the two entire nodes, upper Role, and lower Argument. There is a suggestion, however, (see section 5.2) that the adjunction resulting from role-raising should not be the rather unusual variety of Chomsky-adjointing given here, but rather replacement of the triggering role node by the raised S.

One more point before we leave (36f). There is, of course, more semantic information associated with such an item as actor than is represented in (36f), e.g. that it is normally used of a human male (while 'human female' + (36f) would normally be associated with, say, actress, and '† human' with mimic, which can be used of plants and animals as well as humans). This information, in the form of semantic primes, will be presented as part of the prelexical structure, though conjoined rather than subjoined to it. Thus in (36f), conjoined below S would be 'HUMAN^MALE' ... (Ag):

36. (g)



'Ag (such that Ag is human, and male, and ...) who pretends something somewhere'.

Notice that this proposal naturally separates the presupposed part of the meaning of the structure from the asserted part. Thus, to deny that Larry is an actor is not to deny that he is human, male, etc., but to deny that he pretends things in certain locations for certain purposes (cf. McCawley,

e.g. 1970a:172 sq.). The lexicalization of this, as already mentioned, would be actor, or player, or mimic, etc., depending upon the content of  $S_{O2} - S_{On}$ , (cf. (39) below).

In a similar way, the third and fourth arguments of (36b) are raised to give

'Neut which Ag pretends somewhere' and

'Loc where Ag pretends something', respectively,

which lexicalize as role, part, impersonation etc. and theatre, stage, playhouse etc. respectively.

A word about the application of lexicalization. Different lexical sets (such as (35a)) will of course vary in their fundamental structure. (35a) happens to be a set based on a predicate structure (act etc.). Other sets (e.g. milk, to milk, milkmaid, milker, milch-cow; garden, to garden, gardener; ship, to ship, shipper, shipment, shipping) are presumably based on arguments, i.e. they probably do not represent propositions at all, basically. Yet other sets are ambiguous between predicate and nominal bases (e.g. plant/to plant, plantation, planter). A possible means of discriminating would be from the relative semantic complexity of any given node in the basic configuration. Thus act etc. might be represented by something like the trees in (35) - (36), in which the 'Pred' nodes are specified, while the 'Arg' nodes remain semantically inexplicit. The basic nominals, however, will appear as parts of configurations expressing the wider lexical set in which they participate, e.g. milk would appear as a subtree of a configuration that perhaps starts with LIQUID (although presumably the predicate forms drink and flow would be associated with this same configuration at a fairly high level). We might also expect that primary structure for basic nominals would tend to be conjoined. This seems to me potentially to embody in a substantial way the rather elusive European notion of the "Semantic Field"; but a fuller discussion of this must await a later opportunity (cf. Lehrer 1974 for a non-formal account of the notion).

To return to the example in hand, however, what we have is, as I have stated, a basically predicate structure. The first lexicalization, therefore, will be of that predicate. Thus  $S_0$  in (36g) would be lexicalized as act or play, etc. (it has already been partially lexicalized, after Predicate-raising, as pretend, of course). Disregarding the conjoined Ss, this leaves a new configuration which we can represent as 'Ag[ACT]' 'one who acts' (while the third and fourth arguments of (36b) become 'Neut[ACT]' 'that

which is acted', and 'Loc[ACT]' 'place where acting occurs'). McCawley appears to refer to this sort of configuration in 1968b:75 sq. and fn. 4 in his discussion of nominalisations, e.g. inventor (Ag [INVENT], invention (Action[INVENT] or Result[INVENT])). (I have translated his terminology into my notation). These partly-lexicalized configurations are then free to enter into further raising operations which are, in a sense I shall discuss, post-lexical now. However, Role-raising may still apply to these partly-lexicalized structures, perhaps because their role-marking is still explicit and may act to trigger off the prelexical rule. Notice though that the upper Role may lift any S commanded by a lower identical role in the same Argument node, and that apparently this operation may apply without limit. Thus, there are various possible lexicalizations and combinations of lexicalizations if the various Ss of (36g) are raised in different permutations:

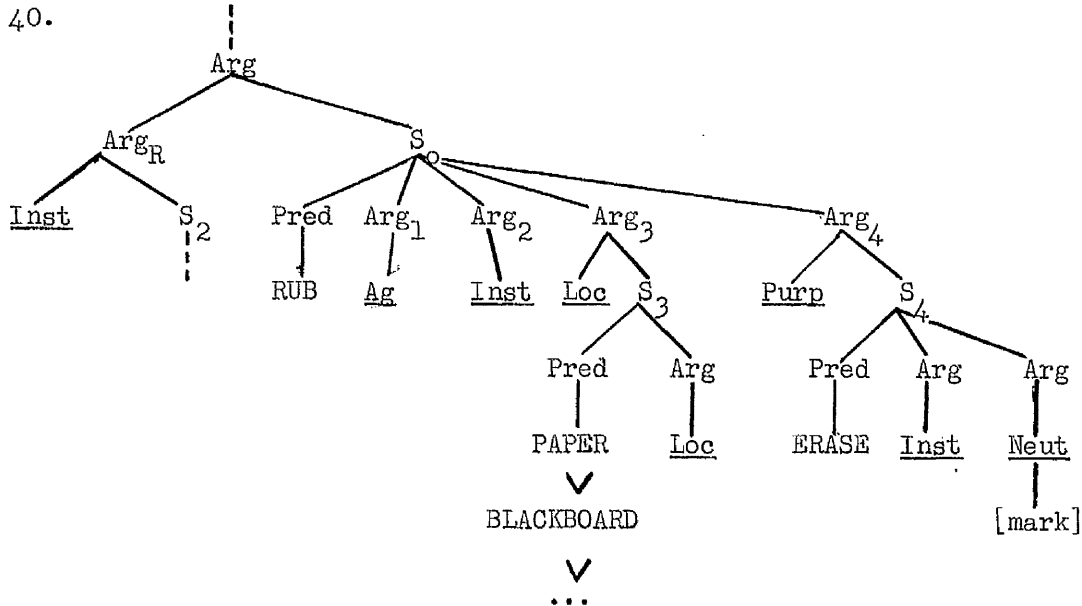
39. (a) Role only (i.e. rule (25) has not applied): 'the one who acts and is human and male', i.e. (Ag) (ACT) (HUMAN) (MALE);
- (b) Role + S<sub>0</sub>: 'the mimic who is human and male', i.e. (Ag-ACT) (HUMAN) (MALE);
- (c) Role + S<sub>02</sub>: 'the person who acts and is male', i.e. (Ag-HUMAN) (ACT) (MALE);
- (d) Role + S<sub>03</sub>: 'the male who acts and is human', i.e. (Ag-MALE) (ACT) (HUMAN);
- (e) Role + S<sub>0</sub> + S<sub>02</sub>: 'the player who is male', i.e. (Ag-ACT-HUMAN) (MALE);
- (f) Role + S<sub>0</sub> + S<sub>03</sub>: (no lexical item for a male non-human mimic), i.e. (Ag-ACT-MALE) (HUMAN);
- (g) Role + S<sub>02</sub> + S<sub>03</sub>: 'the man who acts', i.e. (Ag-HUMAN-MALE) (ACT);
- (h) Role + S<sub>0</sub> + S<sub>02</sub> + S<sub>03</sub>: 'the actor', i.e. (Ag-ACT-HUMAN-MALE).

Bach (1968) gives evidence for the essential correctness of the first of these as a shallow representation of the semantic structure of nouns (the man - the one who is a man, since it is parallel with the one who is working large ). My rules provide the content and the machinery of such representations. Two more points before we leave lexicalization. First, on the term "prelexical": McCawley uses this of transformations after the application of which lexical items can provably be inserted. Note, however, that in this use, no claim is necessarily being made that such transformations actually underlie lexicalizable structures. Thus in his 1968b paper,

McCawley argues that reflexivization is a prelexical rule since such a nominalization as Picasso's picture of himself must derive by way of some such underlying proposition as Picasso painted Picasso. In order for reflexivization to take place, he argues, the repeated NPs must be in a simplex S; but if painted is nominalized to picture, by the tree-pruning conventions, the expression is no longer an S, and therefore reflexivization cannot take place. Therefore, the reflexivization of Picasso to himself must take place, before the lexicalization (after nominalization) of (that which is) painted to picture; therefore reflexivization is prelexical. This does not suggest that reflexivization is necessarily a lexical transformation, although the existence of compounds in self- and auto- suggest that it can be (cf. Watt 1973:461 sq.). McCawley goes so far as to suggest that all of the transformations of the cycle (including passivization, Equi-NP-deletion, there-insertion, and dative movement) are prelexical. Presumably this is intended in the non-lexical sense of the word, since I for one cannot imagine a lexical item in whose derivation there-insertion had figured. The example of lexical Equi which McCawley gives (op.cit.:78) I find extremely dubious: he postulates that the word malingering "has a meaning which appears to result from ... Equi-NP-deletion", since it means 'pretend to be sick' which derives from x pretends that x is sick. He then makes what is in fact an unexceptionable statement: "Thus, treating malingering as deriving from a semantic structure corresponding to 'pretend to be sick' entails that Equi-NP-deletion apply prelexically and that malingering be inserted in place of a structure, which could only arise through Equi-NP-deletion". True: but is there any more reason to treat malingering as deriving from the Equi-NP-deleted pretend to be sick, than from the presumably pre-transformational (essentially) construction pretend that one is sick? Given that Equi for this predicate is optional anyway, it is difficult to see how it would be possible for the post-Equi structure to underlie the word rather than the pre-Equi. The danger, of course, is in treating one's paraphrases as though they actually are the meanings of the words they paraphrase.

The second point concerns the process of lexicalization itself, which I would maintain is essentially an arbitrary process. (By "lexicalization", at this point, I mean the choice of lexical items to substitute for given semantic configurations). Dialects may differ on this: some dialects may lexicalize a structure for which other dialects must use a phrase etc. (e.g. N. English nesh, equivalent to Standard English sensitive to cold);

some dialects may use different lexicalizations for the same structure from other dialects (e.g. British dummy, rubber; American pacifier, eraser). I would claim that these pairs actually lexicalize the same structure: for rubber and eraser, this might look like (40):



Thus, rubber takes its form from the predicate of  $S_0$  with what I take to be its "obligatory" arguments (cf. discussion in section 4.21), namely, in this case, Ag, Inst, Loc; however, eraser takes its form from the predicate of  $S_4$ , under the purpose node. Thus British English uses the basic action underlying the meaning to characterize the whole structure, while American English uses the purposive action underlying the meaning to do the same job. Both words, however, refer to the same class of objects.

Standard-theorists regard the lexicon as housing all the manifold irregularity of language, since it is in general impossible to predict the meaning of a word from its shape with any certainty. (Though, incidentally, if one views this from the other end, the problem shrinks into its proper insignificance: thus, given a semantic structure, the prediction of its associated lexical item(s) is readily seen to be a matter of some triviality). As I have tried to show, the so-called irregularity of the lexicon results not from the different "contents" of each lexical item, but simply from the process of lexicalization itself, a more or less arbitrary procedure of labelling semantic structures. This may proceed mnemonically or not (thus, if it suddenly became imperative



that English have a word for the back of the knee - perhaps because a strain of Asian 'flu caused swelling there - we might use the mnemonic kneeback or legcrook, or the non-mnemonic zonk, a new root, or boing, as it might be, a borrowed form); and it may relate to the whole semantic configuration, or part of it, or indeed none of it at all.

CHAPTER V

THE DERIVATION OF RELATIVE CLAUSES

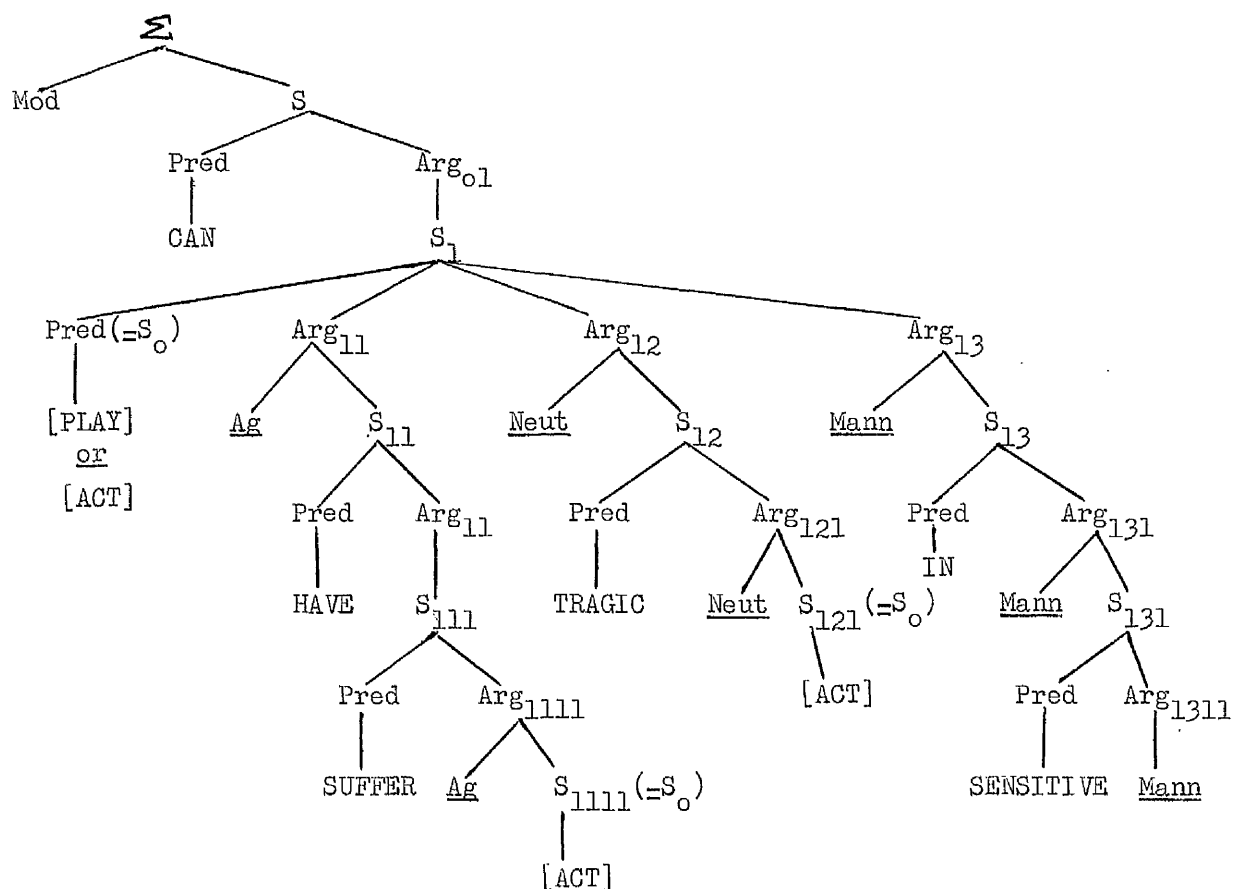
## CHAPTER V: THE DERIVATION OF RELATIVE CLAUSES

5.1 Restrictives: basic configuration

We are now in a position to derive restrictive relatives, taking for illustration a similar sentence to (36a) above (Ch. IV):

1. (a) The actor who has suffered can play a tragic role sensitively, in which each of the three lexicalizations of  $S_0$  (actor, play, role) is itself modified, by a restrictive relative, a manner adverb, and an adjective, respectively. A somewhat simplified tree for this would look like:

1. (b)



'One who has suffered who acts can play that which is acted which is tragic in a manner which is sensitive.'

This paraphrase represents (1b) without further raising or lexicalization other than for individual terminal nodes: thus  $Arg_{11}$  could be directly realized (after all obligatory transformations) as: 'one such that he (who acts) has suffered...'. With lexicalization of  $Arg_{1111}$  to actor,  $Arg_{11}$  would read: 'one, such that an actor has suffered'. With  $S_{1111}$  raised (by rule (25)) to the higher  $Ag$  node, we may derive the unlexicalized form

of the new node  $\text{Arg}_R$  ('one who acts who has suffered ...'), and the lexicalized form ('an actor who has suffered'), i.e. (1a).

The restrictive relative clause is therefore represented as a structure fundamentally similar to the prelexical semantic structures underlying certain words. Indeed, as argued in section 3.252 above, and in Bach 1968, there is some sort of close derivational relationship between them. The claim that I am making is that this relationship is, structurally speaking, one of identity. It does not appear to be the case that Restrictive-relative formation is post-lexical: indeed, as we have seen, the roles play an important part in the process.

On the semantics of restrictive relatives, the function of Role-raising explains how the antecedent (the higher role) comes to have semantic content, while the anaphor (the lower role) lacks all but the minimal information carried by the specification of the role in the metatheory. Furthermore, the embedding relationship (which I conjecture is the only one in the configuration grammar; i.e. all other embeddings are the derived structures of later rules governed by Focus, i.e. context-sensitive rules (in the sense of "context" expounded in Ch. II)), captures, I claim, the basic semantic function of the restrictive relative, namely that of restricting the meaning of Argument nodes, since the configuration  $\text{Role}^{\wedge}\text{S}$  is more specific in meaning than Role is by itself.

I argued in section 3.24 that the construction I called "pseudo-R" actually derived, via Focus-movement, from simple sentences. I suggested that such a sentence as:

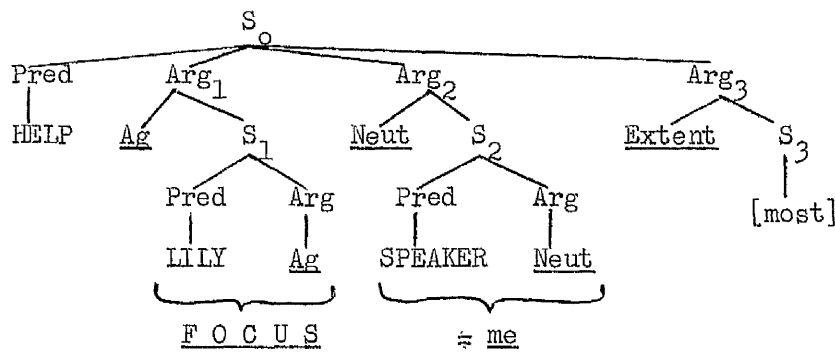
2. (a) The one who helped me the most was Lily.

actually derived from:

(b) Lily helped me the most.

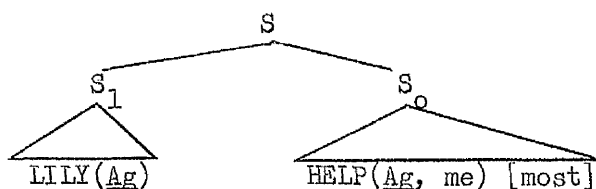
In fact, in order to make this generalization, which is backed up by the semantics of such sentences, we have to posit an underlying structure for (2b) precisely of the kind I have put forward in the foregoing sections:

2. (c)



As suggested in section 3.24, some part of the structure comes into focus (this is stipulated by the context), and this is moved into a superordinate position in respect of its S. However, with the model which has been developed in this chapter, we can see more clearly how this operation is effected. By a rule very similar to (25), and triggered off, as indeed (25) might be, by the presence of focus on this particular node,  $S_1$  is Chomsky-adjoined to  $S_0$ :

2. (d)



The shallow form of 'LILY (Ag)' is, of course, 'Ag was Lily'. Given the structure of (2d) with no further movement transformations, Ag there obligatorily becomes it, giving:

2. (e) It was Lily who helped me the most.

Given (2d) plus extraposition of the predicate in  $S_1$ , Ag then obligatorily becomes the one, giving:

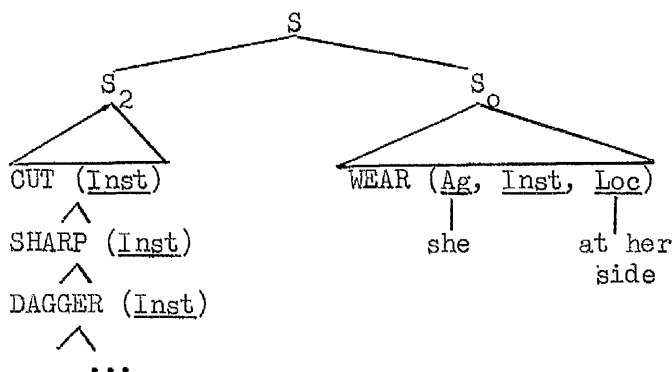
2. (f) The one who helped me the most was Lily.

The relative pronoun in both cases results from the lower role left behind in  $S_0$ .

Thus we can see that the "emptiest" antecedent cases of pseudo-R result from extraposition of the raised Role-content. Full R antecedents, on the other hand, derive from full Ss (dominating polyconjunctions) which are raised to an Argument node (and left there). The intermediate types we noted in section 3.24, e.g.

3. (a) The knife she wore at her side was a dagger presumably have polyconjunct raised Ss, one or some of which are extraposed, viz.

(b)



leaving a residue (say, 'Inst which cuts and is sharp ...') which may be lexicalized by the comparatively full item knife. In the same way, though by a different route, the long subject in (2f) is lexicalizable, e.g. by some such form as ASSISTANTISSIMO (= 'the one who helps somebody the most', a plausible, though not exactly extant, word).

We have also compared Rs with IF/THEN sentences. The type of restrictive which has been generated is the generic (as discussed above in Ch. III). This was seen to represent the basic, context-free form, and its similarity with an IF/THEN sentence will have been noted:

4. If an actor has suffered, then he can play a tragic role sensitively, in which the relative clause is equivalent to the condition clause, and the matrix to the consequence clause. This is not too surprising, since both stipulate conditions for membership of a set and assert further implications of those conditions. However, this close implicational relationship between the two clauses bears its burden of responsibilities, since there must exist between them a certain semantic parallelism, which in (4) is perhaps to be found in the semantic constitution of suffered v.à.v. tragic. Thus there is something odd about (5a) and (b):

- 5. (a) ?The hand that rocks the cradle has five fingers
- (b) ??If a hand rocks the cradle, then it has five fingers.

(Notice that (5a) is only fully acceptable when it refers to some particular hand - and then it is tautologous in the sense that one cannot conceive of a motivation for uttering such a sentence). A further point relating to the relationship is that it is rather one-sided. All generic Rs can be paraphrased into IF/THEN sentences, but the reverse does not hold, since the latter can accept with perfect ease what I have earlier called "definite expressions":

- 6. (a) If John turns up, then he'll be sorry.
- (b) \*John who turns up will be sorry.
- (c) If my daughter is late, she will apologise.
- (d) \*My daughter who is late will apologise.

(Note (6d) is meaningful used contrastively, but not generically). There is at least one other restriction operating to distinguish these constructions also. Rs, of course, demand a coreferential link between the clauses; IF/THEN does not:

- 7. (a) If wishes were horses, beggars would ride

(note incidentally, the rather difficult-to-specify semantic relationships here: wishes/beggars, horses/ride). However, (7b) is unacceptable (or at

least very marginal):

(b) Wishes which were horses, beggars would ride

(although, following Ross, one might take this as the result of Y-movement and mark it \* as a Yiddishism, if perhaps with a somewhat different meaning).

## 5.2 Context-specification

In order to illustrate the means by which contextual information is brought into a derivation let us now consider a sentence of the form (1a), but with an anaphoric interpretation, which is roughly:

8. (a) 'Of all the actors under consideration, the one who has suffered can play the role which, of all the roles under consideration, is tragic, sensitively.'

This paraphrase, however, represents just one of the possible interpretations of (1a), namely that suggested by the stress-pattern:

8. (b) The actor who has suffered can play the tragic role sensitively. However, there is another possibility:

8. (c) The actor who has suffered can play the tragic role sensitively, which has the meaning (8d):

8. (d) 'Of all the people who has suffered, the one who is an actor can play, of all the things which are tragic, the one which is a role sensitively'.

Further permutations are of course possible, including

8. (e) The actor who has suffered can play the tragic role sensitively.

Stress-patterns are not able to disambiguate completely I believe, but they are useful in distinguishing between major cases. There are four anaphoric senses of (1a), however, (cf. the foregoing discussion, section 3.12), which are, for the relative clause the actor who has suffered:

9. (a) There is a set A previously-defined such that the members of A are actors such that the actors have suffered, and there is a previously-mentioned W such that W is a member of A. 'The one who is one of the actors who have suffered ...'

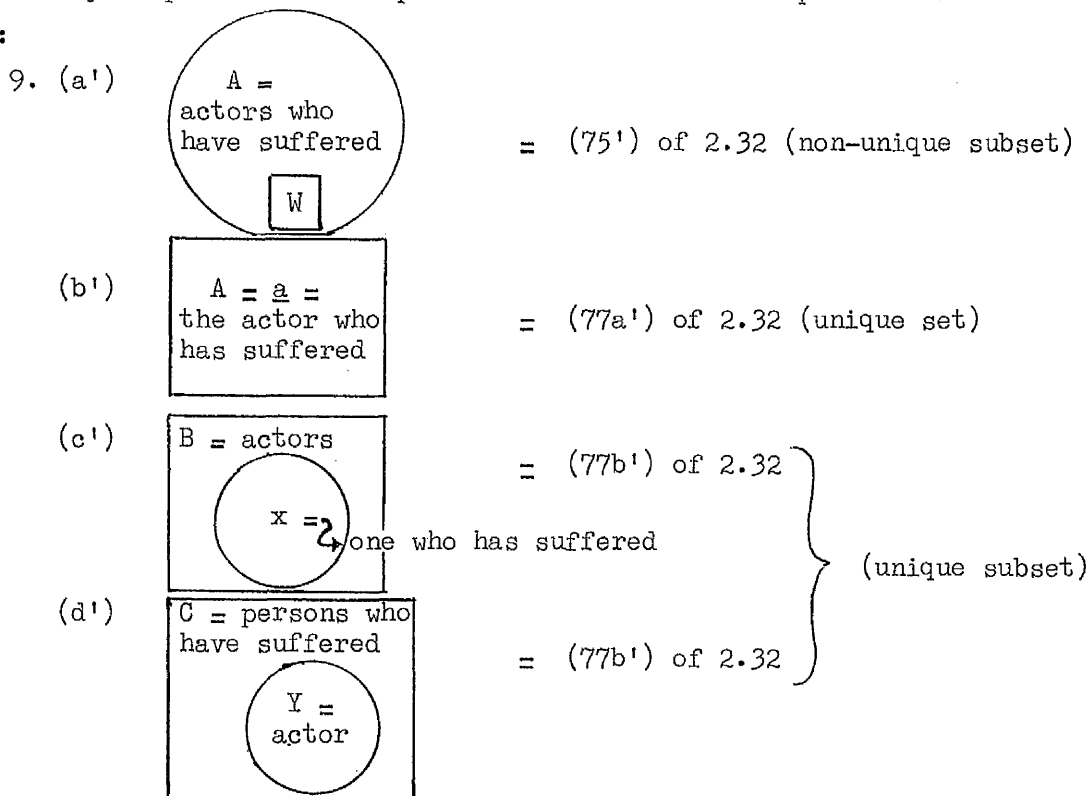
(b) There is a previously-mentioned set A of one member a such that a is an actor such that the actor has suffered ... 'The one who is the actor who has suffered ...'. (In the singular, this sense seems not to be clearly distinct from (9a), but is more obviously so in the plural).

(c) There is a previously-mentioned set B such that the members of B are actors, and X is a member of B such that X has suffered.

- (d) There is a previously-mentioned set C such that the members of C have suffered, and Y is a member of C such that Y is an actor.

Relating these to the foregoing discussion (section 3.12), it will be observed that (9a) is an instance of anaphoric sense (I), (9b) of anaphoric sense (II), and (9c) and (d) versions of anaphoric sense (III), varying from each other by the reversal of the unique and previous definitions. In each of these cases, the 'there is ... such that ...' expression (i.e. the first conjunct in my paraphrase, with the exception of (9b) where it covers the whole paraphrase) represents what Sandra Annear Thompson (*op.cit.*) called the "presupposition" of the sentence containing a relative clause. Notice that only in the case of (9b) is this "presupposition" co-extensive with the relative clause despite Thompson's implied claim that the conjunct (in her analysis) which reaches the surface as the relative clause is also the one which expresses the "presupposition" of the sentence.

The senses of (9) may be diagrammed, using modified Venn figures in which a square represents previous-mention in the context. These may then be directly compared with the previous discussion of anaphora in section 3.12:



A caveat should be made at this point concerning such paraphrases as (9a) - (d). The locations 'X such that Y', and 'X, and Y' represent not embedding on the one hand and conjunction on the other, but, rather, different degrees of boundness between X and Y. Compare:



10. (a) The violinist who has written a current best-seller lives in Cheam.

(a') 'The  $x$  such that  $x$  is a violinist such that the violinist has written ...'

(b) The violinist who has written a current best-seller lives in Cheam.

(b') 'The  $x$  such that  $x$  is a violinist, and  $x$  has written ...'

(10a), which most resembles (9d) above, presupposes that there is a set of best-seller writers of which one only is a violinist. (10b), which is similar to (9b) (and it would be more accurate to refer to this anaphora not as a "unique set", but rather as a "unique intersection of two sets", in this case violinists and best-seller writers), presupposes that there is an  $x$  who is defined by the twin attributes of fiddle-playing and popular authorship. Compared with this, the equivalent NR states (10c'):

10. (c) The violinist, who has written a current best-seller ...

(c') 'The  $x_1$  such that  $x_1$  is a violinist, and the  $x_2$  such that  $x_2$  has written ...'

with a matching condition on  $x_1$  and  $x_2$ , and previous-mention on both.

By contrast with these anaphoric senses, the generic sense already investigated paraphrases into:

11. For any  $X$  such that  $X$  is an actor such that the actor has suffered ... which is non-unique and not previously mentioned, nor does it express any presupposition. "Previous mention" clearly refers to a contextual function, and is a definitional characteristic of all the anaphoric senses. In addition, senses (II) and (III), as we have seen in examples (9b), (c) and (d) above, contain what I have called "unique specification" which is roughly equivalent to the further paraphrases:

9. (b'') The member of set A ...

(c'') Of set B, the member who has suffered ...

(d'') Of set C, the member who is an actor ...

Comparing these with (9a) in essence, we get:

9. (a'') A member of set A ... (+ previous mention),

which, like (11) is non-unique, and unlike (9b'') - (d''), does not contain the.

The situation these facts seem to point to is this: we have to regard the category or marking "previous-mention" as representing not solely one

stage preceding in previous context, but one or two stages. (9a) represents one previous mention only, in which both the set and the set member were accounted for simultaneously (perhaps within the same sentence), while (9b) - (d) realise two previous mentions, the first defining the set, the second the subset (which in the case of (9b) is the unique member of the set, i.e. first mention is of the definitional criteria, second is a reference to the single member). An example similar to (9a) is:

12. (a) Two cottages had been built in the hillside from the finely cut masonry of the old castle and two families of peasants ran out to greet them with bunches of mimosa [...]

(Waugh, 1952:3)

Children, grandchildren, great-grandchildren of the peasants who first greeted Gervase and Hermione still inhabited the cottages behind the Castello and farmed the surrounding terraces.

(*ibid*:8) (Italics mine)

Clear uniquely-specifying examples are perhaps less common and appear to be more difficult to find, but an invented example like (9d) is:

13. There has been a constant stream of visitors to No. 10 Downing St. today on the eve of negotiations for Phase XVII of the Government's Wages and Prices policy, which it is believed will trigger off a new series of wage demands and strike threats. Through the Prime Ministerial portals have passed two Cabinet Ministers, a T.U. leader, an industrialist, the Chairman of British Rail, and a gaggle of Senior Civil Servants. The Trade Unionist who visited Mr. Wilson was Mr. Len Murray, Chairman of the T.U.C. and indefatigable opponent of present Government policies ...

Further examples are (14), (somewhat like (9c)), and (15) (like (9b), and in some respects, like (13)):

14. ... These embrace a novel and, to some, perhaps, alarming proposal to penalise employers who agree to excessive demands on the part of their employees. Any 'rogue elephant', to use the Prime Minister's curious if evocative phrase, who sanctions inflationary increases will run the risk of a swingèing fine ...

"Gnome" in Private Eye, 11.7.75.

In (14), the first R is generic, as is the second in a way, though it refers to a subset of the first, namely, any individual fulfilling the conditions, i.e. any member of the set. (14) therefore is related to "indefinite pronominalization" (with one), since the existence of such employers is not presupposed, but merely hypothesized; it is therefore not anaphoric, but is more like Sense I' of section 3.13 above.

15. ... then they raced round the farm buildings to wipe out the last traces of Jone's hated reign ... the bits, the nose-rings, the dog-chains, the cruel knives ... the reins, the halters, the blinkers, the degrading nosebags ... the whips ... the ribbons ... In a very little while the animals had destroyed everything that reminded them of Mr. Jones.

Orwell (1964:12 sq.)

In (15), the relative clause harks back to the previous underlined expression, while the antecedent sums up the detailed inventory which intervenes. In this respect, therefore, (15) is similar to (13); the main distinction is that the antecedent in (13) is contrastive, i.e. selective, while that in (15) is summative. For this reason, (15) is semantically like (9b), since the set of the antecedent is co-extensive with the set of the relative clause. These examples happen to be of verbal context (which one would suppose provided "previous mentions" more often than non-verbal context), but I would postulate that situational context cues are able to work simply because (a) they operate in a strictly analogous manner to verbal context cues, and (b) in cases where ambiguity rises through insufficient situational cueing, the relevant information will in fact be provided verbally or, at least, semantically. I am claiming, therefore, though without presenting a shred of empirical evidence, that situational context, in its relationship with linguistic messages, is broadly equivalent structurally (semiotically) to linguistic context, (cf. my speculative remarks in section 2.11).

How, then, should "single and double previous mention" be incorporated into the model tentatively sketched out above? I have already tentatively suggested that the 'Modality' node in the semantic structure rule (16a) carries this sort of information about antecedents, as well as information relevant to speaker "placement" and attitude. Muraki (1972) is an interesting attempt to account for what he calls "discourse presuppositions" by inferring them from the structure of the assertion (which he regards as necessarily parallel with that of the presupposition), and then providing (or, in the case of the semantic structure rules which generate initial P-markers, alluding to) the rules which correctly handle these. His initial P-marker is said to "incorporate the presupposition" (p. 309) but apart from calling these structures "discourse" presuppositions, Muraki provides no discourse linkage between connected sentences. They are "based on what has been said or implied in the preceding part of the discourse" (p. 301), but in actual fact they represent the by now familiar "speaker-hearer assumptions", better worked-out than Thompson's, to be sure, but nonetheless completely unmotivated, by the preceding discourse or any other antecedent that I could discern. The proposal that preceding discourse informs subsequent discourse (not only in terms of antecedents for pronouns and deictics but, more crucially, in terms of semantic coherence) is, it seems to me, a natural extension of the principle that earlier P-markers in a derivation should be recoverable. I am, therefore, equally at a loss to understand on the one

hand the bland acceptance of a notion of "presupposition" left completely inexplicit, and on the other hand the untested assumption that "focus and presupposition" are superficial elements. One extremely clumsy way of incorporating the principle of recoverability of preceding discourse into the derivational process would be to accumulate all the preceding underlying semantic structures into the 'Mod' node and provide some sort of scanning device for linking antecedent and consequent (that this would be clumsy indeed is shown by (12) above, where the former precedes the latter by some five pages of text!)

Another method, rather more sophisticated and powerful, consists of generating in one's grammar not  $\Sigma$  (which, whether it implies 'sentence' or, as here, 'sema', is not supposed to be of discourse-length), but rather the entire sequence of  $\Sigma$ 's: the discourse or "text" (cf. van Dijk 1972). Van Dijk, who distinguishes between "textual surface structure" (which is equivalent to our present concern) and "textual deep, or macro-structure" (cf. the discussion in sections 3.14 above, and 6.25 below), initiates corresponding sets of rules with the symbols 'Sq' and 'T' (for "sequence" and "text"), respectively. His rules for the former are as follows (125 sq.):

$$16. \quad (i) \quad Sq \rightarrow Sq \& Sq^m \quad (m \geq 0)$$

$$(ii) \quad Sq \rightarrow S \& S^n \quad (n \geq 0)$$

$$(iii) \quad \& \rightarrow \left\{ \begin{array}{c} \wedge \\ \vee \\ \supset \\ \equiv \end{array} \right\}$$

(or)

$$(iii') \quad \& \rightarrow \left\{ \begin{array}{l} \text{EQUI (valence)} \\ \text{CONS (equence)} \\ \text{DISS (= disjunction)} \\ \text{CAUS (e)} \\ \text{COND (ition)} \\ \text{CONC (ession)} \end{array} \right\}$$

Presumably, each of these would have to be defined, by meaning-postulate or some such device. Furthermore, the list has probably to be extended at least by TEMP(oral sequence) and  $\wedge$ . A further possible addition, REASON, seems to be the converse of CAUS:

'A because B' (REASON) = 'B causes A' (CAUS). For example:

17. (a) Mary giggled because Arnold tickled her  
 (b) Arnold's tickling her caused Mary to giggle

S would then be expanded much like  $\Sigma$  in rule (16), section 4.21 above. In addition, there would be "textual conditions" such as the one for "partial

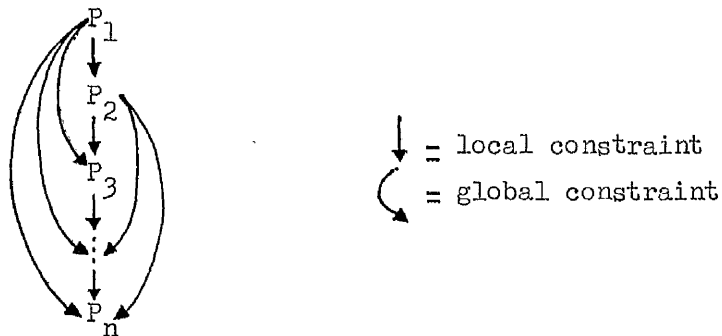
identity (e.g. by inclusion, membership, equivalence) of subtrees" (p. 128):

$$18. (a) \begin{array}{l} S \longrightarrow \dots \\ X \longrightarrow \alpha \\ Y \longrightarrow \beta \\ Z \longrightarrow \gamma \end{array} \left/ \begin{array}{l} (R \equiv) \\ (R \subset) \\ (R \in) \end{array} \right. (\delta (\subset S_i), \text{---})$$

where  $\alpha$ ,  $\beta$ ,  $\gamma$  are "abstract semantic terminal subtrees", at least one of which bears one of the contextual relations (equivalence, inclusion, membership) - there are presumably others - to  $\delta$ , which is a subtree of  $S_i$ , which precedes  $S$  in the discourse. This is, then, a "global coherence constraint for the derivation of sequences" (p. 129), which will subsequently trigger off the various anaphoric transformation processes.

A global coherence constraint is different in some important respects from other linguistic constraints, which constrain derivations. Derivational constraints (G. Lakoff 1971) are of two kinds: local (i.e. transformations) and global. Given that a derivation consists of a series of labelled trees:

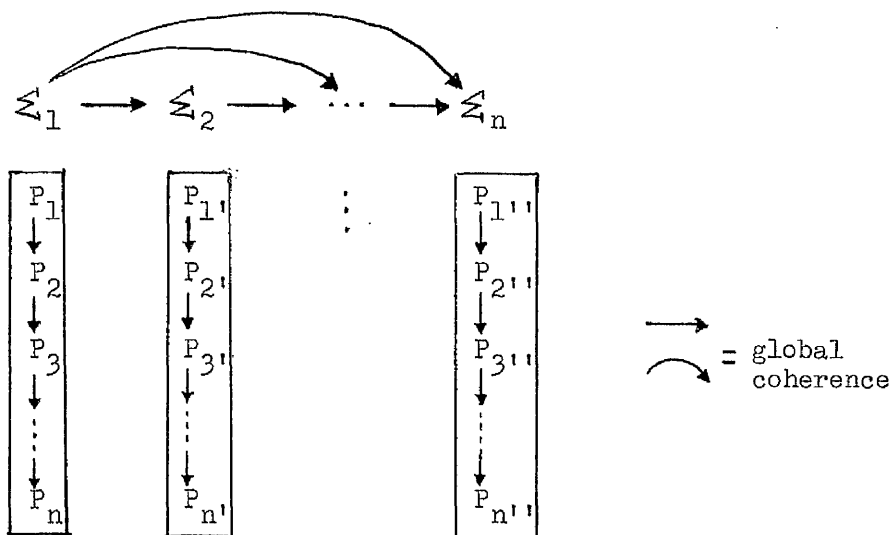
18. (b)



in which  $P_1$  represents the first or "deepest" such tree, and  $P_n$  represents surface structure, then each tree is re-formed into its successor by means of a local derivational constraint. Global derivational constraints impose on trees restrictions governed by conditions which may obtain in preceding trees other than (though logically including) the immediately-preceding one, conditions which perhaps are no longer present at that particular point in the derivation.

A single derivation ends up, more or less, as a single sentence (including such elliptical types as short-form responses). But a discourse-grammar (see Chs. II and VI, and rules (16) above) generates not structures underlying sentences, but structures underlying sequences of sentences:

18. (c)



A coherence constraint, therefore, is one which imposes restrictions on a (tree in a ) derivation  $\Sigma_k$  which are governed by conditions obtaining in some previous derivation  $(\Sigma_{kj})$ ,  $(j \geq 1)$ . Logically speaking, we might expect both local coherence constraints and global coherence constraints, the former scanning only immediately preceding derivations, the latter referring a tree back to any preceding derivation. Thus it might be possible to distinguish between responses, which presumably refer back only to the immediately-preceding  $\Sigma$ , and such processes as anaphora, sequence of tenses and semantic coherence, which are discourse- or situation-relevant. However, I do not propose to investigate this question here.

G. Lakoff (1973) has, independently of Van Dijk and the European text-grammarians, initiated the study of coherence constraints, which he calls transderivational constraints. However, the problems he investigates are all, without exception, examples of local constraints (I would suppose): ambiguity, concerning alternative derivations for the same surface form to which a deletion rule is evidently sensitive, and deletions with the identity conditions operating across conjoined Ss. In other words, his suggested environments for transderivational rules all involve contiguous Ss. (Van Dijk (1973) discards his own term in favour of Lakoff's. He also makes a distinction similar to the one I have drawn between local and global coherence constraints, which he terms micro-constraints and macro-constraints. The latter is supposed to map the textual macro-structure on to its micro-structure (see section 6.25)).

According to the global coherence constraint, therefore, "previous mention" is not represented as a "brought forward" condition on a particular  $\Sigma$ , but a condition potentially relating any S to some S preceding it, which

will be recoverable by virtue of being part of the same derivation from 'Sq'. "Double previous mention" is also captured by (18a) above, since  $S_1$  will itself have been subject to the partial identity condition, and will therefore already incorporate a first previous mention in such cases.

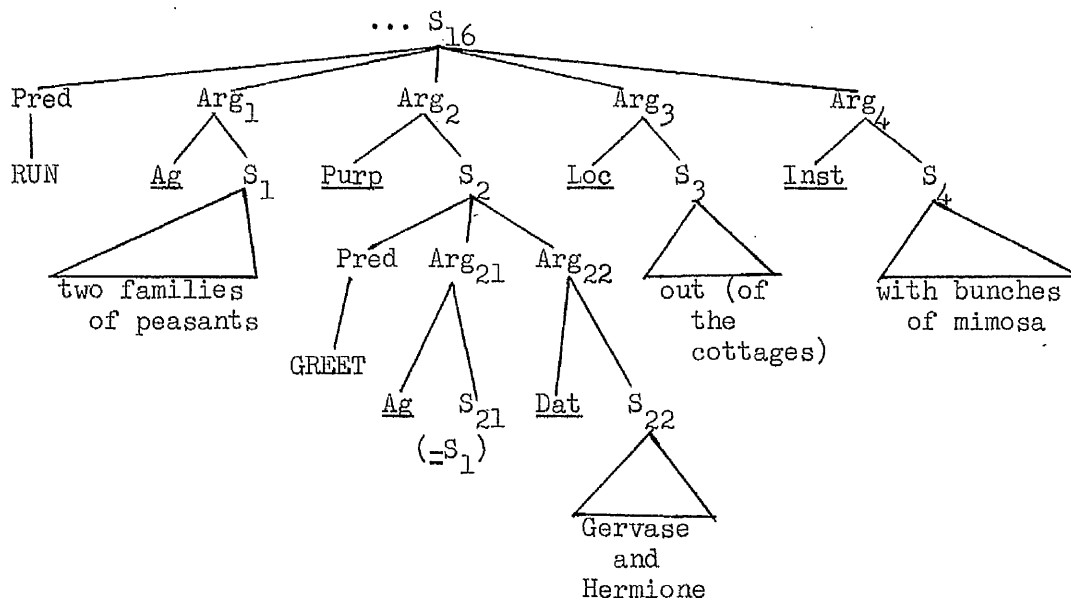
Let us test this assertion, then, on example (12a) above, whose  $S_s$  will form two constituents of the structure specified by (16):

12. (b)



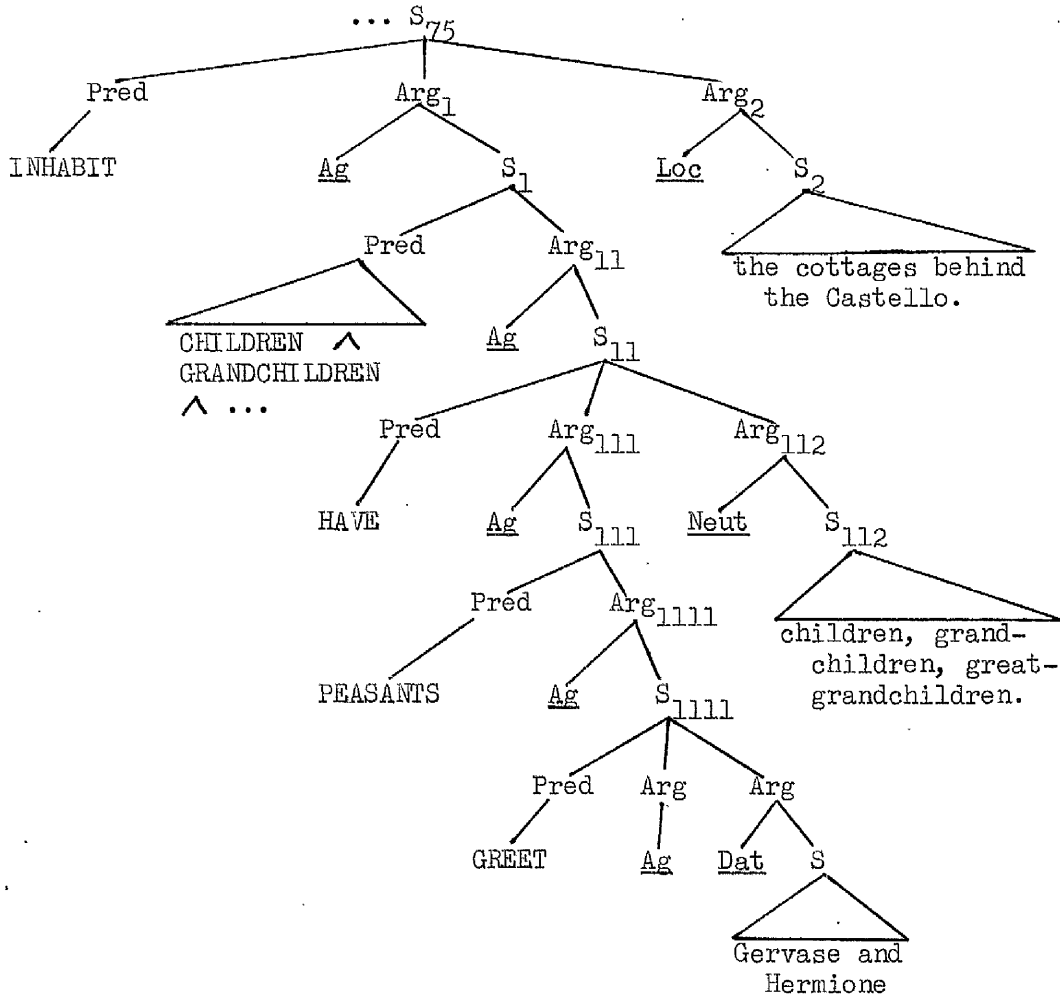
The first, let us arbitrarily call it  $S_{16}$ , has a structure like (taking the second conjunct only):

12. (c)



(Alternatively,  $Arg_4$  could be an argument of  $S_2$ ). The second, let us call it  $S_{75}$ , is something like:

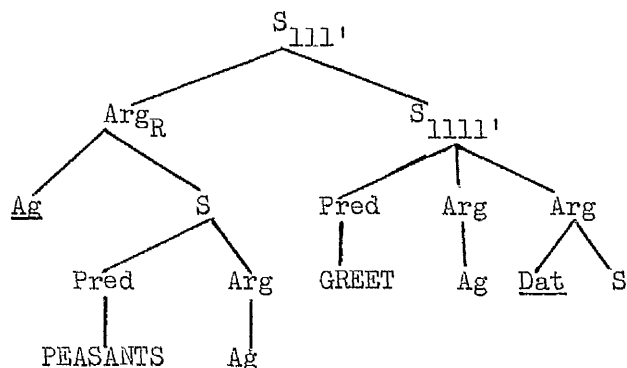
12. (d)



Assessing (12c) and (12d) in terms of (18a), the global coherence constraint, we find that the striking equivalence is between  $S_2$  of (12c) and  $S_{1111}$  of (12d), which are identical. This is enough to satisfy the constraint. However, the differences are also instructive: the former, we notice, is commanded by the Purpose argument of the main Predicate, whereas the latter is commanded by the Agentive argument of the copulative Predicate PEASANTS. In  $S_{16}$  of (12c), on the other hand, peasants will be a copulative Predicate in another Argument in addition to that of  $S_2$ , viz. the Ag argument ( $Arg_1$ ), though it also appears in the S of  $Arg_{21}$ . In terms of the rules we have developed, the  $S_{111}$  subtree of (12d) resembles a Role-raised structure in which the Ag-commanded S (cf.  $S_{21}$  of (12c)) is raised to a higher role of the same type, giving the derived tree:



12. (e)



If the S in question, though, were not Chomsky-adjoined (or, strictly, were not pseudo-Chomsky-adjoined, since the raised node is not copied in the adjunction), but instead were substituted for the triggering Role-node, the resulting structure (after tree-pruning) would be almost identical with S<sub>1111</sub> of (12d). This suggests that what is role-raising pre-lexically, is equivalent in post-lexical structure either to argument-raising or Restrictive relative constructions respectively.

However, in terms of the semantics of Restrictive relativization, the relationship between the anaphoric relative clause and its textual antecedent is one of set-equivalence (confirmed by the coherence constraint), i.e. to quote my previous words, in reference to (9a) and (12a), "both the set and the set-member [are] accounted for simultaneously". For double previous mention, as in (13), the relative clause is set-equivalent with one textual antecedent, while its antecedent is a set-member of the other textual antecedent (consisting of a list of members). This may easily be ascertained, if required.

Cataphoric relative clauses, on the other hand, are accounted for by the configurational and transformational rules alone, since they do not refer back to preceding discourse in the way that (12) and (13) do (though they may in part, e.g. On the second rise is laid out the little civil station ... [The trees] glorify the city to the English people who inhabit the rise (Forster 1936:9 sq.). Here, we may note the identity between rise in the textual antecedent and in the relative clause, and also perhaps the pragmatic implication that a civil station would be inhabited by somebody, viz. people. We might say, therefore, that this example is anaphoric to a degree, rather than truly cataphoric, or discourse-initial).

In the rules developed in section 4.21 above, I included a node marked "Mod(ality)" which I proposed as an insertion-point for contextual and attitudinal information. The specification of this information goes well beyond the scope of the present study, though I note that much of what I tentatively proposed previously as "significant contextual information" is handled much more elegantly by a coherence constraint, and it may be that the whole Modality constituent can be dispensed with in favour of such constraints.

Before leaving the topic of discourse specification, it should be mentioned that evidence from discourse - in this case, question and response - can be brought to bear on the problem of quantification in relative clause antecedents. In discussing Rs, we have so far, for the most part, used singular antecedents for illustration. Continuing to do so for the moment, let us examine some question-and-response evidence. Consider the statement:

19. (a)  $\left\{ \begin{array}{l} \text{An} \\ \text{Some} \end{array} \right\}$  actor played the part of Hamlet superbly.

A reasonable request for further information might take the form of a question on the subject NP:

- (b) Which actor?

to which a possible response might be any of the following:

- (c) The one whose picture is on the programme.  
 (d) I don't know who he was.  
 (e) Sir Lawrence Olivier (= The one who is Sir Lawrence Olivier).  
 (f) One I've never seen before.  
 (g) I know who he was but I can't think of his name.

(19b) is a request for a definite description of an indefinite referent; (c) and (e) supply a definite description, (d) and (g) explicitly fail to supply one, and (f) implicitly fails. (d) and (g) presuppose that the actor has an identity, but assert the speaker's reason for failing to supply it; (f) contains an assertion which carries an implication of such failure. (d), (f) and (g), therefore, are responses to what we might call the "performative content", or its implications, rather than to the cognitive content of (b). The phrase "performative content" probably requires explanation. Any perlocutionary act (that is, any linguistic act which is intended to arouse some response from the listener - I am using the term somewhat differently from J. L. Austin's own usage), such as questioning, not only has a cognitive component, (its "subject-matter"), but also includes an invitation to the listener to perform some action in response (cf. section 2.13). If you, as

the listener, do not know the answer to a question asked of you, (i.e. you cannot fulfil the cognitive side of the contract), you are still obliged, nevertheless, to say something - to admit your ignorance, challenge the question, or whatever - you are obliged not to remain silent. ("Obliged" is perhaps too strong - but the social forces which are operating are in fact fairly powerful). In this case, you have responded (as you are obliged to) to the "performative content" alone, i.e. you have carried out the action which was requested of you, even though you have been unable to provide the required information.

Returning to the evidence, we find (19c) and (e) on the other hand are genuine, informative answers, and it will have been noted that in form they are similar to the structure underlying (1a) above, and that in meaning they refer to some antecedently-understood definition, which in both cases is situational. (19c) refers to immediate situation, (19e) to wider knowledge, and both are, of course, open to further questioning, e.g. "Who's Sir Lawrence Olivier?"). An impossible response, however, is a NR:

20. The  $\left\{ \begin{array}{l} \text{one} \\ \text{actor} \end{array} \right\}$ , whose picture is on the programme.

We also note that a corresponding R relative S:

21. (a) The actor whose picture is on the programme played the part of Hamlet superbly

has as a possible presupposition, (19a), although (21a) with different stress will vary from this:

21. (b) The actor whose picture is on the programme played the part of Hamlet superbly.

(c) Someone played the part of Hamlet superbly.

What is important to notice, however, is that the antecedent has in its underlying form the quantifier SOME (i.e. 'there exists a ...'). This is shown even more clearly with plural antecedents, e.g. in Bach's (1968) example:

22. (a) The Greeks who are philosophers like to talk.

(b) Some  $\left\{ \begin{array}{l} \text{people} \\ \text{Greeks} \end{array} \right\}$  like to talk.

(c) Which ones?

(d) The  $\left\{ \begin{array}{l} \text{ones} \\ \text{Greeks} \end{array} \right\}$  who are philosophers.

(e) There are some  $\left\{ \begin{array}{l} \text{people} \\ \text{Greeks} \end{array} \right\}$  who are philosophers.

5.3 Non-restrictives

Ross (1967:240-1) proposes two arguments to show that NRs (which, like Smith 1964, he calls "appositives") derive from conjunctions:

(i) There are cases where such clauses can begin with and:

23. Enrico, { who  
and he } is the smartest of us all, got the answer in seven seconds.

(ii) Neither appositives nor conjoined sentences can appear after certain determiners, including any, no, every:

24. (a)  $\neq$  { Any  
No  
Every } student, { who  
and he } wears socks, is a swinger.  
(b)  $\neq$  { Any  
No  
Every } student is a swinger and he wears socks.

At this point, Ross also discusses briefly the problem of the question which contains a NR, brought up by Sandra Annear Thompson and examined in the present paper also (section 3.223 above), where I suggested that the problem was solved by ordering YNQ formation after NR relativization, which appears to be indicated by other evidence.

Jackendoff (1968:17 sqq.) notes Ross's proposals for NRs, and points out some difficulties.

25. (a) Ivan, who had a jaundiced view of religion, made up strange stories.

(b) <sup>NR</sup> Ivan had a jaundiced view of religion, and he made up strange stories.

26. (a) I got a letter from a man from New York, whose attitude is disquieting.

(b) I got a letter from a man from New York, <sup>NR</sup> and his attitude is disquieting.

(I have marked the conjuncts in the (b) sentences which are equivalent to the NRs in the (a) sentences with a raised "NR"). Jackendoff observes that the order of the conjuncts evidently has some significance which is not indicated in the ordinary rules for conjunction. He also points out that there seems to be no principle for deciding which co-ordinating conjunction is appropriate:

27. (a) John said that Concord, which I know is the capital of New Hampshire, is the capital of Massachusetts.

(b) John said that Concord is the capital of Massachusetts, { and  
but } I know it is the capital of New Hampshire.

Jackendoff also makes much of the analysis of questions (and indeed imperatives) containing NRs which Ross mentions as a problem, and goes on to suggest an interpretive solution whereby, the same projection rule applies to both NRs, which have a "loose semantic relationship" with their NP, and other clauses "loosely subordinate" to VP. Then the difference between such loosely subordinate NP modifiers, and tightly-subordinate NP modifiers such as Rs (which he takes to be equivalent to conditionals, since he examines only generic Rs) is captured solely by the fact that different semantic interpretation rules apply. (Jackendoff, of course, is subscribing to a theory which abandons the meaning-preserving principle for transformations, and allows semantic interpretation to take place at some, or any, post-DS point).

If one extends one's examination of these problems to include an investigation of such semantic notions as synonymy, paraphrase, implication etc. among NRs, the objections which Jackendoff raises to Ross's suggestion can be seen in true perspective. Compare the following sentences:

28. (a) Even Sam, who has an I.Q. of  $13\frac{1}{2}$ , can tell a grommet flange from a rebate overhang.
- (b) Even Sam, and he has an I.Q. of  $13\frac{1}{2}$ , can tell a grommet flange from a rebate overhang.
- (c) Even Sam can tell a grommet flange from a rebate overhang, and he has an I.Q. of  $13\frac{1}{2}$ .
- (d) \*Even Sam can tell a grommet flange from a rebate overhang, and has an I.Q. of  $13\frac{1}{2}$ .
- (e) Sam has an I.Q. of  $13\frac{1}{2}$ , and even he can tell a grommet flange from a rebate overhang.
- (f) \*Sam has an I.Q. of  $13\frac{1}{2}$ , and even can tell a grommet flange from a rebate overhang.

Sentences (d) and (f) are conjunction-reduced, but evidently ungrammatical. Conjunction-reduction, however, should apply to all conjuncts containing identical forms in parallel (including pronouns):

29. (a) Chicken-licken got an acorn on the head, and she thought the sky was falling.
- (b) Chicken-licken got an acorn on the head, and thought the sky was falling.

Perhaps the presence of even accounts for this anomalous behaviour? It is in fact true that without even, the sentences (28d) and (f) appear to be grammatical:

28. (d') Sam can tell a grommet flange from a rebate overhang, and he has an I.Q. of  $13\frac{1}{2}$ .

(f') Sam has an I.Q. of  $13\frac{1}{2}$ , and can tell a grommet flange from a rebate overhang.

It should be noted, however, that without even, the sentences of (28) become ambiguous, as between senses (A) and (B):

(A) Introducing Sam, who has these two attributes:

(i) he has an I.Q. of  $13\frac{1}{2}$ .

(ii) he can tell one thing from the other.

(B) The thickest oaf should be able to distinguish between these objects, as is indicated by the fact that Sam, who must surely be in the running for the title, is capable of doing so.

The sentences (28d'), (f') bear sense (A); (28a - f) have sense (B), which is to say that even functions to disambiguate the adversative sense (B) from the cataloguing sense (A) (It should be added, too, that this is not simply a matter of rule ordering, since it involves questions of meaning).

Consider next the following sentences:

30. (a) Norman, who has an I.Q. of 314, solved the Bach-Peters paradox.

(b) Norman has an I.Q. of 314, and he solved the Bach-Peters paradox.

(c) Norman solved the Bach-Peters paradox, and he has an I.Q. of 314.

(d) Norman has an I.Q. of 314, and solved the Bach-Peters paradox.

(e) Norman solved the Bach-Peters paradox, and has an I.Q. of 314.

(a), (b) are ambiguous between a causative and a catalogue sense. (d), (e), after conjunction reduction, have the latter meaning only. (c) also has the latter meaning only, apparently because the conjuncts are in the reverse order. We cannot assume, however, that conjunction-reduction itself brings about this change of meaning, and not only because of the meaning-preserving principle. There are other cases where the non-catalogue sense persists through conjunction-reduction:

31. (a) Joe, who fell out of bed, broke his leg.

(b) Joe fell out of bed and he broke his leg.

(c) Joe fell out of bed and broke his leg.

(d) Joe broke his leg and he fell out of bed.

(e) Joe, who broke his leg, fell out of bed.

(f) Joe broke his leg and fell out of bed.

(g) <sup>☞</sup>Joe, and he fell out of bed, broke his leg.

(h) <sup>☞</sup>Joe, and he broke his leg, fell out of bed.

(a) - (c) I take to be synonymous in their ambiguity between a causative, a temporal sequence, and a catalogue sense; (d) - (f) are similarly synonymous and ambiguous, except that the "cause" and "effect" in the causative sense and the "before" and "after" in the temporal sense, are reversed with the order of conjunction. Why is this not also the case with (30c), which we have seen is not ambiguous, though (30a) and (b) are causative as well? The answer to this lies, I think, in the nature of the predicates involved: if we substitute for the I.Q. clause, and he discovered the correct rules for pronominalization, which, note, has an "active" verb, then the sentences (30a) - (e) behave precisely like the sentences (31a) - (h). (31g) and (h), however, are more difficult to explain for anyone who takes the possibility of the NR relative pronoun deriving from and + personal pronoun at all seriously. Another transformation which can be mentioned in this connection is one suggested by Jay Keyser in a lecture at York in 1972. He called the rule Stuffing, and its effect was to delete the relative pronoun and Tense elements in a NR, and "stuff" -ing on to the exposed infinitive verb, e.g.

32. (a) Sir Archibald Grimble, who had just arrived, proceeded to eat a hearty breakfast STUFFING→  
 (b) Sir Archibald Grimble, having just arrived, proceeded to eat a hearty breakfast.

We may note that the catalogue sense seems to be excluded from the results of this rule:

33. (a) The vicar, who is a big fat man, has held his present living since 1965.  
 (b) <sup>ⓧ</sup>The vicar, being a big fat man, has held his present living since 1965.  
 (c) The vicar, who is a big fat man, is ideally cast to play Falstaff.  
 (d) The vicar, being a big fat man, is ideally cast to play Falstaff.  
 (e) Wallabies, which make excellent pets, are native to Australia.  
 (f) <sup>ⓧ</sup>Wallabies, making excellent pets, are native to Australia.  
 (g) Wallabies, which make excellent pets, are ideal gifts for children.  
 (h) Wallabies, making excellent pets, are ideal gifts for children.  
 (i) Even Sam, having an I.Q. of  $13\frac{1}{2}$ , can tell a grommet flange from a rebate overhang.

Some further facts about paraphrase relationships seem relevant. All the senses revealed in the foregoing NRs, except for the catalogue sense, may be paraphrased by explicit subordinate clauses:

34. (a) Even Sam, { despite the fact that he has  
despite having  
although he has } an I.Q. of  $13\frac{1}{2}$ , can  
tell a grommet flange from a rebate overhang.
- (b) Norman, { because  
since } he has an I.Q. of 314, solved the Bach-  
Peters paradox.
- (c) Joe, because he fell out of bed, broke a leg.
- (d) Joe, after he fell out of bed, broke a leg.
- (e) The vicar, because he is a big fat man, is ideally cast to  
play Falstaff.
- (f) Wallabies, because they make excellent pets, are ideal gifts  
for children,

or their matrices may include "sentence-adverbials" which are semantically  
equivalent to subordinate clauses:

35. (a) Even Sam, who has an I.Q. of  $13\frac{1}{2}$ , (nevertheless) can tell a  
grommet flange from a rebate overhang, (however).
- (b) Norman, who has an I.Q. of 314, { thereby  
therefore } solved the Bach-  
Peters paradox.
- (c) Joe, who fell out of bed, therefore broke a leg.
- (d) Joe, who fell out of bed, thereupon broke a leg.
- (e) The vicar, who is a big fat man, is therefore ideally cast to  
play Falstaff.
- (f) Wallabies, which make excellent pets, are therefore ideal  
gifts for children.

Many NRs, therefore - indeed one might surmise most, though this is open to  
statistical verification - do not, contrary to the usual explanation,<sup>5</sup> simply  
add further information about the antecedent, although some do:

36. (a) The Prime Minister, who has blue-rinsed hair and red eyes, is  
due to open the fête at Much Muttering Without today.
- (b) The cat next door, which was always threatening to gobble up  
Aunt Hilda's budgie, was a mangy tortoisehell.

Nor, as we have seen, can NRs be represented as deriving from second con-  
juncts, as suggested, for example, in Langendoen (1970:144) and Van Dijk  
(1972:58), since both orders seem to be possible from one NR to another.

<sup>5</sup>e.g. Lakoff 1968a:42, "non-restrictive clauses simply make an additional  
assertion"; Langendoen 1970:144, "the [non-restrictive] relative ... in  
the form of an afterthought"; Hodges 1951:127 (quoted by Taglicht op.cit.),  
"a non-restrictive clause merely adds information about a word already  
defined, and therefore it can be omitted without changing the meaning of  
the sentence; it is not essential to meaning".



It seems quite clear that NRs are ultimately to be derived from various sources,<sup>6</sup> of which underlying conjunctions are only one. A fact which could be of some importance, however, is that absolutely impossible conjunctions are apparently matched by absolutely impossible NRs: cf. (24) above, and:

37. (a) \*Shut the door, and {have you  
who} painted it?

(b) \*Shut the door, which {have you  
who} painted?

On the other hand, it is possible to conjoin questions or commands, whereas it remains absolutely impossible to form that sort of conjunction into an equivalent NR:

38. (a) Did Giles mend the door, and have you painted it?

(b) \*Did Giles mend the door, which have you painted?

This suggests that sentences (37) are ungrammatical for differing reasons, and not because NRs derive from conjunctions. We might speculate that the function of NRs is to add information - not tout court, as the quotations in fn. 5 above have it - but relating the matrix proposition to its context, by means of expressions of causation/reason, concession, temporal sequence and perhaps others, (cf. Van Dijk's rule, numbered (16iii') above - which he does not relate to NRs, it should be added). All of these we may regard as different varieties of argumentation and the presentation of facts, and they represent speech acts which are necessarily declarative. Thus NRs can never be anything other than declarative, whereas the restriction on conjunctions illustrated in (37) is that generally only similar speech acts can be conjoined, and even this is not absolute (cf. section 3.223 above, and Thompson, *op.cit.*, p. 85). Conjuncts, however, can be other than declarative, of course. John Lyons, however, (personal communication), adduces a nice example of a NR which might not be declarative:

39. (a) My friend, who God forbid you should ever meet, ...

(He also mentions the rugby song 'If I were the marrying kind, which thank the Lord I'm not, sir ...', but suggests that thank the Lord is probably there parenthetical. No such explanation accounts for God forbid, though).

The equivalent independent S for the NR here is:

(b) God forbid you should ever meet my friend

<sup>6</sup>This conclusion is also reached by M. Rydén 1974, who regards, e.g., the causal connection in (30) as a "relation between the contents of the antecedent-clause ... and the relative clause", and not in fact as a property of the relative (by which he presumably is referring to the construction, or tree, as opposed to the relative pronoun, which merely marks the presence of the construction). K. Ebert (1973:5) makes a similar point.

(which should perhaps be marked \* ?); I suppose this is not declarative, but quite what it can otherwise be, I do not know. Possibly it is optative - but then in form, these are usually identical with declaratives in English. Note, however, the (I take it) alternative prayer:

(c) I {hope  
wish  
pray} to God you never meet my friend,

with a more overt performative form: praying presumably involves God at one end and "ego" at the other, which suggests that "ego" might be lurking somewhere beneath the surface of the "godforbidditive", too.

Similarly, it seems to me that the impossibility of Ross's sentences (24) is also to be explained as semantic. However, an important distinction must first be made: it appears that with quantified sentences, NRs and conjunctions reverse the non-declarative deployment described above, in that conjunctions are evidently completely barred, while the restrictions on NRs are not absolute. Compare, using rather more coherent sentences than Ross's:

40. (a) No serious music-lover who has once heard the delightful sonorities of Stumpfl can ever be the same again.

(b) No serious music-lover {who has  
having  
after he has  
provided that he has  
if he has  
\*and he has} once heard the

delightful sonorities of Stumpfl - can ever be the same again.

(c) No serious music-lover can ever be the same again and {no  
the} serious music-lover } has once heard the delightful  
he

sonorities of Stumpfl.

(40a) is a straight R, and provides no difficulty; (c) is the conjunction with various types of subject NP, and is absolutely ungrammatical; (b), with the exception of the appositive conjunct, appears to be perfectly acceptable with a very marked intonation break. It might be objected, with some reason I think, that the relative clause in (b) is really a R, with a marked intonation break for rhetorical effect, but otherwise a variant of (a). However, we might note that an ordinary R does not have the synonymous variants listed in (b), while retaining its restrictiveness:

41. (a) The physicist who discovered the Kukuksheim Effect was unable to solve the Schweinehund Enigma.

(b) ?The physicist discovering the Kukuksheim Effect was unable to solve the Schweinehund Enigma.

(c) \*The physicist { after he discovered  
provided that he discovered } the Kukuksheim  
if he discovered

Effect was unable to solve the Schweinehund Enigma.

(4.1b) I take to be just possible, but differing in meaning from (a) (whereas the equivalents in (4.0) are synonymous). (4.1c) seems to me to be quite unacceptable with a restrictive meaning and an appropriate unbroken intonation; with a broken intonation it is, of course, identical with the equivalent non-restrictive sentences in (4.0b). Furthermore, although (4.0c) is ungrammatical, equivalent sentences with subordinating constructions are perfectly acceptable:

4.0. (d) No serious music-lover can ever be the same again  
 { after he has  
 having  
 if he has  
 provided that he has } once heard the delightful sonorities  
 of Stumpfl.

Thus, if the semantic effect of relative clauses on an antecedent quantified by no, any, every etc. is not quite the same as that for NRs in otherwise quantified contexts, it is not quite the same as that for Rs, either. In fact, the evidence I have brought to bear above seems to indicate that such relatives behave more like NRs than Rs.<sup>7</sup> If this is indeed the case, then we have found an absolute counter-example to the claim that NRs derive from conjunction, since as we have seen, such sentences are unconjoinable.

However, despite the foregoing observations, whose purport is to cast doubt on the conjunction-derivation of NRs, it must nevertheless still be admitted that there are close resemblances between the two types of construction which it is perhaps incumbent upon the linguist to try and explain. Both constructions juxtapose propositions, though as we have seen, under different conditions, and in most cases stand in a paraphrase relationship with each other. The conjunction and, however, is multiply ambiguous, with the logical conjunction sense '  $\wedge$  ' perhaps representing the unmarked case. But these notions can, potentially at least, be characterized (cf. section 5.2), using the machinery I have tentatively proposed for semantic structure.

<sup>7</sup>M. Rydén (1970:47) sums up: "these indefinites [viz. all, any, no] are all compatible with both restrictive and non-restrictive relative clauses, though with a marked gradience towards the restrictive type."

It is a reasonable hypothesis, I think, that coherence between sentences in a discourse (which need not necessarily be in succession) is equivalent to partial identity of structure (cf. Van Dijk's global coherence constraint, (18a) above). For coherence by subject-matter, this partial identity would be largely prelexical, i.e. it would embody my claim that lexical sets share the same semantic structure, up to complete identity (synonymy); for coherence by coreference (the identity condition), partial identity would be both pre- and postlexical, though necessarily "partial", in that only part of the sentence-structures could be involved: complete identity leads to ungrammaticality:

42. (a) <sup>☒</sup>George fed his spiders and George fed his spiders.  
 (b) <sup>☒</sup>George, who fed his spiders, fed his spiders.

as does complete prelexical identity:

- (c) <sup>☒</sup>George fed his spiders and George gave food to his arachnids.  
 (d) <sup>☒</sup>George, who gave food to his arachnids, fed his spiders.

If one tries to interpret (c) and (d), it is by assigning different prelexical semantic structures to the apparently-contrasting items. (I take the just-possible iterative sense of (42a) as not showing complete identity of conjuncts, since the intonation is then marked:

42. (a') George fed his spiders, and fed his spiders.

Coherence is thus taken to be a necessary and sufficient condition for the connection of sentences in discourse. Sentences can also be connected, implicitly or explicitly, by "pragmatic" relationships (cf. section 2.17), such as causation, result, reason, proviso, temporal succession etc. (cf. Van Dijk's rule (16iii') above), or simply juxtaposition ( $\wedge$ ); they can then remain separate:

43. (a) Charles robbed the Midland Bank. He had a great deal of money already,

(which is implicitly 'although'), or join together by conjunction:

- (b) Charles robbed the Midland Bank, and he had a great deal of money already,

(which is still implicit as to logical connection: but is less so, however), or subjunction:

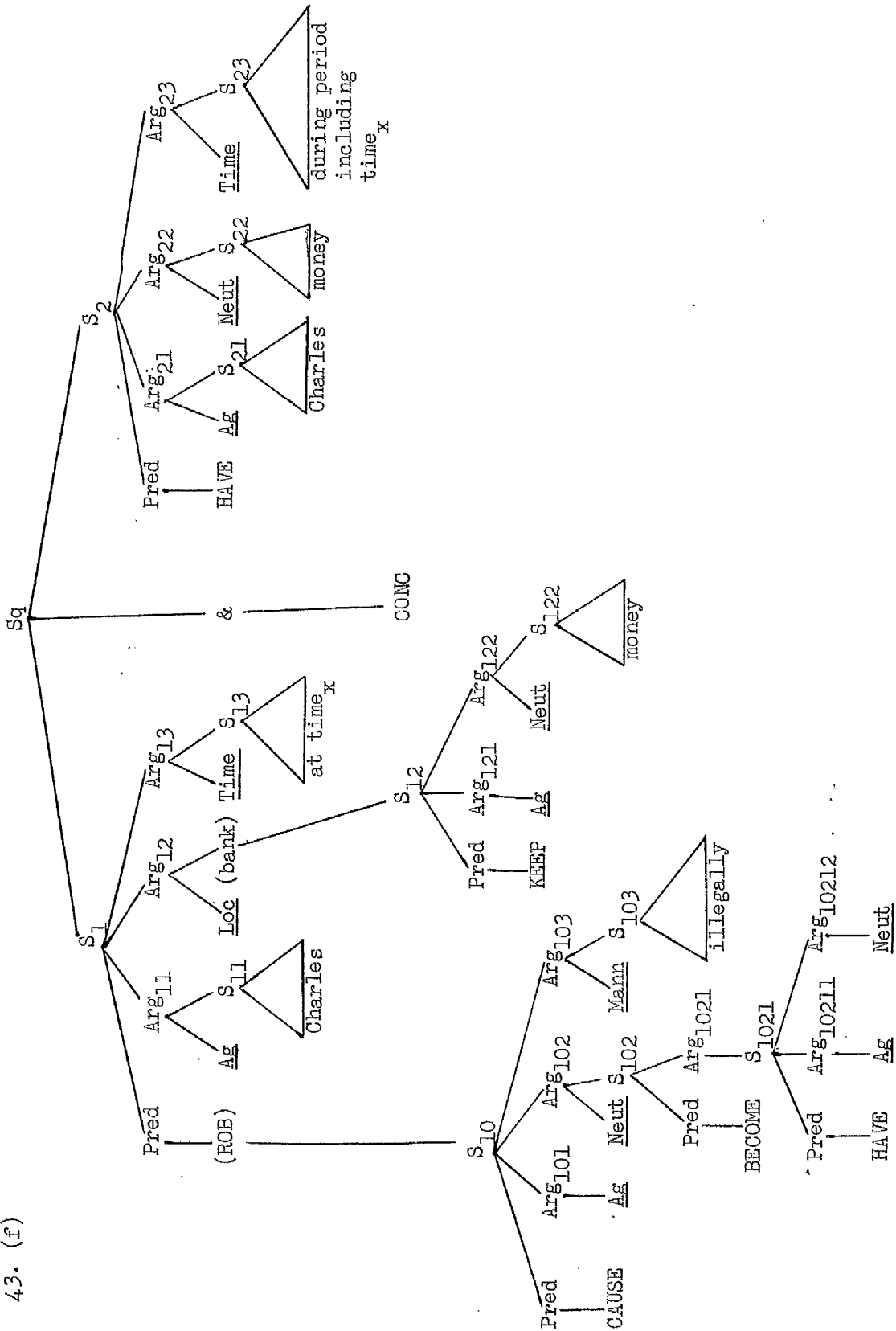
- (c) Charles robbed the Midland Bank, although he had a great deal of money already,

or the sentences can remain separate with an explicit S Adv:

- (d) Charles robbed the Midland Bank. He had a great deal of money already, however.

(43a) - (d), I contend, are synonymous with each other and with

(e) Charles, who had a great deal of money already, robbed the Midland Bank, and that underlying all these examples is a structure approximately like:



43. (f)

43. (g) 'Charles caused Charles to come to have something by illegal methods at time<sub>x</sub> from a place where people keep money, /CONC/ Charles had money in the period including time<sub>x</sub>'

Lexicalizations in (43f) are shown in brackets.  $S_{10}$  would be the subtree included in the semantic structures underlying rob, steal, pilfer, purloin, plunder etc., as well as robber(y), brigand(age), pirate, piracy, loot etc. Without  $Arg_{103}$ , it would underlie take, obtain, acquire, acquisition.  $S_{12}$  is somewhat unsatisfactory for the appropriate sense of bank, to bank etc. (although it is better for such uses as piggybank, and bank (in gambling usage)), since mattresses, old tea-caddies and under the clock are all places where money is kept, though one would hardly call them "banks". We could add a Purpose argument node marked 'commerce', although this would include till, and cash register, presumably, so the criteria for bankhood are not very easily come by.

$S_1$  and  $S_2$  have, furthermore, to pass the global coherence constraint, which they do in several respects:

- (a) the subtree  $S_{1021}$  is equivalent to  $S_2$  (without  $Arg_{23}$ ),
- (b) the subtree  $S_{23}$  includes  $S_{13}$ ,
- (c)  $Arg_{11} = Arg_{21}$
- (d) furthermore, it is a contingent assumption that the Neut of  $Arg_{10212}$  is "filled" by the Neut of  $Arg_{122}$  (and  $S_{10}$  probably requires a Source argument, which would make this assumption more substantial).

Not only do  $S_1$  and  $S_2$  fulfil the global coherence constraint, they pass a further constraint which is imposed by the meaning-postulate which defines 'CONC' in the metatheory, which roughly would be something like:

- (44) If  $S_1[WAX]S_1$  CONC  $S_2[YBZ]S_2$  is meaningful, then  $A \supset \sim B$ , (where A, B are subtrees and W, X, Y, Z are environments which may be null).

$S_1$  and  $S_2$  fulfil this also:

- (e) the tree  $S_1$  implies  $\sim S_2$ , and specifically, the subtree  $S_{10}$  implies  $\sim S_2$ , particularly when Ag and Neut are unspecified, (although if (d) is accepted, Neut can remain as it is, and the statement of implication here is given more substance).

It might be objected to this that (43a) - (e), or specifically the clause Charles robbed the bank, does not in fact imply that Charles had no money at the time. Taken in isolation, there is some truth in this (though it would be more accurate to say "does not necessarily imply ..."). What (44)

is explaining is the fact that the sentences of (43) are all acceptable. (44) predicts, given a structure  $[S_1]$  CONC  $[S_2]$ , that  $S_2$  will bear a sense whose opposite is acceptable as a (not necessarily the only) implication of  $S_1$ . Thus in the sentence:

45. Charles robbed a bank, although he had never done so before,

$\underbrace{\hspace{10em}}_{S_1}$      $\underbrace{\hspace{2em}}_{\text{CONC}}$      $\underbrace{\hspace{10em}}_{S_2}$

the presence of CONC  $S_2$  allows us to infer, by (44), that  $S_1$  implies 'Charles had robbed a bank before'. If this is not a reasonable implication of  $S_1$ , then the sentence fails.

Given that NRs relate contiguous sentences in discourse which are linked by various exponents of '&' defined by such metarules as (44), one possible distinction between NR and R is that the latter is governed by global coherence, while the former is governed by local coherence. Thus, an R may pick up some set- or membership-defining expression from many sentences back in the discourse, and this, as we have seen requires a global constraint to handle it. NRs, on the other hand, must, as far as I can see, originate in contiguous Ss in discourse, particularly if, like (43a) - (d), they are "pragmatically" linked by such factors as 'CONC', which, as (44) shows, itself operates only over contiguous Ss. Later transformational rules will then either delete CONC (to give (43a)), replace it with and or but (to give (43b) or its equivalent with but), or with although or despite the fact that (to give (43c) or equivalent) or extrapose it and replace it with however (to give (43d)), or delete it and Wh-move  $S_2$  (under the identity condition) to its position in (43e).

Thus Jackendoff's problem-sentences ((25) - (27) above) are resolved by the &, in the underlying form of (25a) - (b), (26a) - (b), being mapped respectively into CAUS and  $\wedge$ , while that in the underlying form of (27a) - (b) becomes CONC.

To sum up the semantic underpinnings for this account of NR relativization:

- (A) The 'identity condition' is necessary but not sufficient for NRs.
- (B) The 'coherence constraint' is also necessary but not sufficient for NRs, although it is both necessary and sufficient for certain connected sentences in discourse.
- (C) Sentences in discourse may also be connected by pragmatic relationships defined in the metatheory, and explicitly expressed or implicitly understood.

- (D) Thus, sentences in discourse must fulfil the coherence constraint, and they may also fulfil the identity and pragmatic relationship constraints.
- (E) NRs, since they derive from connected sentences in discourse, must observe the coherence constraint and may observe the pragmatic relationship constraint, but they are a special case in that they must observe the identity condition also.



CHAPTER VI

REVIEW SECTION: SOME PREVIOUS WORK ON RELATIVIZATION

AND SEMANTIC THEORY, AND DISCOURSE

CHAPTER VI: REVIEW SECTION: SOME PREVIOUS WORK ON RELATIVIZATION  
AND SEMANTIC THEORY, AND DISCOURSE.

6.1 Some transformational accounts

6.11 Pre-Aspects and "Standard-Theory" approaches

"Traditionally", in generative grammar, the process of relativization is, apart from some fairly general conditions on identity, regarded as a purely formal process of joining one S to another, under an NP node, though Jacobs and Rosenbaum (1968:261-2) briefly consider the idea that the NR, in contrast to the R, perhaps should be taken as occurring on the same level as NP, i.e. outside the NP in the derived phrase-marker. As a piece of evidence for this speculation, they mention the disjoint intonation pattern of the NR. They regard the derivational source of NRs as conjunction, however. The distinction between restrictive (R) and non-restrictive (NR) relative clauses is made as a matter of course, but is regarded as more fundamental by some linguists (e.g. Smith 1964, Jacobs and Rosenbaum 1968) than others (e.g. Thompson 1971, Kuroda 1969a). However, very little appears in the literature about the semantic aspects of the process and the distinction mentioned above, and in particular on the question of how to account for the difference of meaning which exists between an R and its equivalent NR. For example, how is the restrictive nature of the R to be explained? In pre-1965 TG, (e.g. Smith 1964) the question of explanation at the semantic level never arose; in post-Aspects "standard-theory" treatments (e.g. Jacobs and Rosenbaum 1968), it is assumed, I suppose, that the presence of the S node embedded in NP and selected during the pass through the PS-rules will itself somehow be interpreted as semantically restrictive on the NP. Katz and Postal's pioneering work (1964) in this line of development, provides constituents Rel and Comp in underlying P-markers, and the former of these is attached to an NP under the Determiner Node (in line with Smith's proposed derivation in her 1964 article). It then becomes a "matrix dummy", i.e. a point at which a constituent sentence must be inserted. This process is seen by Katz and Postal in terms of generalised transformations, but they anticipate (pp. 67-8) another method of operation (presented in Chomsky 1965) by which a constituent P-marker (rather than a fully-interpreted sentence) will be inserted at the dummy point, resulting in a "generalized P-marker". This will then obviate the need for both generalized transformations and the type 2 projection rules these require. This has the important effect of streamlining the linguistic model advanced in Katz and Postal to yield the elegant

device proposed in Chomsky 1965. However, it does not alter the function of the "projection rules" for combining the meanings of successively larger constituents (apart from simplifying their application). Type 2 projection rules have more recently been in a sense reinstated in the Extended Standard Theory model now espoused by Chomsky, and, particularly in this connection, Jackendoff. These will be briefly discussed below. Katz and Postal, however, represent (1964:120-2) the two possible interpretations of

1. (a) They found the boy studying in the library as containing, in the matrix sentence They found the boy, respectively 'found + Comp' and 'the + Rel + boy':

(b) They found Comp (the boy is studying in the library) the boy

(c) They found the Rel (the boy is studying in the library) boy

"Thus", they conclude:

"the underlying P-markers for the two terms of the ambiguity ... are found to differ in just the way they are ambiguous and in just the way required for projection rules to provide the correct readings by operating on the sequence of underlying P-markers alone." (p. 122)

However, despite the confidence expressed in this quotation, it is doubtful whether any stratagem discussed by Katz and Postal, or later by Katz alone (1966, 1972), can in fact adequately specify the meaning of a sentence containing a restrictive relative clause. Several points must be made to substantiate this assertion. First, Katz and Postal go to considerable lengths to show that semantic interpretation must take place on underlying P-markers. This is, in their interpretative semantic theory, eminently reasonable, since any derivation involving, for example, a deletion transformation at any stage, would otherwise fall short of semantic interpretability by the element deleted. In terms of the model upon which their argument is primarily developed, however, this leads to complications with embedded Ss, requiring extra, and seemingly ad hoc machinery (type 2 projection rules), to allow for partial interpretation of a matrix sentence with an uninterpretable dummy symbol contained in it. Chomsky's generalised P-markers, formed by inserting, in a subsequent pass through the PS rules, a constituent S into a matrix S at a point preselected in the first (matrix-forming) pass, allow this unwieldy apparatus to be simplified considerably. The projection rules can now operate before all transformations (at the derivational stage subsequently called "deep structure"), and therefore need not take transformational operations into account. This is essentially the position adopted by so-called "standard theorists" (e.g. Jacobs and Rosenbaum 1968). Katz and Postal 1964, (which was, of course, pre-Aspects-model with regard to

generalized P-markers, at least), discuss the semantic implications of their model to an extent which was not repeated until Katz 1972, by which time crucial changes and challenges had come about in linguistic theory. (Katz 1966 was clearly aimed at an audience of philosophers rather than linguists: it discusses projection rules only in respect of simple sentences).

The second point concerns the structure of the projection rule itself as conceived by Katz and Fodor 1963, Katz and Postal 1964 and Katz 1966, (Katz 1972 does away with projection rules as such completely. I shall discuss this separately). Katz, in several places (e.g. 1966:166), gives the projection rule dealing with "modification", which he explains is "the grammatical relation that holds between a modifier and a head, i.e. such pairs as an adjective and a noun, an adverb and a verb, an adverb and an adjective etc." Presumably, therefore, the relation between a relative clause and its head noun would be included, especially in view of the fact that (i) adjectives are usually considered to derive from relative clauses by transformation, and (ii) attributive adjectives can show the same semantic variation as relative clauses, namely, the restrictive/non-restrictive distinction. (In written English, however, this is not marked, so that ambiguity may occur, under conditions which I will refrain from discussing here. The spoken form, though, may distinguish between the two semantic types of adjective, by means of stress). Katz's modification projection rule is given as follows:

2. (R1) Given two readings,

$R_1$ : ( $a_1$ ), ( $a_2$ ), ... , ( $a_n$ );  $\langle SR_1 \rangle$

$R_2$ : ( $b_1$ ), ( $b_2$ ), ... , ( $b_m$ );  $\langle SR_2 \rangle$

such that  $R_1$  is assigned to a node  $X_1$  and  $R_2$  is assigned to a node  $X_2$ ,  $X_1$  dominates a string of words that is a head and  $X_2$  dominates a string that is a modifier, and  $X_1$  and  $X_2$  branch from the same immediately dominating node  $X$ ,

Then the derived reading,

$R_3$ : ( $a_1$ ), ( $a_2$ ), ... , ( $a_n$ ), ( $b_1$ ), ( $b_2$ ), ... , ( $b_m$ );  $\langle SR_1 \rangle$

is assigned to the node  $X$  just in case the selection restriction  $\langle SR_2 \rangle$  is satisfied by  $R_1$ .

Katz then claims that this rule "expresses the nature of attribution in language ... According to (R1), in an attributive construction, the semantic properties of the new constituent are those of the head except that the

meaning of the new constituent is more determinate than that of the head by itself due to the information contributed by the meaning of the modifier." (1966:166, italics mine).

One rather strange anomaly should be observed at this point. Notice that KP and Katz refer to the "attributive construction" and use as their examples for this projection rule adjective-noun constructions (as one must expect of a rule which supposedly deals with modification). The odd thing is, however, that attributive adjectives were at that time, and still are generally, derived from relative clauses by transformation (e.g. C.S. Smith 1961), so that at the level at which the projection rules are said to operate, there are in fact no such constructs as attributive formations. However, this oversight can be forgiven, I think: the semantic relationship between practically any given predicate adjective and its subset (or antecedent) will be more or less the same as that of a modifier and head in an attributive construction (although Bolinger 1967 gives grounds for thinking there may be a regular semantic distinction between the two). This is a comparatively trivial matter, however. A much more serious deficiency of this account of the semantic process of modification is the failure to distinguish between restrictive and non-restrictive modification. I shall try to show that this is more than merely an oversight or something which Katz/Postal did not happen to discuss or get round to, but is in fact a semantic distinction which is incapable of treatment by any interpretive semantics so far proposed.

The "nature of attribution in language" is therefore captured according to Katz, by the rule R1 which carries out several operations:

3. (i) Given dictionary readings for two items whose syntactic construction guarantees them to be in a modifier-head relationship, first ensure that the selectional restriction of the modifier is met by the semantic content of the head.
  - (ii) Delete the selectional restriction of the modifier.
  - (iii) Combine the semantic markers of head and modifier sequentially leaving the selectional restriction of the head at the end of the sequence.

Doubt has been cast on (3ii) and (3iii) by James McCawley (1968a:133-4), who shows there are cases where it is the selectional restriction of the modifier which determines that of the noun phrase, e.g. my buxom neighbour, that pregnant person, a male model, a female teacher. Also with regard to

the third operation, Weinreich (1966:418 sqq.) shows that semantic markers (also known as features), whether in single lexical items or complexes of lexical items, are not necessarily thrown together sequentially in "an unstructured heap", but often form what Weinreich calls (as I have, also) "configurations", viz. ordered sets of features (i.e. arranged in some sort of dependency relationship). Weinreich then goes on (pp. 420 sqq.) to discuss modifier-head examples, though unfortunately most unrevealingly. In any case, by this time Katz had come to agree with the view that some semantic entries are structured, though his discussion (1966, 1967) is limited to predicate examples (viz. chase, buy/sell).

There are also, however, grave doubts about the feasibility of (3i), as I now hope to demonstrate. I do not think that my paraphrase does injustice to Katz's actual wording (" $X_1$  dominates a string of words that is a head and  $X_2$  dominates a string that is a modifier"). This condition is clearly circular, since the head-modifier relationship is not defined by nor deducible from the formal rules of the base except ad hoc (and in any case, as I have pointed out, would, if adjectival, be definable only as a post-DS configuration anyway). Since this is not a formal relationship, it must be at least partially determined by the meanings of the items, and therefore has no justifiable place in the formal conditions on a rule combining these meanings. The problem is to specify the head without being permitted (by the rules for formal systems) to assume that the partial symbolic identity between NP and N is enough to identify the latter as "head" of the former. It is, of course, quite possible to define the head configurationally (cf. the discussion of this below), as [N, NP], for example, or [V, VP]. But how do you then go on to define a modifier, given the usual transformational treatment of, say adjectives? Using Aspects-type Base rules, such a configurational definition would be highly unwieldy, if indeed it were possible at all, and there are certain classes of adjective, let alone quantifier and deictic, which would be left undefined. If, on the other hand, the configurational definition of adjectival modification is left until the attributive stage, the configurations are no longer those of deep structure. But say we assume that the usual treatment of adjectives is wrong: problems still occur. How can you distinguish, in Chomsky's configurational terms, and given that he views with scorn the idea that grammatical relations should be directly represented in underlying structures (1970:fn. 10), between a head noun and epithet nouns? As far as I am aware, Chomsky provides no configurational device for specifying horizontal relationships ("leftward" and "rightward"), though Lyons (1968:277sqq)

does. It appears to me, therefore, that the "modifier-head" relationship cannot be defined in ST without severely complicating the Base, and this, moreover, for no clear advantage. (For an attempt to define "head" - or its equivalent - in terms of "dependency rules", see Robinson 1970).

Taking it, then, that there are serious doubts about R1, does this indicate that the rule needs tinkering with, or can it justifiably be argued that no rule of this kind, and in such a grammatical system, will be adequate to describe the phenomena? I believe that this whole approach to the semantics of relativization, (and perhaps by implication to semantics in general) can be shown to be fundamentally faulty. However, in order to ensure that the semantic system I am arguing against has not already been updated by its author himself, I must first describe Katzian semantics in the latest version I have seen, which I shall call the Mk. IV model (Katz, 1972). As a matter of fact, the amendments which have recently been made by Katz do not materially affect the case I am arguing. Just as the Mk. II model (Katz and Postal 1964) simplified the syntactic components by placing in the Base all syntactic choices which affect meaning, so too does the Mk. IV model simplify the semantic component by placing, also in the Base, all specification of meaning which is determined by the syntax. In fact, these amount to the same thing, and Katz is being quite consistent: thus, syntactic information (whether about sentence types or grammatical relations) which affects meaning is to be located in the Base. Katz does this by introducing some machinery which he calls "categorized variables" (1972:pp. 103 sqq.). These already existed in prototype in the Mk. III model (Katz, 1967), in that dictionary entries, especially of items expressing relationship of some kind (e.g. certain verbs, certain adjectives), contained empty "slots" into which the dictionary entry for e.g. the subject or the object of the particular item could be inserted. These slots were symbolised by the letters X, Y, Z etc., and it was assumed "that semantic theory provided the letters ... as symbols standing for distinct categorized variables. Each such variable was thought of as introduced into the theory by a special definition ... on the basis of the grammatical relation specifying the category of the variable" (1972: 104). Thus X might have represented 'Subject-of', Y 'Object-of', etc., these grammatical relations being definable in terms of the configuration of nodal categories in the Base (Chomsky 1965:71). Katz proposed to modify this in his 1972 version by explicitly stating such grammatical relationships in the complex symbol which replaces each lexical category late in

the rules of the Base. Each complex symbol (CS) will now contain, therefore, a semantic and a syntactic specification, the latter now in the form [NP, S] (for Subject-of) or [NP, Prep-phrase, VP, Pred-phrase, S] (for Indirect Object-of) etc. There will be as many types of CS, (each one having an indefinitely large possible variety of semantic specification), as there are genuine grammatical relationships ("legitimate and traditionally recognised" - Chomsky, 1965:73) as opposed to "pseudorelations" such as Subject-Object. These are distinguished, Chomsky suggests (ibid., and pp. 113-4), by the fact that the former but not the latter are governed by selectional restrictions. However, Katz doubts this, and in fact expresses dissatisfaction with the whole account of grammatical relations as discussed in Chomsky 1965, (Katz 1970:223-227, 1972:109-110). He suggests that these relations appear to be <sup>of</sup>solely semantic significance, and that "the true grammatical relations will then be those that occur in the statement of the semantic rules in question" (110). But since the operation of these semantic rules is determined by the genuine grammatical relations, and the genuine grammatical relations are those which appear in semantic rules, Katz's theory seems to have reached an impasse. It is a vicious circle not in the sense that one cannot break out of it, but in the sense that one cannot break into it. An analogy would be a Social Security ruling which stated that only accredited pensioners could draw a pension, and "accredited pensioners" was defined as 'those who drew pensions'! Chomsky's innovation, however, was intended to make it possible, as indeed it must be, to account for the same semantic content functioning now as subject, now as object etc.

This increased complexity in the CS has its attendant simplification elsewhere, namely in the projection rules of the semantic component. In the Mk. I-III models, Katz (<sup>†</sup> Postal) assumes that there is a different projection rule for each grammatical relationship, which combines the component meanings in a way appropriate to the relationship. The only examples of projection rules ever given in Katzian literature, to my knowledge, are those for article-noun, subject-verb, verb-object, and modification all in Katz and Fodor 1963. Of these, however, the first three have never been seen again, which is not surprising since the first simply adds what is presumably the distinguisher for the, in the example used, [Some contextually definite] to the noun reading, while the second and third merely amalgamate the two readings in a quite unspecified way. The dubiety of the fourth has already been suggested above. The differentiation of projection rules according to the grammatical relations which obtain is assumed by Katz to be required by



the fact that "the same set of morphemes can mean different things when put in different syntactic arrangements" (1972:35). This is clearly true. However, Katz makes from this position an untenable leap to the position that "there is a distinct projection rule for each distinct grammatical relation. Thus, there will be different projection rules in the semantic component of a linguistic description for each of the grammatical relations: subject-predicate, verb-object, modification, etc. The number of projection rules required is, consequently, dictated by the number of grammatical relations defined in the theory of the syntactic component" (1966:165). That this position is untenable is shown by a number of linguists, prominent among them Fillmore (e.g. 1968, 1969b), who points out that there is no single subject-predicate or verb-object relation, and that in fact these grammatical functions are relatively superficial. The correctness of this view is shown by the familiar examples:

4. (a) The door opened.
- (b) The janitor opened the door.
- (c) The key opened the door.
5. (a) The corn grew.
- (b) The farmer grew the corn.
- (c) The child grew.
- (d) <sup>x</sup>The father grew the child.
- (e) The pigs grew.
- (f) The farmer raised (the) pigs.
6. (a) A blow struck Fred on the head.
- (b) Fred received a blow on the head.
- (c) George gave Fred a blow on the head.
- (d) A blow from George struck Fred on the head.

The sentences in (4) demonstrate that the same lexical item (door) can be now subject, now object of the same verb, without apparently changing its semantic relationship to that verb. Furthermore, a paraphrase of (4b):

4. (d) The janitor caused the door to open,  
shows that the same item, door, can be ambiguous as to the grammatical relationship, in that it is simultaneously the "object" (or part of it) of cause, and the "subject" of open (cf. Chomsky 1965:70).

On the question of whether overt "cause" sentences are paraphrases of causative sentences, Katz (1970:253) provides what he claims is a counter-example to the assumption (made by McCawley) that kill and cause to die are synonyms:

"Suppose that the sheriff of an old West town is to fight a gun duel with an infamous badman at high noon. Suppose also that, so as not to take any unnecessary chances, the sheriff goes to the local gunsmith to have his trusty six-shooter put in top working condition. Suppose, furthermore, that the gunsmith, who is a friend of the outlaw, installs an old, rusty firing-pin in the sheriff's gun and tells him that the newest and best available pin has been put in. Now, when the gun-duel takes place, the sheriff, who draws first, is unable to fire his gun because the defective firing pin prevents it from discharging, and the outlaw then shoots and kills the sheriff. Clearly, the gunsmith caused the death of the sheriff, but, equally clearly, the gunsmith did not kill him".

However, this John Ford cliché situation is likely to be followed by the cliché retort: "He killed him as sure as if he'd pulled the trigger himself!" That is to say, both kill and cause to die can refer to both direct and indirect causation, and to quibble over this with respect to these two predicates commits one to the same quibble with other examples:

7. (a) The janitor unlocked the door.  
("No he didn't. The key unlocked the door. The janitor just caused the door to unloek" etc.)
- (b) Hitler killed six million Jews.
- (c) Judge Jeffreys hanged thousands.

Jackendoff (1972:27 sq.) attempts to make the same point about cause and causatives, but using a different example. Unfortunately for his argument, however, the verb he chooses, drop, is ambiguous in its transitive use between a causative and what we might call an 'involitive' sense:

8. (a) [Jackendoff's (2.7)] The glass dropped to the floor.
- (b) [(2.8)] Floyd dropped the glass to the floor.

(b) is ambiguous between causative ('Floyd caused the glass to fall to the floor') and involitive ('Floyd allowed the glass to fall/drop to the floor'). The latter is decidedly the more natural interpretation for me, and implies lack of control on the part of the subject, unlike the causative, which implies direct or indirect control. In certain contexts, the causative sense seems preferable:

8. (c) The hunter dropped three gazelles with well-placed shots, but these are much more limited in occurrence than the involitive sense.

Jackendoff goes on to note that the explicit causative is not always synonymous with the "transitive" use of drop; (in fact, we should hardly ever expect these to be synonymous):

8. (d) [(2.9)] Floyd caused the glass to drop to the floor by tickling Sally who was holding it.

8. (e) [(2.10)] \*Floyd dropped the glass to the floor by tickling Sally, who was holding it.

I would, in fact, go further and suggest that 'X drops Y', when it presupposes 'X holds Y', is never causative. In other words, the lexicalization of 'X causes X to drop Y' has to be something like X throws Y down. If we compare

9. (a) Fred made Olive drop the gun.

- (b) Fred made himself drop the gun,

we can see that a similar distinction is being made between controller and controlled, even though in (b) it is the same individual who is performing both functions. The immediate subject of drop in what is traditionally called a transitive sentence cannot, therefore, (with a few exceptions such as (8c)), be agentive, since this implies volition.

Other papers on this topic include Fodor 1970, Kac 1972, Shibatani 1972, McCawley 1972b. I have argued my own viewpoint on this question (see section 4.21): there is no reason why the "monolexicalization" (kill) should be identical with the "polylexicalization" (cause to become not alive). This would happen only in such cases as could be absolutely confirmed that the semantic configuration underlying a certain lexical meaning was really complete (and these are few). Normally, in practice, however, we should expect the configuration to represent less than the total meaning required, and thus the polylexicalization corresponding to the separate elements of that construction to reflect that deficiency too; in all cases, the single lexical item should associate with a richer semantic configuration than that represented by the "equivalent" phrase.

The sentences (5) show that even the relationship we can draw between the objects of some sentences and the subjects of others is not a constant one, while those of (6) demonstrate that a multiplicity of grammatical relationships can take place with complete synonymy, given the same nouns, but changing the verbs. In other words, some pairs of verbs will paraphrase each other, though deploying their nouns in different arrangements:

10. (a) I like good books.

- (b) Good books please me, (cf. Chomsky 1965:162-3).

Katz, however, ignores this important criticism of Fillmore's, and instead presents a distortion of Fillmore's proposals (a time-worn, though not -honoured procedure) which he then demolishes. According to Katz, Fillmore is attempting to do what he criticizes Chomsky for failing to do, namely, provide some way of characterising Subject-of, Object-of etc., and

the semantic roles associated with them. Katz regards this attempt as placing an unnecessary burden on the syntactic rules, since "if the definitions of grammatical relations already have the function of providing the syntactic information needed for semantic interpretation, then there is no reason to burden them with the further function of providing the basis for predicting semantic roles" (1972:122). His account of Fillmore's proposals, however, reveals deep misunderstanding not only of Fillmore's intentions, but also of his methods. Katz says: "Fillmore's argument requires the premiss that the function of grammatical relations in Chomsky's account of grammar is to provide the full, formal basis for determining semantic roles" (*ibid.*). Fillmore (1969a:361-2) says: "My purpose in this essay is to question the deep-structure validity of the notions subject and object, and also to raise doubts about the adequacy of Chomsky's proposals for formally reconstructing the distinction between grammatical categories and grammatical functions". His intention is not, therefore, to provide "the basis for predicting semantic roles" (at least not in the three closely related essays 1966, 1969a, and 1968), but to provide a more adequate Base. In a more recent essay, Fillmore has this to say about his theoretical position in those earlier papers (1971a:35):

"In spite of an over-exuberant final section in "The case for case", I thought of my work, not as a proposal to eliminate deep structures altogether, but as an effort to find a level of syntactic structure which was deeper than that offered by the then standard theory. My position was what would now be called "deep structure interpretivist"; and since my efforts were largely directed towards the classification of lexical items and the analysis of complement patterns of ordinary verbs and adjectives, it was of the sort that today would be called "lexicalist"."

An example of a syntactic fact which the Chomskyan Base cannot account for is given in Fillmore 1968:22:

11. (a) John broke the window.
- (b) The hammer broke the window.
- (c) ?\*John and a hammer broke the window.

The ungrammaticality of (11c) is explained by Fillmore as contravening the rule that "only noun phrases representing the same case may be conjoined". How would Katz explain it?

Katz's account of "case grammar" is disappointing, because it seems to ignore wider issues by confining itself to the limited question of the function of the phrase-structure rules. Let us assume for a moment that Katz is

right in believing that Fillmore is attempting to find a basis for predicting semantic roles, and that this is a superfluous undertaking in a Chomskyan grammar, since they "are represented at the semantic level by [the sentence's] reading" (1972:112). Even if we were to accept that, Fillmore's evidence for the inconsistency of any grammatical function/constructional meaning relationship sounds the death-knell for the functionally-determined projection rule, since the grammar will need one projection rule for the meaning of the subject-predicate relation in

11. (a) John broke the window.

another for that in:

(b) The hammer broke the window.

and perhaps yet another for:

(d) The frost broke the window.

and these differences are not predictable either from the grammatical relation or from the grammatical category.

It is questionable whether Katz's semantics can in fact account for semantic roles at all, since these are not inherent semantic features of the lexical item (and on this notion cf. sections 4.13, 4.22 above), but vary according to the relationship between different predicates and their arguments, and the proximity of different items in the context. Compare:

12. (a) The door opened

(b) John opened the door

(c) The key opened the door

(d) John opened the door with  
the key

(e) ??It was an openable door

14. (a) The door collapsed

(b) John collapsed the door

(c) The key collapsed the door

(d) John collapsed the door  
with the key

(e) It was a collapsible door

13. (a) The door slammed

(b) John slammed the door

(c) \*The key slammed the door

(d) ?John slammed the door  
with the key

(e) ?\*It was a slammable door

15. (a) The door creaked

(b) ?John creaked the door

(c) \*The key creaked the door

(d) ?\*John creaked the door  
with the key

(e) \*It was a creakable door

Katz claims (1972:112-3) that the roles of "agent" and "recipient" (at least) are definable in terms of the configuration of certain elements in semantic representations. Apart from the clumsiness of this expedient, it seems unlikely that it can correctly distinguish between the semantic roles of John and key in the above sentences, since in his sample entry (p. 358) these are both "[NP, S] (Cause)". Moreover, with some verbs, there is

difficulty in differentiating between roles:

16. (a) The aeroplane flew
- (b) The eagle flew
- (c) John flew (2 meanings)
- (d) John flew the aeroplane
- (e) ?John flew the eagle
- (f) ??John<sub>i</sub> flew John<sub>i</sub>  $\Rightarrow$  ??John flew himself
- (g) ?The aeroplane<sub>i</sub> flew the aeroplane<sub>i</sub>  $\Rightarrow$  The aeroplane flew itself

Later in his 1972 work, Katz provides a further modification designed to "undermine Fillmore's strongest simplicity argument for case grammars" (see pp. 357-360), namely that they enable an item like open to be entered only once in the dictionary. Katz claims that his system allows this too. He replaces a dictionary entry for an item such as open, which has one reading for its transitive, and one for its intransitive, form by a single amalgamated reading which makes use of a new notational device. By this, each categorised variable "slot" can contain not one, but two, grammatical relations (though presumably not more), linked by the symbol " $\lrcorner$ ". The function of this device appears to be, as far as I can tell, to allow either a subject or an object (and note well, a deep-structure subject or object) to appear in any position where one of these linked variables is marked, and if there are two (or more?) such positions:

$$\begin{array}{c} [\alpha \lrcorner \beta] \\ \underline{X} \\ \langle \rangle \end{array} \quad \text{and} \quad \begin{array}{c} [\beta \lrcorner \alpha] \\ \underline{X} \\ \langle \rangle \end{array}$$

then the first must be  $\alpha$  and the second  $\beta$ , provided that these grammatical relations are in fact represented. If  $\beta$  is not, then the first semantic marker is erased together with the symbol "(Causes)", (which appears in the transitive reading for open). Katz's own words do not clarify the function of this device any more than my halting and uncertain paraphrase does:

$$\begin{array}{c} \text{"(7.212) ((...} \quad \begin{array}{c} [\text{NP, S} \lrcorner \text{NP, VP, PP, S}] \\ \underline{X} \\ \langle \rangle \end{array} \quad \text{...)} (\text{Causes}) ((...} \quad \begin{array}{c} [\text{NP, VP, PP, S} \lrcorner \text{NP, S}] \\ \underline{X} \\ \langle \rangle \end{array} \quad \text{...}), \\ \text{..., (...} \quad \begin{array}{c} [\text{NP, VP, PP, S} \lrcorner \text{NP, S}] \\ \underline{X} \\ \langle \rangle \end{array} \quad \text{...))} \end{array}$$

The notation in (7.212) is understood as follows. The values of a categorized variable of the form  $\begin{array}{c} [\alpha \lrcorner \beta] \\ \underline{X} \\ \langle \rangle \end{array}$  occurring in a reading R can be readings of constituents that bear either the relation  $\alpha$  or

the relation  $\beta$  to the constituent to which R is assigned. But if  
 a reading R has a pair of categorized variables  $[\alpha \int \beta]$  and  $[\beta \int \alpha]$ ,  
 $\underline{X}$  and  $\underline{X}$ ,  
 $[\alpha]$  and  $[\beta]$ ,  
 then the first variable is equivalent to  $\underline{X}$  and the second is equivalent  
 to  $\underline{X}$  (that is, the first occurrence of a function takes precedence  
 $[\beta]$   
 $\underline{X}$  over the second) just in case there is both a constituent that bears  $\alpha$   
 to the constituent to which R is assigned and a constituent that  
 bears  $\beta$  to the constituent to which R is assigned and the entire  
 semantic marker in which the first occurs, namely  
 $[\alpha \int \beta]$   
 '(...  $\underline{X}$  ...)' and the symbol '(Causes)', is erased just in  
 $\underline{X}$   
 case there is no constituent that bears  $\beta$  to the constituent to  
 which R is assigned."

It is difficult to imagine what other use than the dictionary specification  
 of a few verbs like open this complicated convention could have (assuming  
 it works for even that purpose). This ad hoc-ness, whatever the other  
 merits of the situation, means that Fillmore's position is far from being  
 undermined.

Their dependency upon the ill-defined notion of "grammatical relation",  
 then, is clearly a crucial weakness of the Mk. I-III models. Does the  
 Mk. IV model fare any better? I have already mentioned that the main  
 amendment this makes is to switch the machinery for relating semantic  
 interpretation to grammatical relationships from the projection rules to  
 the "categorized variables". This of course then obviates the need for a  
 separate projection rule for each distinct grammatical relation, and Katz  
 is able to replace these with a single rule of substitution which "operates  
 by substituting the reading of a constituent for a categorized variable in  
 the reading of another constituent just in case the constituents bear a  
 grammatical relation to each other and the governing selectional restriction  
 is met" (1972:114). By this modified machinery, Katz believes that "the  
 substance of those [earlier] claims ... that there is a different type of  
 semantic combination that corresponds to each different grammatical relation,  
 had been incorporated into [the substitution rule] in connection with the  
 apparatus of categorized variables" (1972:115). This belief is unjustified,  
 I think, because Katz appears to slide over the question of exactly how this  
 is to be effected. The rule itself, complex though it is, mentions grammat-  
 ical relations only twice, once in a condition on the phrase marker under-  
 going the rule (that the constituents in question "bear the grammatical

relation H" to each other); and once in the substitution operation, where "each occurrence of the variable categorized for H" is replaced by a reading from the other constituent whose meaning is being combined. But Katz provides no method of distinguishing between the semantic combination of, say, [NP, S] with [VP, PP, S], and that of [NP, VP, PP, S] with [VP, PP, S]. He has incorporated into the complex symbol, therefore, the syntactic conditions on projection rules, but he has made no provision whatsoever for the different operations which those conditions formerly introduced. In this respect, then, Mk. IV has lost some of the power of the previous models, though it enables the simplification of the semantic component, which can now consist solely of a dictionary. (The substitution rule is a formal universal of the theory, and therefore does not appear in the language-specific semantic component). In fact, the loss is crucial, since it is now impossible in a Katzian grammar to achieve larger-constituent meaning as a function of the combination of both lexical readings and constructional meaning: the latter certainly cannot be specified now, even if it could have been before.

To return to our sheep, therefore, can the meanings of restrictive and non-restrictive relative clauses be adequately specified and distinguished in the various semantic models dealt with above? Several observations must be made:

- A. No phrase-marker occurring later than DS (i.e. including one or more transformations) can be semantically interpreted given the Katz-Postal "meaning-preserving" hypothesis.
- B. Therefore, at the DS stage, the only possible nominal "modification" is in the form "...N (S') ..." (and in fact, on the phrase structure rules given in Chomsky (1965:106-7) and repeated in Katz (1972:108), the other types of modification cited by the latter, viz. verb-adverb and adjective-adverb, cannot derive from S', because they are not clausal but phrasal. Indeed, the typical adjective-adverb modification, that of degree or intensity, is not representable at all. However, this is a matter of amendable detail).
- C. Thus the grammatical relations we are interested in at this point are, in Chomsky's notation, [N, NP<sub>i</sub>] and [S', NP<sub>i</sub>], i.e. between the noun of a noun phrase and the attached S' of the same noun phrase. In this a "legitimate and traditionally recognised" grammatical relationship? Katz seems to think so (1966:165), but nowhere does he attempt to justify this belief. You will remember that Chomsky and Katz differ on the suggested criterion for such relationships (see discussion above). Katz's proposal is quite



circular and can therefore be disregarded; Chomsky's suggestion is that "there are selectional restrictions governing the paired categories " (1965:73). What selectional restrictions, therefore, operate between  $[N, NP_i]$  and  $[S', NP_i]$ ? The only restriction which must be present is an identity condition between  $[N, NP_i]$  and an N in  $[S', NP_i]$  (subject to certain conditions: see Ross 1967, Postal 1971). However, identity conditions usually function as conditions on analyzability for transformational rules, or else, in the Aspects (1965) model, where generalized phrase-markers have replaced generalized transformations, presumably they function in the filtering process: if the condition is not met, the attendant transformations do not operate, and the string is blocked as ill-formed. So, by this Darwinian device, only the well-formed strings get through to the surface. It has never been suggested, however, that such conditions are "selectional restrictions" in the sense of Chomsky 1965, nor indeed are they, since selectional restrictions are constraints on the syntactic features which can co-occur with some given symbol (usually a complex symbol) (1965:95).

It should be noted, though, that Smith (1969:248) uses the term in respect of the constraints operating between determiners and  $R_s/NR_s$ , e.g. in

17. (a) \*Any book, which is about linguistics, is interesting.

(b) The book, which is about linguistics, is interesting,

but these concern not the  $[N, NP_i] - [S', NP_i]$  relation, but the complicated relationship between quantifiers and/or determiners in sentences in discourse. These appear to be determined semantically, rather than syntactically, since although the general rule is that (with certain exceptions) first mentions are indefinite and subsequent mentions definite:

18. (a) In the depths of winter, a man could be seen trudging up a steep hill. The (or this) man was aged about forty, and he had a slight stoop ...

this rule can be overridden for stylistic reasons (i.e. because the writer wishes to say something slightly different):

(b) In the depths of winter, a man could be seen trudging up a steep hill. A man aged about forty, and with a slight stoop ...

G. Lakoff (1969: passim) and McCawley (1970:167-8) have shown that many selectional restrictions, at least, operate with semantic assumptions, such as beliefs or situational factors, and not with syntactic information. Identity conditions, however, require sameness of both a semantic and a

formal kind, semantic in that it is the same entity which must be referred to again, and formal in that the reference must be in the same terms (though not necessarily with the same quantification or operators). Selectional restrictions demand class-membership of an item; identity conditions demand complete type-token-expression similarity. Thus the successive sentences in a discourse:

19. (a) Richard Nixon addressed his supporters. The winner of the 1972 Presidential election was jubilant over his victory, could not be combined as a NR relative; the NR relative:

(b) Richard Nixon, who was jubilant over his victory, addressed his supporters,

cannot be derived from the earlier pair of sentences, since it does not contain the information that Nixon was the winner of the 1972 Presidential election, nor indeed the implication (derived from partial semantic similarity between winner and victory) that this was the victory in question. The structure underlying the relative clause, if it were an independent sentence, would be:

(c) Richard Nixon was jubilant over his victory, and in order for the relative transformation to take place, not only this formal identity, but also identity of reference must be guaranteed. An identity condition, therefore, is a complete (saving certain combinations of quantifiers, determiners etc.) semantic/formal matching of a constituent in S with a constituent in S' i.e. in intersentential circumstances of conjunction or subordination (with the sole exception of reflexivization); a selectional restriction, on the other hand, is a stipulation that one constituent of S should contain a certain semantic feature (not syntactic, as Chomsky claims; and never to the best of my knowledge, more than one) when connected grammatically with another constituent of S, usually a predicator, i.e. in intrasentential circumstances. I conclude from this, therefore, that the SR machinery, which is the executive apparatus for Katz's semantic rules, cannot in fact handle the alleged traditionally recognised relation of modification. This being so, there is nothing left of Katz's semantic machinery which can combine the meanings in question: both projection rules and the later substitution rule which takes their place have been shown to be inadequate for this task. The only remaining combinatory semantic device is the selectional restriction expressed in the readings of lexical items or in the later categorised variable readings, and this too has <sup>been</sup> shown to be incapable of handling modification. We are

left, therefore, with a situation in which sentence structures can be generated as generalised P-markers, in which lexical insertion can take place, but in which no further interpretation of meaning is possible if the P-marker happens to be of a certain type (and, arguably, impossible with all P-markers, in both the Mk. III and the Mk. IV models, since the latter as we have seen has lost the capacity to combine meanings differently according to the different syntactic constructions they occur in, and the former perhaps never had that capacity).

D. So far, I have not distinguished again between Rs and NRs, and all the discussion in C above has centred on the question of what grammatical relations exist between the components of a R relative. Do these remarks also extend to NRs, however? Many linguists (e.g. Ross 1967, Lakoff 1968a, Jacobs and Rosenbaum 1968, Schachter 1972, Ree 1970) suggest that NRs derive from underlying conjoined Ss, while some go so far as to propose that both R and NR have a conjunction source (Postal 1967, apparently; Thompson 1971). The nature of the grammatical relationship which exists between conjuncts, (for which no nodal formula can presumably be given, since sentential conjuncts do not form nodes distinguishable one from another on one single tree), is considerably easier to allude to than to define. Two conditions which are required for satisfactory conjunction may be termed "constructional equivalence" and "semantic coherence", the former particularly for phrasal conjunction and also for reduction and gapping in sentential conjunction (see Chomsky 1957, Gleitman 1965, Ross 1970, Koutsoudas 1971), and the latter as a precondition on conjunction generally (see particularly R. Lakoff 1971b and section 5.3 above). (We can ignore the question of phrasal conjunction here, since any putative conjunction source for relative clauses would involve only the sentential variety). In addition, for those conjoined sentences which would later undergo the NR transformation, (which would presumably be a "stylistic" transformation), there would be an identity condition between NPs in the two Ss conjoined, similar to that discussed above for Rs taken to be embedded. Of these three types of relationship, we can immediately dismiss the identity condition (see discussion above) and constructional equivalence (since we are not concerned with phrasal conjunctions, nor with gapping, which handles verb deletion, nor with conjunction reduction, which invalidates the NR transformation if it is ordered before it, or simply does not apply at all if it is ordered after it (see sections 3.223 and 5.3)). This leaves "semantic coherence" as a possible condition making use of selectional restrictions. At first blush, there is a certain amount of

plausibility in this, since semantic coherence in some instances of conjunction (or the "common topic" as Robin Lakoff terms it) can revolve around a single semantic feature, e.g.

20. John owns a yacht but Harry has a large mortgage

where the predicate of the first conjunct might be said to contain some such features as [+ Advantage], while that of the second contains its reverse, and a selectional restriction could conceivably be formulated stipulating this or some more general condition, e.g. that some semantic feature in conjunct A should be matched by its negation in conjunct B, for but-coordination. This has a certain superficial appeal, were it not for Robin Lakoff's convincing demonstration that knowledge of presuppositions and deduced assumptions are crucial for fully grammatical conjunction (and cf. section 2.15). Thus in (20), the suggested semantic features are in fact presuppositions about the predicates conjoined, and given different cultural assumptions the sentence would be ungrammatical, or at least less grammatical, e.g. that both owning a yacht and having a mortgage were unbearable liabilities - in which case and would be a more appropriate conjunction, and but hardly acceptable at all. Given such arguments, then, selectional restrictions appear to be quite unsuitable for handling conjunction, and therefore one would not expect to find them in the machinery for semantically interpreting it, either. One might in fact state such assumptions in terms of meaning-postulates.

I therefore conclude that semantic interpretation of relative clauses within the Aspects-model is impossible in the present state of the art, and that this is the case whether relatives are derived from embedded or conjoined sources.

#### 6.12 "Extended-Standard-Theory" approaches

Many, possibly most, modern linguists will perhaps consider the foregoing discussion and, I believe, refutation of the semantic component of Katz to be so much wastepaper, on grounds unconnected with the intrinsic merits of my arguments. The standard theory of Aspects, they may feel, is a dead letter now anyway, espoused only by Jerrold Katz and his students. The mainstream of Transformational Linguistics has forked, leaving Katz behind, up a little creek. While I agree that Katz's mark IV model is particularly sterile and ill-formed, I cannot, however, agree that his semantic component has already been consigned to the rubbish-dump of linguistic theory (to change metaphors yet again). I say this because the

revision of ST which Chomsky and others now maintain, the so-called "extended standard theory" (EST), appears, so far as can be judged by exegesis, to rely on the projection rules of the marks I-III models no less than did (or does) ST. (I am referring to the Aspects-model as ST, despite the fact that <sup>G.</sup>Lakoff 1971 points out crucial differences between them).

It would not be appropriate in this place to argue the pros and cons of the EST model, since very little discussion of relativization has actually been published using this framework. There are some features of the model I should like to mention, however, since they have a bearing on suggestions I shall presently be making. I shall also discuss the one or two references to relativization I have been able to locate in EST literature.

The first, and possibly the central, point is that EST does away with the principle of "meaning-preservingness" (cf. Partee 1969), first stated tentatively in Katz and Postal 1964, erected into a tenet of ST and, one might say, into an axiom of Generative Semantics (GS). Jackendoff 1972 discusses meaning-preservingness under the label of "the Katz-Postal Hypothesis" (5 sqq.), which he characterises as having two forms: the weak claim (KP<sub>1</sub>) and the strong (KP<sub>2</sub>). KP<sub>1</sub>, "the form Katz and Postal state and claim to prove" (p. 8) is:

Semantic projection rules operate exclusively on underlying phrase-markers; hence transformations do not change meaning. (p. 7).

KP<sub>2</sub>, "the universally accepted form of the hypothesis" (p. 8) is:

All semantic information is represented in underlying structure (p. 7).

The difference, as Jackendoff points out, is that projection rules themselves could conceivably provide meaning under KP<sub>1</sub>, but not under KP<sub>2</sub>. However, it should be pointed out that Katz, in all of his subsequent work, does not himself propose that projection rules carry meaning: for him, they are rules that progressively combine the meanings of constituents according to the grammatical relationship which holds between them. Both the meanings and the grammatical relation are present in deep structure; the projection rules merely combine the former in accordance with the latter. This remains the case even in Katz's 1972 model (cf. discussion above), except that the projection-rule equivalent is not itself constrained to operate on some particular syntactic construction: that condition is now implicit in the deep structure configurations whose meanings are to be combined. Thus, Katz's most recent practice shows that he wishes to preserve the integrity of his deep structure although prepared to tinker with the rule-mechanisms of his model. Jackendoff's position is evidently the reverse of this: he apparently

wishes to retain the mechanisms of the Aspects semantic component, and in particular the projection rules, while allowing them to apply at later stages in the derivation than deep structure. He justifies this with examples that purport to show that there exist meaning distinctions which depend on derived rather than underlying structure, particularly when a quantifier is present. It would not be relevant to rehearse Jackendoff's arguments and data in detail here, since they mainly concern negation, adverbs, pronouns, modals and focus, and his remarks on relativization, which I will discuss presently, are a side-issue for his main line of reasoning. Two points, however, are apposite: first, at least some of Jackendoff's data is of dubious value. I have already noted his faulty analysis of the predicate drop (see section 6.11 above), and his chapter on negation (1972, Chap. 8) also contains some questionable conclusions. For example, he provides some alleged counter-examples to the meaning-preservation hypothesis but apparently fails to notice that some of the sentences are ambiguous, which makes his account vacuous at that point. These are the well-known "arrow/target" sentences, originally discussed by Jackendoff in an earlier paper (1969). I do not wish to go into the details of his evidence and argumentation, but merely to question one central assertion of his, namely that the passive sentence:

21. (a) The target wasn't hit by many of the arrows  
does not have a reading corresponding to:

(b) Many of the arrows didn't hit the target,  
but is in fact synonymous with:

(c) Not many of the arrows hit the target.

He purports to show this by demonstrating the ungrammaticality of (21a) and (c), but not (b), when but-conjoined with many of them hit it:

21. (a') The target wasn't hit by many of the arrows, but many of  
them hit it.

(b') Many of the arrows didn't hit the target, but many of them  
hit it.

(c') Not many of the arrows hit the target, but many of them  
hit it.

It is Jackendoff's asterisking of (21a') which I would challenge. In fact (21a') is contradictory in some circumstances, e.g. with focus on many, in which case a form of neg-attraction takes place in the semantic structure, blocking (21a') and (21c') as possible surface forms, since the conjunction

would then contradict the assertion. Similarly, (21a') is contradictory with focal stress on target, hit, and arrows. However, how much of this is due to different neg-scope across quantifiers and how much to the fact that but-conjunction requires a contrast between the conjuncts, and the only possible contrast in (21a') is the polarity of the verb? Thus the only possible interpretation of (21a'), and indeed of its fully passivized counterpart (21a''), which is the sentence Jackendoff actually discusses

21. (a'') The target wasn't hit by many of the arrows, but it was hit by many of thmm,

is one which says that an appreciable number of arrows missed the target, but an appreciable number also hit it. This merely shows that as a test for neg-scope, but-conjunction leaves something to be desired. However, I think it perfectly acceptable to interpret (21a) as synonymous with either (21b) or (21c), although it should be pointed out to Jackendoff that (21a) is not the result of simply passivizing (21c) (as it is of (21b)); neg-raising is required as well. A slightly (though not much) better test than Jackendoff's is lexicalization (or "incorporation", to use Gruber's (1965) term). Thus, NOT-MANY in (21c) can be lexicalised into few, and NOT-HIT in (21b) into miss, giving:

22. (a) Many of the arrows missed the target.  
(b) Few of the arrows hit the target.

If we passivize these, we get:

22. (a') The target was  $\left\{ \begin{array}{l} \text{missed} \\ \text{not hit} \end{array} \right\}$  by many of the arrows.  
(b') The target was hit by  $\left\{ \begin{array}{l} \text{few} \\ \text{not many} \end{array} \right\}$  of the arrows.

Notably, (22a') is perfectly interpretable as the passive of (22a) and therefore of the synonymous (21b).

Of course, these facts may merely reveal that there is a dialectal difference between Jackendoff and myself. George Lakoff touches on this possibility (1971:244), but accepts Jackendoff's data for the sake of argument. He then provides a derivational constraint which neatly accounts for these facts as well as others elsewhere in the grammar. This brings me to the second general observation I wanted to make about Jackendoff's work, and this concerns the question of filters.

As Paul Postal demonstrates (in "The best theory", in Peters 1972:157), "there is a body of evidence of different types strongly suggest[ing] that a theory involving base trees and transformations must be supplemented at least by a component of rules which are filters". Postal defines a filter

as a rule defined on a derivational sequence (a sequence having a semantic representation as its initial member and a surface structure as its final member), "which has the function of marking as ungrammatical or ill-formed sequences which may be perfectly well-formed as far as the base rules and transformations are concerned. Such sequences are marked as ill-formed just because they fail some structural condition which defines the relevant filter" (op.cit:138). I have already mentioned, in connection with George Lakoff's work, the term derivational constraint. This is to be taken as practically synonymous with Postal's filter, except that the former takes transformational rules simply as special cases of derivational constraint involving successive trees in a derivation: these Lakoff calls local derivational constraints as we have seen. The remainder, involving non-successive trees, are the global derivational constraints, and these are equivalent, as far as I can tell, to Postal's filters. Both of them use this latter type of rule to restrain the over-powerful application of transformations; their grammar thus consists of a component of tree-forming rules, a component of tree-deforming rules, and a component of tree-prohibiting rules. The rules of the first two components are unordered, unrestricted, universal, and much too powerful. Therefore, the third component is required for, one supposes, two objectives:

- (a) to characterize, with the transformational rules, the differences between languages, and, at a lower level in the derivation usually, between dialects;
- (b) to capture the conditions under which rule-processes and types of rule operate, and the generalizations which can be made about them; at a lower level, perhaps, to tidy up loose ends across a number of rules.

Perhaps the clearest statement of (a) is in Postal (op.cit:157) who notes the necessarily ad hoc nature of filters and their language-/dialect-particular application. G. Lakoff (ibid.) seems to regard them as more language-universal, and talks (p. 260) about "the norm" and "basic constraints" from which particular dialects may vary. Postal's account, however, seems to me to be more natural and revealing at this point.

I now want to relate this discussion of filtering rules to Jackendoff's EST model. Lakoff (op.cit:265) asks the question: "Are Jackendoff's interpretation rules simply notational variants of derivational constraints?", and concludes that there is not really enough information provided by Jackendoff to decide the answer to this. A piece of evidence which could



be significant however, emerges from a comparison of Jackendoff's semantic interpretation rule for pronominalization and Langacker's (1969:167) restriction (i.e. global derivational constraint/filter) on pronominalization (and one might also include Ross's (1969:192) conditions on his pronominalization rule):

23. (a) "NP<sup>1</sup> coref  $\left[ \begin{array}{c} \text{NP}^2 \\ + \text{ pro} \end{array} \right]$  unless NP<sup>2</sup> both precedes and commands NP<sup>1</sup>"  
(Jackendoff 1972:118)

(b) "NP<sup>a</sup> may pronominalize NP<sup>D</sup> unless (1) NP<sup>D</sup> precedes NP<sup>a</sup>; and  
(2) NP<sup>D</sup> commands NP<sup>a</sup>"  
(Langacker 1969:167)

Jackendoff, of course, notices the similarity; indeed his rule is explicitly based on Langacker's. But the similarity goes farther than the form of the rule: his interpretive rule is placed at exactly the point in the grammar where the transformational rule for pronominalization takes place (and therefore also at the point where the filter will operate). The difference between these statements may be characterized as follows:

23. (a') Given: a full NP A and a pronoun a,

Then: A and a corefer, unless the condition applies.

(b') Given: two full NPs which corefer, A and A',

Then: A pronominalizes A' to a, unless the condition applies.

The rules are very clearly the reverse of each other, and given the non-directionality of a formal grammar, are therefore notational variants. (In fact, both Langacker and Jackendoff eventually derive more complicated rules to describe the phenomena, but (23a) and (23b) remain at the core of their proposals).

As has been well-known from fairly early on in the transformational era, there are two main sources of evaluation of a grammar, one involving its data or content, the other the model used:

(i) Content-evaluation: That grammar which accounts for the most data is most highly-valued. (Terms such as 'general' and 'comprehensive' belong here).

(ii) Model-evaluation: That grammar which has the simplest structure, consistent with (i), is the most highly-valued. (Terms such as 'simple', 'consistent' and 'elegant' belong here).

For the evaluation of current rival theories of language, criterion (i) seems to be quite indeterminate: both GS and EST appear to solve some problems and

to fail with others. As for criterion (ii), Postal at least contends that GS (or that version of it which he terms "Homogeneous II") represents the simplest concatenation of generally-agreed requirements, complicated only by the addition of a filter rule component, whose presence he demonstrates to be essential (op.cit.) by criterion (i).

Before I leave this general discussion of current theories and examine Jackendoff's specific mentions of relativization, I should just like to redress some distortions which I have made in the preceding arguments. First, it should be made clear that the work by Langacker and Ross on pronominalization which I have just quoted was not at the time it was written anything which could have been called 'Generative Semantics'. Both are clearly working within an Aspects framework. However, the precede-command restriction on pronominalization has been taken over quite happily into GS: cf., for example, Lakoff (op.cit.), who in fact uses much the same condition in a global derivational constraint, though with a different scope which does not include pronominalization (238 sqq.). Another distortion is to represent Jackendoff as an unregenerate syntacticist/interpretivist; in fact, in his latest published work, (1972), his semantic component looks very like a Fillmorean case grammar and contains semantic well-formedness conditions (particularly the Thematic Hierarchy Condition) which look very much like underlying structure constraints (i.e. applying pretransformationally). As in the ST, however, this semantic component is not autonomous but exists in conjunction with a separate base. The essential difference between ST and EST at this point is, I take it, the relative power of the semantic component; in the ST, the semantic component is distinctly subsidiary to the base, and does little more than provide a few extra semantic markers and other semantic information. One of the major arguments which Katz makes for the relative importance of the base as opposed to the semantic component is that in order to correctly combine the readings of two constituents to obtain the amalgamated reading of the node which dominates them, we have to know which grammatical relation holds between those constituents. This information is provided in the base in ST, but Jackendoff locates it, as "functional structure" expressed in terms of cases, in the semantics. This is an important step towards an autonomous semantic position.

The semantics of relative clauses has not figured prominently in Jackendoff's work, nor, indeed in any of the interpretivist studies that I have seen, whether Standard or Extended. The most apposite references are

Jackendoff (1968:16 sqq.) and (1972:59-62). The first of these references relates generic restrictive relative clauses to conditional clauses, while the second relates some adjectives to adverbs and others to relative clauses. What is under discussion here, though, is the nature of the posited relationship. In all the cases just mentioned Jackendoff attempts to capture the relationship not in terms of deriving one thing from the other, as is traditional in TG, but by viewing the items as structural parallels, or as particularizations of the same abstract structure. This abstract structure is then to be interpreted by a rule "in general form like the projection rule of modification proposed by Katz for adjectives" (1968:17). "To get a reading for a base-generated adjective-noun combination, we will need a projection rule of attribution, more or less like the one Katz and Fodor (1963) discuss for this construction" (1972:61) ... "the projection rule for relative clauses must in fact be the same rule of attribution ... the only difference between the two projection rules is some sort of formal operator" (op.cit:62)

As we saw in an earlier section, the particular projection rule to which Jackendoff alludes cannot work, since there is no principled way provided in Katz's grammar to distinguish between those structures to which the projection rule applies and those which it does not affect at all. My arguments against Katzian projection rules were based on two objections:

- (i) In general, the rules depend on the notion of "grammatical relation" between the elements whose meanings are to be combined. This I showed to be an uncapturable notion in ST, and especially difficult for the relationship between a relative clause and its antecedent.
- (ii) In particular, Katz's examples were remarkably ill-chosen, since he set himself the task of specifying the deep-structure interpretation of an item which, by his own grammar, could not exist in deep-structure.

Thus, Katz's account was shown to have come to grief on the question of deciding that two items are "grammatically related" even before the projection rule can begin to apply. We found that the "legitimate and traditionally-recognised" grammatical relations "Subject-Verb" and "Verb-Object" could not easily be specified, and that the alleged "legitimate and traditionally-recognised" grammatical relation of "modification" was not even backed-up with suggestions for specification. It may be objected that such specification is provided in the categorial component of the base, but this is not in fact so: what the categorial rules generate is a set of trees whose nodes

are labelled with uninterpreted category symbols. A relationship between any pair of these symbols can be stipulated simply by tracing the shortest route between them in terms of the intervening and dominating nodes. The trick, then, is not merely to find a way of expressing grammatical relations using only category-symbols in nodal configurations: that is a simple matter; it is to find a means of specifying all and only the important grammatical relations, and this cannot be done through the categorial component.

Let us now, therefore, test these objections to Katzian projection rules on Jackendoff's model. Since Jackendoff does not restrict his semantic rules to deep structures, clearly point (ii) above does not apply. As we have already seen, he explicitly links together the interpretation of adjectives with that of relative clauses, not through any common derivational source, but through having the same, or a very similar, interpretation rule apply. The content of this rule is "more or less" the same as Katz's modification rule, and indeed Jackendoff paraphrases it in his own terms:

"This rule essentially takes the union of the semantic markers of the adjective and the noun to produce a reading for the  $\bar{N}$ ." (1972:61).

This is the Structural Change of the rule; the Structural Description includes the stipulation that one term is the head and the other the modifier and that they are both dominated by the same node. "Head" and "modifier", like "modification", are not terms defined in, nor definable by, the categorial component in ST. Is the situation different in EST? Essentially, the answer to this is "no", I think. Thus, despite the fact that one group of adjectives is schematically related to adverbs, while another group has affinities with reduced relative clauses, some way still has to be found of distinguishing one type of  $\bar{N}$  (= NP) element (say, relative clauses) from another (say, NP complements), either in the categorial component or in the functional structure rules in the semantic component. Neither appears adequate to the task. I do not find this surprising, since, as I hope has become clear in the preceding study, what is unique about relative clauses is not their categorial analysis nor their functional structure, but their semantic role, which is to restrict the reference of an NP, in the case of restrictives, or to extend information about an NP (including the speaker's attitude towards it), in the case of non-restrictives.

In summary, it must be pointed out that Jackendoff never in fact gives that attribution rule in full, so that it is almost impossible to evaluate his account of adjectives and relative clauses. In fairness to him, however,

it must be admitted that this topic is clearly not of central interest to Jackendoff, and only arises at all in connection with adverb interpretation. I have, however, discussed some of the more specific points about relativization which he raises in various places, at the appropriate points in my preceding argument.

6.2 Discourse-study: a brief review

Since my primary purpose is explanatory rather than historical, I will confine myself to representative samples of the major approaches to the study of discourse. The field of discourse is a well-, though not deeply-, ploughed one in European linguistics, notably in the Post-Saussurean schools of Prague and Copenhagen. American Structuralists, again probably due to Bloomfield's negative recommendation, tended to confine their attentions to the sentence:

"each sentence is an independent linguistic form, not included by virtue of any grammatical construction in any larger linguistic form"

(Bloomfield 1933:170)

As with the treatment of meaning, this attitude to discourse has persisted into the work of Chomsky, which is somewhat ironical in view of the fact that the transformation itself was developed by Chomsky's supervisor, Zellig Harris, as a procedural tool for the analysis of discourse. The ST view of the autonomous S is summed up by Katz and Fodor:

"Grammars seek to describe the structure of a sentence IN ISOLATION FROM ITS POSSIBLE SETTINGS IN LINGUISTIC DISCOURSE (WRITTEN OR VERBAL) OR IN NON-LINGUISTIC CONTEXTS (SOCIAL OR PHYSICAL)"

(1963:173; the emphasis is theirs).

Roman Jakobson, on the other hand, expressing in this instance the older Prague School tradition, says (1960:352):

"... when the sentence is viewed by some linguists as the highest analyzable construction or when the scope of linguistics is confined to grammar alone or uniquely to nonsemantic questions of external form ... the field of linguistics appears to be illicitly restricted".

A younger generation of generative grammarians appear to concur with this criticism of Jakobson's (e.g. G. Lakoff 1973, Sanders 1969, Karttunen 1971, Delisle 1973, Muraki 1972), but again the most successful work, within a generative framework, is European (especially Van Dijk 1972, 1973). However, outside generative grammar, a considerable amount of classification at the level of discourse has been undertaken particularly by tagmemicists,

and to a lesser extent, by stratificationists. In this country, as I have mentioned earlier, some study of discourse has been carried out by neo-Firthians.

The exempla I shall be discussing, with their affiliations, are:

- (a) Zellig Harris (1963): structural.
- (b) A. A. Reid et al. (1968): tagmemic.
- (c) R. Cromack (1968): stratificational.
- (d) J. Sinclair and R. M. Coulthard (1975): systemic.
- (e) T. A. van Dijk (1972); generative semantic.

#### 6.21 Zellig Harris 1963

Harris' interest in discourse analysis is a logical extension of his interest in analysis at the other levels, and particularly in discovery procedures for isolating and identifying elements at each level (which he regarded as building up into the units of the next higher level). By means of a set of mechanical simplification rules (called "transformations"), Harris first reduces ("normalizes") his text to a list of "optimal sentences", known as "intervals" or "periods". By applying equivalence formulae to these, he is able to obtain a set of cross-sentential equivalences, grouped into classes for a particular discourse. These formulae or operations are of two kinds:

(i) The "basic operation"

- (a) Two elements are absolutely equivalent ( $=_0$ ) if they "are" the same morpheme sequence;
- (b) Two elements are primarily, secondarily etc., equivalent ( $=_1, =_2$  etc.) where their environments are absolutely, primarily etc. equivalent.

Thus  $A(F) =_1 B(F) =_1 C(F)$   
and  $D(A) =_2 E(B)$ .

(ii) "Ad hoc equivalences"

- (a) Grammatical parallelism (if two constituents are equivalent, their grammatical parts are, too);
- (b) Textual parallelism (two constituents joined by a conjunction are equivalent);
- (c) Non-recurring adjuncts (e.g. modifier + head = head alone);
- (d) Asserted equivalence ("if the text includes some transform of the sentence 'a is b' or 'a includes b' or the like, we can in many cases [under various restrictions] set  $a = b$ " (1963:10)).

(e) Semantic assumption of equivalence (to be used sparingly and in the least important discourse classes).

The most entertaining discourse analysed by Harris by this method is a Thurber fable, The Very Proper Gander; (for key, see below):

- 24.
1. Not so <sup>Y</sup> very long ago <sup>D</sup> | there <sup>W</sup> was || <sup>S</sup> a very fine <sup>G</sup> gander.
  2. He <sup>S</sup> || <sup>=W</sup> was strong [and <sup>=W</sup> smooth] [and <sup>=W</sup> beautiful] [and he <sup>S</sup> || spent most <sup>Y</sup> of his time <sup>=W</sup> singing | <sup>PN</sup> to his wife <sup>Y</sup> and children].
  3. One <sup>Y</sup> day <sup>D</sup> | somebody <sup>S</sup> [who <sup>S</sup> || saw || <sup>D</sup> him <sup>S</sup> | strutting | <sup>PN</sup> up and down in his yard and singing] || <sup>=W</sup> remarked, || <sup>O</sup> "There is <sup>S</sup> a very proper <sup>G</sup> gander."
  4. An old hen <sup>S</sup> || <sup>=U</sup> overheard || <sup>O</sup> this [and told | <sup>PN</sup> her husband || <sup>O</sup> about it | <sup>PN</sup> that night in the <sup>Y</sup> roost].
  5. "They <sup>S</sup> | <sup>β = H</sup> said | <sup>β = U</sup> something about propaganda", <sup>O</sup> || she <sup>S</sup> || <sup>δ U'</sup> said.
  6. "I <sup>S</sup> | <sup>β = H</sup> have always suspected | <sup>β = U</sup> that", <sup>O</sup> || <sup>β = GW</sup> said || <sup>S</sup> the rooster <sup>H</sup> [and he <sup>S</sup> || went around the barnyard next day telling everybody || <sup>O</sup> that the very fine <sup>G</sup> gander <sup>S</sup> | <sup>=W</sup> was a dangerous bird, [more than likely a hawk in gander's clothing]].
  7. A small brown hen <sup>S</sup> || <sup>H</sup> remembered || <sup>O</sup> a time when at a great distance <sup>PN</sup> | she <sup>S</sup> | <sup>Y</sup> had seen | <sup>O</sup> the gander <sup>S</sup> | <sup>U</sup> talking to some hawks in the forest.
  8. "They <sup>S</sup> | <sup>β = G</sup> were up to <sup>β = W</sup> no good", <sup>O</sup> || she <sup>S</sup> || <sup>U</sup> said.
  9. A duck <sup>S</sup> || <sup>H</sup> remembered || <sup>O</sup> that the gander <sup>S</sup> | <sup>U</sup> had once told <sup>=W</sup> him that he did not believe in anything.
  10. "He <sup>S</sup> | <sup>G</sup> said to hell <sup>=W</sup> with the flag, too", <sup>O</sup> || <sup>U</sup> said || <sup>S</sup> the duck.
  11. A guinea hen <sup>S</sup> || <sup>H</sup> recalled || <sup>O</sup> that she <sup>S</sup> | <sup>Y</sup> had once seen | <sup>O</sup> somebody who <sup>Y</sup> looked very much like the gander <sup>S</sup> | <sup>G</sup> <sup>=W</sup> throw something that looked a great deal like a bomb.
  12. Finally <sup>D</sup> | everyone <sup>S</sup> || <sup>H</sup> snatched up sticks and stones [and <sup>=Y</sup> descended on | <sup>O</sup> the gander's house].

13. He  $S$  || was strutting  $W$  |  $PN$  in his  $Y$  front yard, [ $W$  singing |  $PN$  to his children  $Y$  and his wife].
14. "There  $O$  | he  $S$  |  $W$  | is"!  $O$  || everybody  $S$  || cried.
15. "Hawk-lover!"  
=  $W$  =  $G$   
=  $W$  =  $G$
16. "Unbeliever!"  
=  $W$  =  $G$
17. "Flag-bater!"  
=  $W$  =  $G$
18. "Bomb-thrower!"  
=  $W$  =  $G$
19. So  $D$  | they  $S$  || set upon ||  $O$   $G$  him [and drove |  $O$   $G$  |  $PN$  out of the country].

The text is here annotated by Harris. Greek letters stand for his discourse-operations:  $\alpha$  = "same relation to same environment",  $\beta$  = "same position in same constituent",  $\gamma$  = "irrelevant modification",  $\delta$  = "semantic assumption". For  $\alpha$  and  $\beta$ , this text requires no more than primary equivalence (marked with a double-bar). Indeed, these operations (with the exception of  $\delta$ ) are applied only as the text demands, not, we are firmly told, at the discretion of the analyst. The Roman capitals indicate (i) grammatical relations (only S(subject) and O(bject), with the verb unmarked and defined by S and O, D (adverbial phrase) and PN (preposition plus noun phrase)), and (ii) equivalence classes. Thus, S1 consists of an irrelevant modifier, a predicate W and a subject group G. In S2, he refers to, and therefore is, G, and the three predicate adjectives are therefore primarily equivalent to W. S3 introduces new dramatis personae: somebody, marked H, and its predicate (or rather that of its relative clause, saw) U. By this means, Harris analyses the whole text into two classes of subject, G and H, and three of predicate W, U, Y. He then sets up a "double array", a display of the textual periods re-ordered for purposes of comparison:

"Then each column is an equivalence class, each row shows the composition of equivalence classes into a period, and the sequence of all rows is the transformed discourse itself ... Interpretations about how the assertions of the discourse are related to each other, or about the separability of a discourse into sections which relate to each other may be made". (1963:17, 19)

Three points should be made: first, Harris's method is, of course, fundamentally dependent upon co-occurrence of items grouped in equivalence classes. However, since the constraints upon class-membership are almost exclusively formal, (semantic considerations, it will be remembered, were to be used



extremely sparingly, and in very unclear circumstances), and since there is no formal limitation placed upon equivalence, it follows that all of the elements in a discourse may be analysed into a single equivalence class. Thus, if  $Z =_1 Y$  and  $AZ$  and  $BY$  occur, then  $A =_2 B$ . If  $AB$  also occurs, then  $Z =_1 B$ , and all the sequences become members of one class:  $Y = Z = A = B$ . To be fair, Harris points this out as, in his view, a remote possibility. But all that would be required is that a subject of class H co-occurred with a predicate of class W, which does in fact happen: told in S4 co-occurs with hen (H) and is marked U; but it also occurs with gander (G) in S9, and is there marked = W. Similarly in S10, said occurs with both G and H. This vitiates the whole method.

Second, Harris's sparing use of semantic assumption (discourse operation  $\delta$ ) is so undefined and indeterminate that the reader is at a loss to understand the conditions for its use. In this text, he uses  $\delta$  for members of H: hen, rooster, duck, guinea hen. But how is it that gander itself is excluded from the workings of this operation? It is, after all, a farmyard bird like all the rest. Could there be some other unexpressed reason for not extending  $\delta$  to gander (such as, if he had done, that classes G and H would have collapsed, thus bringing together, by primary equivalence, classes W and U and Y)?

Third, and surprisingly, Harris disregards suprasegmental features almost completely (even going to the lengths of saying that the stress differences between there was a very fine gander and there he is! should be classified as an irrelevant modifier). Furthermore, the homophonic pun upon which the fable turns is classified as = GW, i.e. primarily equivalent to a GW sequence such as "There is a very proper gander" (and presumably any of the others in the first paragraph). But that GW sentence is actually analysed into There is (W) a very proper (  $\gamma$  ) gander (G): the crucial pun has been classed as an irrelevant modifier! For extensive criticisms of Harris' work, see Pak (1971, 1972).

## 6.22 Reid et al. 1968

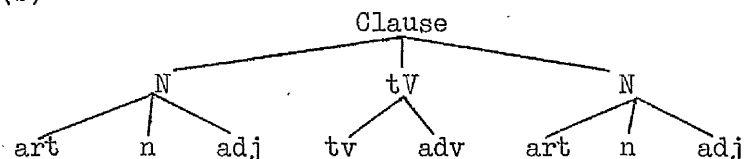
The tagmemicists have probably worked more extensively than any other school on the description and classification of levels higher than S, using for the most part, indigenous languages of North and South America and Oceania. Useful summaries of tagmemic theory and methods with regard to discourse analysis (for, like Harris' work, this is analytic rather than

generative) may be found in Pike 1964, Klammer and Compton 1970 and Schnitzer 1971, and in the introduction, written by Robert Longacre, to Reid et al. 1968. Klammer and Compton make the point (p. 215) that tagmemic analyses are "trimodal", made up of three "interlocking" hierarchies, the phonological, the grammatical and the lexical. However, in practice, most of the tagmemic analyses of discourse published concentrate almost exclusively on the grammatical hierarchy.

As the term "hierarchy" suggests, tagmemics is an Item-and-Arrangement theory (cf. Hockett 1954), in which the main thrust of research is to isolate and classify the items under arrangement at any level, and sub-classify them into hierarchies. The items are slot- and-filler functions, each of which presents not a class-and-constituent relationship, or a category-and-realization relationship, but a composite pairing, or tagmeme, which the filler is said to manifest (i.e. it manifests the tagmeme rather than the slot). Since tagmemics is hierarchical (each tagmeme being expandable to some lower set of tagmemes, via its filler), it is amenable to a PS description and tree-diagramming, e.g. (Cromack 1968):

25. (a) Clause = +S : N +P : tV †O :N/pr  
           N    = †Det :art +H :n †Mod :adj  
           tV   = +H :tv †Mod :adv.

(b)



(p. 8)

Grammatical relationships are expressed by the slots (though there seems to be considerable confusion here: for example, the relationship between +S (subject) and N(oun phrase) seems to be of an entirely different kind from that between †Det(eterminer) and art(icle)). Such relationships as S here are primitives, whereas in ST they are defined in terms of node-configurations (cf. previous discussion in sect. 6.11). In the theory which I have been developing in ch. IV, however, they must be defined in terms of semantic roles, and indeed Pike, in his 1964 article, is moving towards some such idea too, in suggesting that the slot-classes be indexed for "situational roles", e.g. S<sub>ac</sub> (subject-as-actor), S<sub>c</sub> (subject-as-causer) and so on. These are still in the grammatical hierarchy, apparently, and they are

evidently regarded as unrelated classes -  $S_{gl}$  (subject-as-goal) bears no more relationship to  $O_{gl}$  (object-as-goal) than it does to  $S_{ac}$ . TG, of course, will relate the first pair, by a local derivational operation (viz. Passivization).

Tagmemic accounts distinguish two levels above the sentence: paragraph and discourse. The discourse is the whole language event: since most of the published analyses deal with written (or at least orally-traditional) narratives, there is a clear beginning and end. However, other forms of discourse, notably conversations and filibusters, have no such clear demarcation (for a useful listing of different types of discourse, see Hausenblas 1966). The discourse is segmented into paragraphs in a way that most satisfactorily fits in with the initiatory and terminal paragraph tagmemes posited (Reid et al., op.cit:15). Both paragraph and discourse, since they are hierarchical, have a tree structure "which is in no essential way different from a tree structure of a sentence" (op.cit:75). There are six narrative paragraph types: EVENT, REPORTED MONOLOGUE, REPORTED DIALOGUE, each of which may be SIMPLE (having but one TIME HORIZON and LOCALE) or COMPOUND (having more than one of either or both). Colloquy paragraphs, on the other hand, may be SALUTATION (initial), DEPARTURE (final), and DECLAMATORY, PRECATORY and EJACULATORY (all medial). Each of these has optional peripheral tagmemes:  $\pm$  ORIENTATION<sup>2</sup> (viz. TIME HORIZON and LOCALE),  $\pm$  SETTING<sup>n</sup> ("the circumstances which form a background to the paragraph nucleus" p. 76) and  $\pm$  TERMINAL ("a statement indicating fulfillment of that which is projected in the paragraph nucleus" p. 77). The obligatory nuclei are, for EVENT paragraphs, + FOCAL (with optional  $\pm$  DEVELOPMENT<sup>n</sup>); for MONOLOGUE paragraphs, + SPEECH (with optional  $\pm$  DEVELOPMENT<sup>n</sup>); and for DIALOGUE paragraphs + INITIATING UTTERANCE, + INITIATING RESPONSE (with optional  $\pm$  DEVELOPMENTAL UTTERANCE<sup>n</sup> and RESPONSE<sup>n</sup>). And so on.

Discourse-types include EPISODIC, MONO-CLIMACTIC and MULTI-CLIMACTIC, each of them consisting of strings of tagmemes from the list: APERTURE, STAGE, EPISODE, DENOUEMENT, ANTI-DENOUEMENT, CLOSURE and FINIS (though there may be co-occurrence restrictions from type to type). EPISODIC discourse has the formula:  $+/\pm$  APERTURE + EPISODE<sup>n</sup>  $\pm$  (+CLOSURE<sup>2</sup>  $\pm$  FINIS). The APERTURE tagmeme may be manifested by any SIMPLE narrative paragraph type, or by a DECLAMATORY or PRECATORY colloquy paragraph type (p. 109). And each of these tagmemes is manifested by a tagmeme of the level below, in a system whose detailed description would be unutterably tedious, since it consists merely of the progressive identification of ever smaller units in ever greater detail.

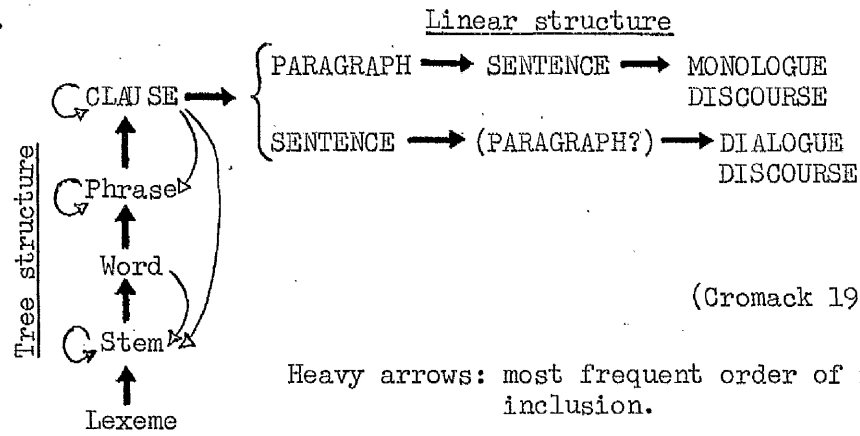
Since tagmemics is a system of analysis, that is, an a posteriori system, it leaves unanswered (and in fact does not even ask) the burning questions of modern linguistics: How does a native speaker correctly identify discourses as coherent? What constraints affect the deployment of meaning and information in discourses? How do discourses interact with extralinguistic systems? Do discourse-processes affect, or even motivate, sentence-processes? Are these questions about competence, or performance?

In the absence of studies at the lexical (semantic) level, then, the tagmemic model of discourse is a static, descriptive model illustrating nothing of the essential nature of discourse, namely its connectivity.

6.23 Cromack 1968

In contrast with the essentially exclusive PS (and non-transformational) nature of the tagmemic model at all levels, the stratificational model used by Cromack uses both trees and linear sequences at various points in the description: these are the "tactics" in the lexemic level. At the semantic level, the tactics consist of networks ("reticula"). The lexemic level is equivalent to the grammatical level of tagmemics (and not the lexical level, as one might think):

26.



(Cromack 1968:75)

Heavy arrows: most frequent order of ranking and inclusion.  
Light arrows: layering of units on same level, or embedding and inclusion on lower levels.

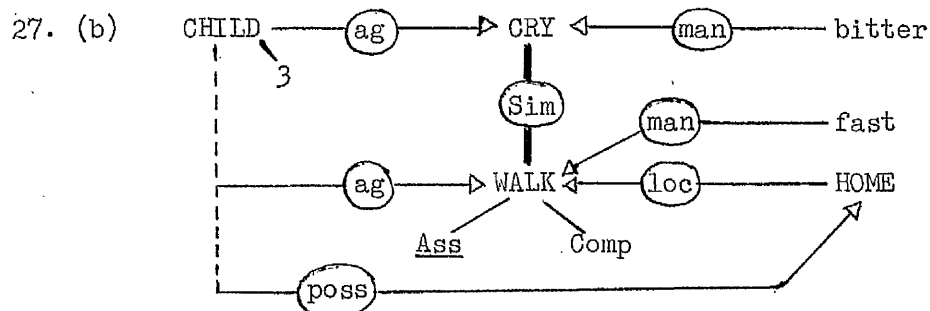
Cromack classifies his clause-level trees in tagmemic formulae with distributional restrictions (p. 82). He talks in process terms at various points: "the embedding of information in a phrase" (p. 91), "clauses may be included in other clauses" (ibid.), "repeating the predicate-modal construction and embedding more information before the repetition in the form of included clauses" (p. 92), "a parenthetical remark may be inserted" (p. 93), "for

emphatic effect the pronominal subject may be introduced at the beginning of the clause" (p. 99). "phasal pro-verbs substitute for another verb in the realization of a sememic event by overtly expressing one phase of that event and not the whole event" (p. 117). He also speaks extensively of "nominalization" (e.g. 216 sq.). However, this must merely be loose talk, since no formal local derivational machinery is introduced to relate trees in a derivation, and the model at this point appears to be determinedly distributional. In principle, though, this is merely a matter of Cromack's choice of model at this level: there is no reason why he could not have used the more powerful syntactic component of a ST-TG grammar to generate clause structures, since stratificational grammar is avowedly eclectic in its approach (cf. Cromack, op.cit:xvi, 4, 5 - 9).

The linear structure of discourse, in Cromack's view, is "sememically dominated but grammatically articulated" (p. 135). Thus, transitions between semological structures will be marked by lexemic features, and lexemic constituents (clause, paragraph, discourse) are characterized by two kinds of sememic actuality: (i) the topic in attention at each linear rank ("topic" in the sense 'focal/non-focal element'), and (ii) the distribution of modality. At this linear lexemic level, statements are made about types of distribution (e.g. "assemblies", "clusters", pp. 147 sq.), and also about particular privileges of occurrence. These latter are referred to as "rules", and are of the form "Given a context defined in terms of A, B, C ..., then forms/constructions X, Y, Z ... will occur, in such-and-such an order/unordered". The "given" conditions of these rules are sememic in nature, i.e. they are stated in terms of situations, objects and events; the arrangements bound to these conditions by the rule are generally stated in lexemic (grammatical) terms of constructions, etc., though there does appear to be some overlap here with sememic features (e.g. p. 202, where "highlighted action" occurs both in the conditions and in the consequence of the rule). Thus, the linear structure at the lexemic level is, like the tree structure, distributional in nature, and concerned exclusively with surface structure.

The semotactics, as I have already mentioned, are neither arboreal or linear, but reticular. This term refers to nothing more profound, so far as I can discover, than the net-like appearance of the diagramming used, in which syntagmatic and (some) paradigmatic relationships are shown simultaneously, the one horizontal, the other vertical (for the most part). Thus Cromack gives (p. 32) the "sememic reticular analysis" for the sentence

27. (a) The three bitterly crying children walked home fast,  
as follows:



With "semolexic realization rules", this reticulum would specify the semantic analysis of (27a). Cromack criticises Weinreich (1963:165, 200), whose example (27a) is, for his analysis of its meaning, using the higher predicate calculus. Weinreich breaks (27a) down into 11 propositions stated in logical form, but Cromack regards this explicitness as redundancy. He also criticises the lack of a focus mechanism. Cromack claims that "it would be much simpler and would show the semantic relationships more clearly to represent each facet once, or only as often as it actually applies in the semantic structure, rather than so rigorously carrying out a process seemingly dictated by logical theory and not by the structure of language itself". (p. 31). This seems to mean, for example, that CHILD in (27b) is only written once (though there are the equivalent of two sets of ditto-marks for its notional repetition), whereas the relator (ag) is written twice (because it "actually applies" twice?). However, I find it hard to justify or explain this distinction, which seems to base itself on surface structure exclusively.

There are a number of interesting features in Cromack's semology. Firstly, the status of these reticula: the basic elements are unanalyzed "objects" and "events", linked by various "relators" (agent, goal, completive, locative, manner, equational, assertion, etc.) and specified by various "abstracts" (durative, future, plural, animate, definite, etc.). These build up into proposition-like structures of horizontal lines, consisting of objects bearing relations to events, and these horizontals interrelated by vertically-diagrammed relations and repetitions. Furthermore, objects and events may bear attributes (abstracts, modals, modifiers, etc.), which are not relational. Stratificational semology, it could be suggested, is equivalent in descriptive power to a GS component specified for role-relationships and transderivational constraints (such as the one which has been suggested in Ch. IV). However, in that like the other levels of stratificational grammar it is analytic and distributional:

"The logical notion of operations to be carried out should be replaced in sememic analysis with units and arrangements, in accordance with the presuppositions of stratificational theory" (p. 217),

it clearly lacks the generative capacity of GS or even ST. See section 6.24 for arguments in favour of this conclusion.

Second, the stipulation of role-relations in semantic structure (rather than in grammatical structure, as Pike and Fillmore, for example), suggests that so-called "grammatical" relations are in fact semantically specified, a viewpoint which I myself have argued in the foregoing chapters.

Third, the treatment of focus, which for Cromack includes not only what is normally meant by the term (which he calls attentional focus), but also the amount of detail with which a topic is covered: the latter ("detail focus") in discourse terms is said to handle e.g. a plot summary (e.g. at beginning or end) versus the full narration (in some respects, therefore, this is comparable to Todorov's and van Dijk's "textual macro-structure" versus "textual surface structure". See section 6.25 below). However, Cromack provides no apparatus for relating less detailed focus to more detailed focus: it is no more, therefore, than another distributional observation. Another function of detail focus is identification by which sememic objects or events are to be introduced and referred to when required in the discourse. Identification rules in Cromack's system are semolexic realization rules which simply stipulate that for such-and-such type of identification (including anaphora, repetition, modality, etc.) such-and-such a lexemic form or construction will be used. The identification-type is specified in terms of sememic structure (for the most part). Attentional focus is also of two kinds: predication-line prominence (in which events may be linked to give the main "storyline", or "nested" to provide background), and topical prominence (by which sememic information may be highlighted. This is the standard use of the term focus). Again, these are stated in terms of observation or realization.

According to Cromack, the chief difference between discourse-requirements and clause-requirements is that the former call for linear order as opposed to hierarchical order (at the lexemic clause level) or lack of order (at the sememic clause level). Linear order in semological terms is imposed by three discourse-characteristics: sequence, connectivity and cohesion. Sequence is implied temporally or spatially by a proposition, and many of the relators are directionally assymmetrical. Connectivity is a function

of the predication-line. Cohesion concerns focus and modality (though quite how these are linear I am uncertain).

Interesting and detailed though Cromack's work is, it nevertheless fails to account for the connectivity of discourse in terms of semantic coherence and anaphora. Connectivity, as we have seen, is, in Cromack, a function of the predicate line: but this is to ignore the connective effect of pronouns, articles and certain modifiers, not to mention the thread of meaning running through any discourse. Focus, in its generally accepted sense, is a dynamic, progressive indication of speaker's interest, viewpoint and orientation, not a merely observed and ticketed phenomenon. But the greatest drawback of all is that all the structures at all the levels are connected not by rules successively deriving a lexemic structure from a sememic one, and a phonemic one from a lexemic one, but by rules of realization, which in fact are simply ad hoc marshalling rules, since there are no principles for a realizing A rather than Z.

#### 6.24 Sinclair and Coulthard 1975

The immediate aims of this monograph were to "examine the linguistic aspects of teacher/pupil interaction" in the classroom (p. 1), although the authors' further purposes were more general, if not exactly theoretical:

"Our interests were again in the function of utterances and the structure of discourse. We were looking for answers to such questions as: how are successive utterances related; who controls the discourse; how does he do it; how, if at all, do other participants take control; how do the roles of speaker or listener pass from one participant to another; how are new topics introduced and old ones ended; what linguistic evidence is there for discourse units larger than the utterance?" (pp. 3 - 4)

From the questions about control, it may be seen that the original material was to be ordinary conversation (following some remarks of Firth's, (1935; see 1957:28 sqq.)). However, it was soon realized that ordinary conversation is in fact highly sophisticated and complex (p.4). This led the authors to choose instead the more restricted classroom situation, in which one speaker has virtual control over topics and tactics of discussion.

The approach of this study is analytical, i.e. corpus-based, but the analysis is carried out in terms of a system of units and functions, obeying four "minimum criteria" (providing a useful assessment-battery for any descriptive system, in fact):



- A. The system should be finite (denumerable);
- B. The elements of the system should be definable;
- C. The system should be comprehensive;
- D. The system should be refutable (i.e. there should be at least one impossible configuration).

As we have already seen in section 2.11, the general framework of Sinclair and Coulthard's system is Hallidayan, with ranks, arranged hierarchically within each linguistic level. The levels themselves only tend towards hierarchality, since they overlap to some extent. Within each discourse rank, the elements of structure are serially ordered (with the exception of the LESSON rank, which - for lack of knowledge (pp. 59 - 60) - consists of an unordered series of transactions). The structural elements at each rank are realized by classes of the next rank below, each of which has its own structural elements. Since this system is hierarchical and expansive, it is capable of expression in tree form and, of course, in rewrite rules, though since this particular set of rules is intended to cover the restricted situation of classroom dialogue, the structures at each level (i.e. rank) will be distributed between a dominant speaker and various individuals from a dominated set (the "phenomena of interaction", p. 122). They also tend to realize "elicitation-response" pairings at each level.

So far, then, we have a hierarchical, taxonomic system of including and included terms, which at the discourse level are functions rather than formal categories, i.e. they refer outwards to the situation, rather than inwards to the physical characteristics of the realization.

In syntactic studies, (in S-grammars), phrase-structure has been assessed in two ways:

- (i) Is a grammar whose syntactic component consists exclusively of PS rules adequate to describe natural languages?
- (ii) Should the PS component in a transformational grammar express categorial or semantic configurations?

It has been conclusively demonstrated (e.g. Chomsky 1957, Postal 1964) that the answer to (i) is "no". Postal (1964:73-5) lists eight points which PS grammars fail to handle correctly or at all. I shall not repeat these here, but the case is overwhelming and generally accepted. In the same work, Postal claims that Halliday's grammatical system is essentially a PS grammar, as are tagmemics, stratificational grammar and Harris' grammar, and that they

all thereby fail. Halliday's defence (1964) is that the goals of his grammar are different from, and therefore cannot be judged by the same criteria as, those of "formalized linguistics". This would be undeniable were it not for the fact that there are some sentences of natural language - those involving discontinuity, "understood" (deleted), or substituted elements, or ambiguity - which cannot, or cannot easily, be accounted for by Halliday's (or Pike's, Lamb's or Harris') grammar. Thus the choice of grammatical system is a matter of consumer preference (as Halliday has it) only if the consumer is remarkably indifferent to the question of adequacy. Sinclair and Coulthard are - from the level of grammar downward and with the single exception of "rankshifting", which they regard as an "embarrassment" (p. 123) - completely Hallidayan in their grammatical system. This therefore suffers the same fate. Above the level of grammar, however, we must decide whether the charge of failing to account for all and only the discourses of English is a just one. For example, are there discontinuous, "understood", substituted or ambiguous elements at discourse level? If there are, rules analogous to transformations will be required.

Discontinuities, interpolations or asides clearly do occur in spoken discourse. Sinclair and Coulthard have "aside" as a class of act (p. 44): "this category covers items we have difficulty in dealing with". Interruptions, too, would often bring discontinuity about, and we might even include direct quotation, since the linguistic restrictions on direct speech, for example, are very different from those on its surrounding context. I would suggest that such discontinuities are in fact the result of inserting one discourse, having a different system of modality, or tense, or subject-matter etc., into another. But this requires the notions of (a) underlying discourse, and (b) an operation of interpolation - I do not see how Sinclair and Coulthard's purely surface-description taxonomy can handle this.

"Understood" elements are arguably present in such discourses as might occur in casual or occupationally restricted language-registers, where, for example, the main topic, or important elements of the situation, will rarely be explicitly referred to, yet are incontrovertibly understood. If this is indeed the case, then an operation analogous to a deletion transformation would seem to be necessary. Sinclair and Coulthard provide no such device, which again requires the notion of underlying discourse.

Substitutions (viz. pro-forms) do occur in discourse, though not extensively, as far as I can tell. The pro-forms so far examined in the literature, having

the largest domains are, I believe, pro-S and pro-Pred forms such as so, that and this. I would maintain that such locutions as the above, the previous/following paragraph/section/chapter, in section/chapter (+ number), there etc. function as pro-forms in written discourse, at least, though no similar forms for spoken discourse come to mind. If this is so, and if the semantic relationship (of identity) between the antecedent and its pro-form is required to be recoverable, then a substitution operation is needed at discourse level. Again, this requires the notions of underlying discourse and transformation, neither of which can Sinclair and Coulthard provide.

Ambiguities at discourse-level clearly do occur, i.e. in discourses having one surface-structure, but two or more possible interpretations (deep structures). The obvious type of instance here is irony, in which the discourse superficially expresses an innocuous, or fatuous, etc. viewpoint, whilst at the same time the opposite viewpoint may also be understood, (and indeed is preferable). Just as sentence-ambiguity is explained in TG as deriving from different underlying structures which converge transformationally, so, I would suggest, we should explain discourse-ambiguity as deriving from different underlying discourse-structures which converge superficially. Another type of discourse-ambiguity, I would suggest, is also to be found in literary language, and that is the device we may call "counterpoint". In Shakespeare's Sonnet 129, for example, there are two separate time-scales which conflict (see Werth, f'coming c), and similar uses may be found in such widely disparate works as Sidney's Arcadia and e. e. cumming's Anyone lived in a pretty how town. Again, I cannot see how Sinclair and Coulthard's system could account for discourse-ambiguity as exemplified above (although, admittedly, they are studying discourse from an entirely different register. However, discontinuities and "understood" elements, if not substitutions and ambiguities, will still occur and have to be accounted for in classroom discourse).

I should mention, before leaving the topic of ambiguity, that Sinclair and Coulthard do in fact look at the problems of pragmatic ambiguity also examined in Gordon and Lakoff 1971 (see section 2.13). Specifically, they look at interrogatives which can have the meaning of questions or commands (pp. 28-33). (They also mention (p. 124) statements which may be interpreted as suggestions). These are not in fact discourse-ambiguities, like those I have just mentioned, but sentence-ambiguities which are, however, disambiguable by reference to the situation, e.g. physically possible and proscribed

actions at the time of utterance, and actions prescribed before the utterance. (These situational elements are, of course, neither well-defined nor systematically understood). Their system of rules covering these phenomena are equivalent to surface-structure interpretation rules, in which the situational context of a given interrogative is examined for the criterial situational categories mentioned above, and the correct interpretation automatically follows.

I conclude, then, that the general argument against PS grammars applies as much at the discourse level as at the sentence level, and that Sinclair and Coulthard's approach, interesting and insightful though it is in many informal ways, is inadequate to the description, let alone the formalization, of discourse. The same arguments apply, mutatis mutandis, to the systems in sections 6.21-23.

The second question about phrase structure concerned whether it should be semantic or categorial in nature. Sinclair and Coulthard again follow Halliday in making their terms "functions" rather than semantic features, sememes (or semons) etc. Thus the content of their terms is related to their use in situations (rather than their denotation or reference). This means that Sinclair and Coulthard provide absolutely no means of specifying the semantics of discourse, nor in particular the thread of connected meaning which both unites and characterizes a discourse, and which I have called coherence (see section 2.23).

#### 6.25 Van Dijk 1972

Van Dijk's work occurs not only in the context of American TG (and particularly GS), but also in the midst of considerable, concentrated European study of text-grammars (see e.g. Petöfi and Reiser 1973). There are, of course, differences between the individual approaches to these, largely, German and Dutch scholars, but in broad terms they agree upon the aims and general direction of text-grammar. I have selected van Dijk to represent this group, because of them all he has probably published the most, and his 1972 book offers what is essentially a consensus of their ideas.

Text, for van Dijk is "an abstract notion ... underlying what is intuitively known as 'connected discourse'", (p. 1), the formal structure of which is accounted for in a text-grammar. Van Dijk's arguments for incorporating T-grammar in linguistic theory are both empirical and grammatical. His empirical claim is that "T-grammar gives a more adequate account

of the systematic phenomena of natural language by describing and explaining 'more facts' and providing more relevant generalizations than existing S-grammars", (p. 2). These systematic phenomena include both structural-syntactic regularities and facts of psycho-social settings, ie. aspects of language in use, which some linguists of ST persuasions would want to relegate to performance (see section 2.14 above). Van Dijk argues that since the utterance, and not the sentence, is the unit of language performance, and since the system of competence is inferred from performance, there is no a priori reason for maintaining that the formal linguistic unit underlying an utterance is the sentence. In observable fact, utterances are discourses (i.e. sets of connected sentences), whose underlying unit is the text, consisting of n sentences ( $n \geq 1$ ). If native speakers can distinguish between coherent and non-coherent discourses, this is a fact of their competence. Other related abilities which a grammar must explain are: recognising similarities between texts, paraphrasing texts, disambiguation, interpreting semi-sentences, processing formal connectedness (cohesion), processing text types (registers), and recognising text plans.

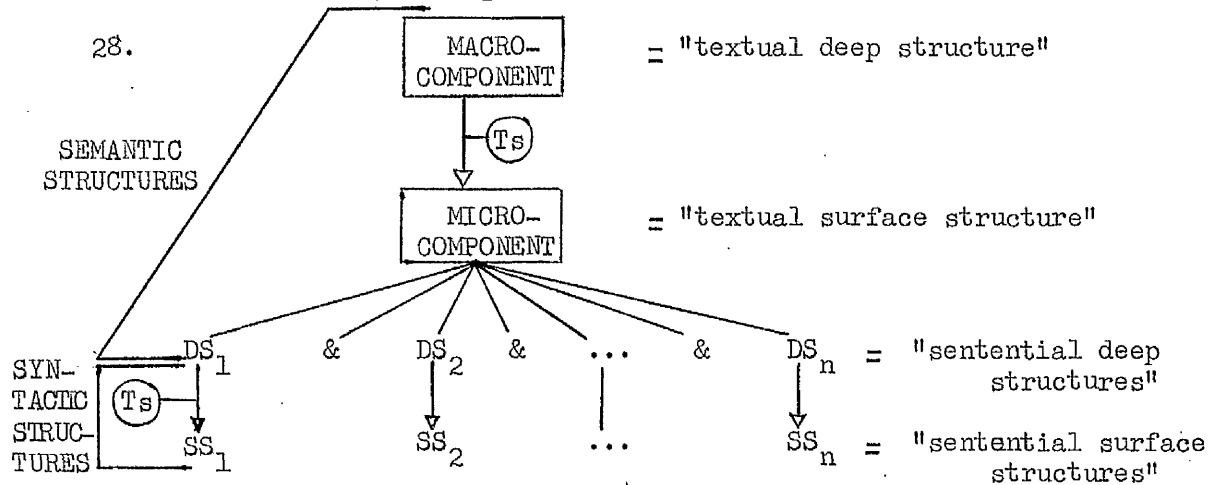
The grammatical arguments concern "those properties of sentences which seem to be a function of sequences", (p. 7), (cf. my comments in sections 1.3 and 2.3). These include: intonation and stress assignment, definitization (cf. section 3.1), pronominalization, tense, mode and aspect specification, topic and comment (and thence topicalization and passivization), (cf. section 2.3), synonymy between compound Ss and sequences of Ss, conjunction and sentential adverbs, presuppositions and entailments (cf. section 2.17).

Van Dijk then (p. 11) formulates the tasks of an adequate T-grammar:

- (i) to formulate all and only grammatical texts of a language;
- (ii) to assign SDs to each text generated, and to a set of semi-grammatical texts not generated;
- (iii) to formulate rules and conditions for the well-formed concatenation of sentences in a linearly ordered sequence;
- (iv) to formulate the rules describing macro-structures of texts and relating them to the sequential structures;
- (v) to formulate the rules forming and relating semantic structures with phonological structures of all the well-formed texts of a language.

He comments that the S-component of a T-grammar is superior in strong generative capacity to a S-grammar, because it provides more satisfactory SDs of sentences, as a proper sub-part of providing SDs of texts.

The form of van Dijk's T-grammar is:



The macro-structure is "the abstract underlying structure or 'logical form' of a text", (p. 17); it is specified in terms of (macro)-semantic rules, since PS rules do not apply to texts, which as a whole do not have immediate constituents. (Some schools of thought, as in the preceding sections, would disagree with this conclusion. However, as we have seen in section 6.24, a text-grammar consisting of PS rules alone is inadequate). Van Dijk justifies the notion of macro-structure by invoking the notion of coherence, which cannot be handled by the textual equivalent of local filters, stipulating the transitional constraints between successive Ss. Instead, what is needed is the textual equivalent of global rules, handling the non-sequential connectivity of Ss separated in the text, (cf. my remarks in section 1.3 and Ch. V).

Macro-structure, van Dijk claims, is the formal analogue of the psycholinguistic programme, plan or strategy of a discourse (and thus it is that the native speaker can reconstruct the "gist" of a discourse far more readily than he can reproduce the actual surface structures). He therefore conceives of it as a "summary" or "abstract", in form structurally akin to that of the proposition (cf. my remarks on the structure of situations, in section 2.11), and provides what amounts to a discovery procedure (pp. 157 sqq.):

- (i) represent the text as "a structure of intuitively verbalized propositions";
- (ii) formalize this abstract;
- (iii) formulate rules to generate it.

The weakness of this approach to textual deep structure lies in its irrefutability. Since, as van Dijk is the first to admit (e.g. p. 159), the

transformations relating macro-structure to micro-structure are not well-defined, there are no constraints upon the form of macro-structure as yet. Thus, in sorting out the "gist" of a text, different analysts will undoubtedly vary on the propositions they consider central. Furthermore, even if agreement were to be reached on this point, it is nevertheless not necessarily the case that the remainder of the text is peripheral (and one is reminded here of Harris's "irrelevant modification!"). To be sure, this is a criticism of van Dijk's analysis of an example (in fact, any example) at this level. Earlier, he provides an algorithm for generating macro-structure which is similar, as we have already mentioned, to that generating propositional structures. But any such set of rules stands or falls on its empirical content, and van Dijk's worked example shows a very shaky connection between the generative rules and the facts they attempt to formalize. This viewpoint is, of course, amenable to modification in the event of either internal or external justification of the rules and their application: internal justification would come from a well-motivated set of transformations mapping macro-structure on to micro-structures; external justification would be psychological or sociological. Van Dijk's account of textual surface structure is, on the other hand, altogether more successful, since, although precisely the same set of rules is used, their empirical content is better-understood (which is to say that the underlying propositions postulated are related to sentential surface structures by transformations which, if they are not absolutely understood, are at least better-known than their macro-structural equivalents).

At this level, he provides means of explicitly specifying such relations between sentences as:  $\equiv$  'equivalent to';  $\cap$  'intersects with';  $\subseteq$  'includes';  $\rightarrow$  'inductively entails';  $\subset$  'implies', (though van Dijk does not use all of these symbols). A constraint on any text is that immediately-successive sentences in it must be neither equivalent nor contradictory, ie. they must be non-redundant and consistent.

Since I have incorporated a version of van Dijk's rules for textual surface structure into my own rules (Chs. IV, V), I shall not examine them further here. Portions of his argument may also be found in section 3.14.

In summary, the weakness of van Dijk's approach, owing perhaps to lack of present knowledge rather than any structural deficiency, lies in the "macro-transformations" mapping macrostructure on to micro-structure. Assuming that macrostructure is a necessary level (and the main arguments

are two: psycholinguistic, the ability to recall the gist of a discourse with greater ease than its surface structures; and semantic, the coherence of a text selecting its lexemes throughout), and given that such an assumption is not hindered by the metatheoretic principle of isomorphism (since the relationship between textual deep and textual surface structure is modelled upon the syntactic distinction; furthermore, the rule-content of macrostructure is identical with that of syntactic deep structure), then it is a reasonable hypothesis that the transformations at this level are similar, not to say identical perhaps, with those filtering syntactic deep structures on to surface structures. However, I remain unconvinced that macrostructure is a necessary linguistic level. Psycholinguistically, from the reception point of view, the ability to construct an abstract of a discourse is identical with the ability to paraphrase a sentence. The latter suggests the existence, in some sense, of sentential DS (though not necessarily related very directly to the particular paraphrase selected), but by itself this would be a very weak argument; the compelling arguments are linguistic in nature. But the linguistic argument for macrostructure - that it accounts for the coherence of texts - provides no necessary conclusion of the existence of macrostructure. Van Dijk's actual apparatus for handling coherence is an elegant device which he calls a "global coherence constraint". Note that a global constraint imposes restrictions on a tree dictated by the form of some earlier tree in the derivation. In discourse, the trees will often be non-contiguous, due to their occurrence in different derivations (i.e. separate sentential DSs within the same text). Clearly, then, this is a textual surface-structure constraint, as formulated. But van Dijk suggests (p. 160) that the global constraint is in fact a constraint on macrostructure, specifically on the underlying formation of semantic representations and the selection of lexical items. It seems plain, though, that the underlying formation of semantic representations in macrostructure is governed by the global coherence constraint merely for the trivial reason that these SRs are (intuitively) derived from the textual surface structure, which is governed by that constraint; while the selection of lexical items may actually take place at various points in the derivation from textual surface structure to sentential surface structure, where the former is governed by the constraint under discussion. There is also an important methodological argument: sentential DS (of some kind) has been overwhelmingly shown to have crucial semantic and syntactic functions in linguistic theory and practice; no such demonstration has been made for textual DS. I conclude that the



existence of that level is (weakly) supported only by the psycholinguistic argument; in fact, the ability which this recognises may not be linguistic at all, but an aspect of the much more general psychological function of behaviour-planning: in the same way that it takes an extraordinary (though not in principle or in fact impossible) ability to reproduce a discourse verbatim, so does it take an extraordinary (though again not impossible) ability to reproduce a complex series of movements, such as a ballet sequence, after only one viewing. Both sets of behaviour, of course, presuppose the ability to perform the basic activity.

If macrostructure is an unnecessary level, then the distinction between textual deep and textual surface structure is no longer needed. We may then revert to the term text (or discourse) structure, being essentially a sequence of DSs bound by transderivational (text-local) and coherence (text-global) constraints. The ability to abstract, précis or summarize is not one which all speakers apparently possess by virtue of their being speakers: it must often be consciously learnt. The following ghastly reminder of this is from Quirk (1968:180):

29. You see um the the um the chief lecturer there is is er um ... he is the main lecturer though really he has one or two subordinates but he is the ... he gives the lectures the main lectures ... there are seminars as well and discussions following upon those but the main lectures are given by him ... and he tries ... to maintain ... um a balance I mean he talks so far he's talked about I missed the last one um unfortunately but he's talked ... er and given various sides he's given what he called the er the religious ... um aspects of philosophy those who have ... a religious point of view who believe in values you know er ... existing outside the human community ... and then what he calls ... the ... the the secular point of view or the transsecular I think oh no secular point of view ... opposed to the transsecular which embodies religious and er the other ... er mystical er um approaches I suppose.

These facts cast considerable doubt on the proposition that the ability to summarize is an aspect of linguistic competence.

CHAPTER VII

SUMMARY AND CONCLUSIONS

## CHAPTER VII: SUMMARY AND CONCLUSIONS

The central chapters in this study of relativization are Chs. II, III, IV and V. Ch. II, though containing little direct discussion of relative clauses, nevertheless establishes that many of the elements contributing to the meaning of relatives (and other constructions) are in fact contextually-determined: in particular, presupposition and focus. The chapter examines at some length the notion of context, situational and linguistic, and proposes an informal account of movement transformations, motivating them by the contextually-determined operation of focus. Ch. III investigates in detail the role of the determiner in relative clauses, in relationship to their function in discourse, and reveals a number of interpretative types of relative, both R and NR. Section 3.2 of Ch. III examines the degree of "squishiness" between a number of different constructions including R and NR. Ch. IV looks at the components of a semantic theory, puts forward a set of rules generating semantic configurations, and discusses the problems of relating such configurations to (i) ontological meaning, and (ii) lexical items. Ch. V applies the rules post-lexically to derive Rs and NRs respectively, and investigates the modifications made by the context on the basic sense specified by the rules. Ch. V thus brings together Chs. II, III and IV.

The more peripheral chapters (both in position and importance) are Chs. I and VI. I is introductory, but in the course of its preamble examines a number of clause-types which might be taken as relative. Some of these are returned to in Ch. III. Ch. VI looks at previous work on the semantics of relativization (confining itself to TG), and finally reviews at some length, though selectively, contemporary and previous work on discourse.

My main conclusions are as follows:

- (A) Rs are semantically (as well as syntactically) subjoining, while NRs are conjoining. However, the relationship between the conjuncts in a NR is not necessarily of the information-adding type ("logical '^'"), as the usual account has it. Rather, the connections are often causal, concessive or sequential, and as such, equivalent to intersentential, as well as intrasentential, connections. The subjoint nature of Rs (rather than conjoint, as claimed by Thompson 1971 and Jacobson 1972, for example) is indicated by (i) the comparative importance of the antecedent and the relative clause (traditionally, "head" vs. "modifier").
- Thus:

1. (a) The girl who collects Stones records ...  
as opposed to:

(b) The collector of Stones records who is a girl ...  
suggest a different relative weighting of attention. If this is to be  
handled by Focus (as is indeed feasible), with two conjuncts previously  
undifferentiated:

(c) The x (x is a girl) and (x collects Stones records),  
then the fact still remains that these conjuncts are nevertheless  
subordinate to a more general term. However, a more important con-  
sideration is (ii) such Rs as (1a, b) are to be interpreted as insepa-  
rable units: not just any girl, but some girl specified just so. It  
may be argued that the conjunction analysis uses logical ' $\wedge$ ', meaning  
'both items', so that the specific interpretation automatically follows.  
However, logical ' $\wedge$ ' entails its conjuncts separately, as well as in  
combination, and this is often (if not always) wrong for natural lang-  
uage:

2. (a) I spoke to a man who had become a woman  
does not entail:

(b) I spoke to a man.

- (B) The basic R is the generic; other deictic types (e.g. anaphoric, cata-  
phoric) are regularly derived from the generic in directions determined  
by the context. This requires the semantic theory to include or itself  
be embedded in (depending upon the broadness of the definition of  
semantics) a theory of context, both situational and linguistic. The  
latter of these suggests the necessity for determining the grammar of  
discourse.
- (C) The generic Rs so generated are regularly related to lexical items by  
a relationship of partial or complete synonymy. However, contextualized  
Rs (specified deictically and focally) are unlikely to be similarly  
related. Not every generic R, even, necessarily has its corresponding  
lexical item, and the choice of lexical form may be haphazard and random.  
However, the relationship is best expressed as a sharing of the same  
underlying semantic configuration; a lexical item will tend to represent  
such a configuration exhaustively (i.e. without residue), while an  
expression (such as an R) will perhaps represent only a part of the  
total configuration. The grammatical theory required by these sort of  
facts is one which allows the specification of roles, the direct rep-  
resentation of meaning, and prelexical transformations. GS is such a  
theory.

(D) Relative clauses are not in fact as distinct as traditional studies suggest. There is a considerable overlap with several other groups, notably the focussed constructions (cleft, pseudo-cleft). I have represented the derivation of this continuum in this way: focussed constructions form a relative-clause in derived structure, by means of a rule motivated by focus in context. Rs have a subordinate-clause arrangement in their basic structure, although it may be possible to accept that a conjunction embedded beneath a variable and distinguished by focus, will still allow the necessary semantic distinction to be made. Focus may indeed be responsible for much more in language than the discipline currently recognizes:

GRAMMATICI CERTANT ET ADHUC SUB JUDICE LIS EST.

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